NCAHRS-AIIMS

National Conference on Advance Healthcare & Rehabilitation Sciences

Theme:
Redefining Multidisciplinary Care: Evidence-Based Approaches for Advanced Health Care

April 9th - 10th, 2026
Pre-Conference
WORKSHOPS

April 11th - 12th, 2026
CONFERENCE

JL Auditorium, AIIMS, New Delhi

ORGANISED BY: DEPARTMENT OF GERIATRIC MEDICINE, NCA, AIIMS, NEW DELHI

डॉ॰ यज्ञा उन्मेष शुक्ला, (पीएच.डी)
अध्यक्ष, एन सी ए एच पी

Dr.Yagna Unmesh Shukla,(Ph.D)
Chairperson, NCAHP

सत्यमेव जयते

राष्ट्रीय सहबद्ध और स्वास्थ्य
देख-रेख वृत्ति आयोग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार
Government of India
Ministry of Health & Family Welfare
National Commission
for Allied and Healthcare Professions

Message

It gives me immense pleasure to extend my greetings and best wishes on the occasion of the National Conference on Advanced Healthcare and Rehabilitation Sciences (NCAHRS-AIIMS 2026), organized by the Department of Geriatric Medicine, National Centre for Ageing, AIIMS, New Delhi.

The theme "Redefining Multidisciplinary Care: Evidence-Based Approaches for Advanced Health Care" is highly relevant and timely. In an era where healthcare challenges and particularly for our ageing population are increasingly complex and interconnected, true progress lies in breaking silos and embracing collaborative, integrated models of care. By bringing together physiotherapists, occupational therapists, dietitians, psychologists, speech and language therapists, special educators, prosthetists & orthotists, clinicians, academicians, and researchers, in this conference exemplifies the spirit of interdisciplinary synergy.

Events like NCAHRS 2026 play a pivotal role in advancing evidence-based practices, fostering innovation, and building capacity to meet India's evolving healthcare needs.

May this conference spark new ideas, strengthen collaborations, and reinforce our collective resolve to deliver compassionate, effective, and advanced care to our senior citizens.

My heartiest congratulations to the entire organizing committee and best wishes for a successful and impactful event.

With warm regards,

Dr. Yagna Unmesh Shukla(PhD)
Chairperson
National Commission of Allied & Healthcare Professions (NCAHP)

From the Desk of the Head, Department of Geriatric Medicine

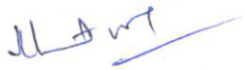
Greetings and best wishes on the occasion of the National Conference on Allied Healthcare and Rehabilitation Sciences organized by the Physiotherapy Unit, Department of Geriatric Medicine, AIIMS, New Delhi. The theme, *"Redefining Multidisciplinary Care: Evidence-Based Approaches for Advanced Health Care,"* is both relevant and forward-looking, reflecting the evolving paradigm of integrated healthcare delivery.

In contemporary medical practice, the management of patients extends beyond diagnosis and pharmacological intervention. It necessitates a holistic, team-based approach wherein allied health professionals play a crucial role in ensuring optimal recovery, functional independence, and improved quality of life. The synergy between clinicians and rehabilitation experts is fundamental to achieving comprehensive patient care.

This conference assumes significance as it brings together diverse professionals on a common platform to exchange knowledge, deliberate on emerging evidence, and strengthen interdisciplinary collaboration. Such academic engagements are vital for bridging gaps between research and clinical application, thereby enhancing the standards of healthcare delivery.

I appreciate the efforts of the organizing team in conceptualizing this important initiative and bringing together experts from various disciplines. I am confident that the conference will stimulate meaningful discussions and contribute to advancing evidence-based, multidisciplinary care.

Wishing the conference every success.



Dr. Naveet Wig

Head of Department, Geriatric Medicine
AIIMS, New Delhi

MESSAGE

It is both an honour and a privilege to extend my warm greetings and best wishes to all delegates, distinguished faculty, and participants of the National Conference on Allied Healthcare and Rehabilitation Sciences being organized by the Physiotherapy Unit, Department of Geriatric Medicine, AIIMS, New Delhi. The theme of the conference, "Redefining Multidisciplinary Care: Evidence-Based Approaches for Advanced Health Care," is profoundly relevant in the present era of evolving healthcare, particularly in the domain of geriatric medicine, where the need for comprehensive, coordinated, and patient-centric care is paramount. With the steady rise in life expectancy, the burden of chronic diseases, frailty, and functional decline among the elderly has increased significantly. In this context, allied healthcare professionals form the backbone of geriatric care. Their role extends far beyond supportive therapy-they are central to early intervention, functional restoration, prevention of disability, cognitive and communication rehabilitation, nutritional optimization, and enhancement of overall well-being. Through sustained and coordinated efforts, they enable older adults to maintain dignity, independence, and an improved quality of life. The strength of geriatric care lies in the seamless integration of multidisciplinary expertise. This conference stands as a testament to that vision, providing a distinguished platform for intellectual exchange, dissemination of evidence-based practices, and fostering of collaborative partnerships across diverse healthcare domains. It offers an invaluable opportunity to reflect upon emerging challenges, explore innovative solutions, and collectively shape the future of rehabilitation sciences. I commend the organizing committee for their exemplary initiative and meticulous efforts in convening this significant academic gathering I am confident that the deliberations and interactions during this conference will inspire new perspectives, strengthen professional bonds, and contribute meaningfully to advancing the standards of geriatric and rehabilitative care. I convey my sincere wishes for the grand success of the conference and for a highly enriching academic experience for all participants.

With warm regards,

Prof. (Dr.) Avinash Chakrawarty

Organising Chairperson NCAHRS

Prof. Dept of Geriatric Medicine AIIMS, New Delhi

MESSAGE

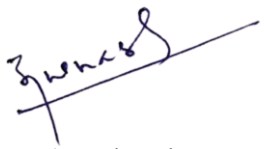
Organising Secretary

NCAHRS - AIIMS New Delhi

It gives me immense pleasure to welcome you all to the National Conference on Advanced Healthcare and Rehabilitation Sciences (NCAHRS) at AllMS, New Delhi. This conference brings together a diverse group of clinicians, researchers, academicians, and students from across the country, united by a shared vision of advancing healthcare and rehabilitation sciences. In an era of rapid medical and technological progress, such platforms are essential for exchanging knowledge, fostering innovation, and strengthening interdisciplinary collaboration. The theme of this conference reflects our commitment to improving patient care through evidence-based practices, cutting-edge research, and integrated rehabilitation approaches. I am confident that the scientific deliberations and discussions will inspire new ideas and pave the way for future advancements in this field. I sincerely thank all our esteemed speakers, delegates, sponsors, and organizing team members for their valuable contributions and unwavering support in making this conference a success.

I wish all participants a highly enriching and memorable academic experience

Warm regards



Dr. Avinash Dhargave

Organising Secretary

NCAHRS -AIIMS New Delhi

SCIENTIFIC PROGRAM

SCIENTIFIC PROGRAM 11TH APRIL JL AUDITORIUM (HALL A)		
8:00AM-9:00AM REGISTRATION and BREAKFAST		
TIME	TOPIC	RESOURCE PERSON
SESSION I **"Empowering Older Adults: Evidence-Based Strategies for Bone Health, Resilience, and Meaningful Occupation."**		
9:30AM-9:45AM	Fragility to Strength :Evidence Based Strategies for Managing Osteoporosis in Geriatric Women	**Dr Richa Goswami (PT)** Project Research Scientist II Dept of Obs and Gynae AIIMS,New Delhi
9:45AM-10:00AM	Wellness in the Psycho sexual Arena :The Shaping Influence of Parental Socialization on Emerging Adulthood	**Dr. Kanika K Ahuja** Principal and Professor Department of Psychology, Lady Shri Ram College for Women, University of Delhi
10:00AM-10:15AM	Restoring Rest for Meaningful Occupations :The OT Way	**Dr. Leena Deshpande(OT)** Associate Professor Occupational Therapy School and Centre, GMC Nagpur
10:15AM -10:30AM "Brain Mapping: A New Tool in Physiotherapy" **Key Note Speaker** **Dr Ali Irani (PT)** **Head of the Department for Physiotherapy and Sports Medicine& Rehabilitation Centre at Nanavati Max Super Specialty Hospital Mumbai Chairperson International Affairs: Indian Association of Physiotherapists**		
10:30AM-11:30AM **INAUGRATION CEREMONY**		
11:30AM-11:45AM "Emotional Distress in Normal Life :Coping and Recovery" **Key Note Speaker** **Dr. Nand Kumar** **MBBS,MD Psychiatry** **Prof. In Charge ICMR CARE in Neuromodulation for mental Health,** **Department of Psychiatry,** **AIIMS, New Delhi**		
SESSION II Advancing Inclusive Care Across the Lifespan: Integrating Disability Education, Sensory Health, Movement , and Mental well being."		
11:45AM-12:00PM	Policy, Practice ,and Participation: Redefining Disability Education Through NEP 2020 at Jamia Milia Islamia	**Dr. Mohd Faijullah** Associate professor of Special Education (Learning Disability / Visual Impairment), Dept of Teacher Training and Non-Formal Education, Jamia Milia Islamia, New Delhi
12:00PM-12:15PM		**Dr. Patitapaban Mohanty (PT)** Director, SVNIRTAR Odisha
12:15PM-12:30PM	Navigating Barriers : The Multifaceted Struggles of Elderly Population	**Dr. Shyam Ganvir (PT)** Principal cum Professor Dr Vithalrao Vikhe Patil Foundations, College of Physiotherapy

		Ahilyanagar Maharashtra
12:30PM-12:45PM	Reach to Unreached	**Mr. Mukesh Doshi** Senior Consultant P&O Mumbai
SESSION III "Innovative Approaches : From Brain–Body Regulation to Assistive Solutions"		
12:45PM-1:00PM	Autonomic Relaxation and Ventilatory Strategies.	**Dr. Monalisha Pattnaik (PT)** HOD, Dept of Physiotherapy SVNIRTAR Odisha
1:00PM-1:15PM	The digital age and Evolving Family Systems	**Dr. Jotika Judge** Assistant Professor Chitkara School of Psychology and Counselling Chitkara University ,Punjab
1:15PM-1:30PM	Evolution of Powered Upper Extremity Orthosis	**Mr. Vignesh Kumar. M** Demonstrator P&O, NIEPMD Chennai
1:30PM-2:00PM LUNCH		
SESSION IV Bridging Education, Mental Well Being ,Critical Care, and Nutritional Advances."		
2:00PM-2:15PM	Building Positive Mental Health: Evidence Based Psychological Interventions	**Prof.(Dr.) Neera Pant** Department of Psychology Gargi College, University of Delhi Siri fort Road New Delhi
2:15PM-2:30PM	Approaches in Inclusion-Understanding Inclusive Practice on Education	**Sangeeta Kardam** PGT (SET) Directorate of Education Govt Of NCT New Delhi
2:30PM-2:45PM	Recent Advances in Chest assessment in ICU	**Dr. Sachin Bhushan (PT)** Physiotherapist Dept of CTVS AIIMS,New Delhi
2:45PM-3:00PM	Perioperative Nutrition Management	**Dr. Richa Jaiswal** Registered Dietician, Ph. D, Surgical Disciplines, AIIMS,New Delhi
SESSION V "Contemporary Rehabilitation Strategies: From AI-Driven Decisions to Biomechanics and Geriatric Care"		
3:00-3:15PM	From Data to Decision :AI Driven Return to Play Strategies in Rehabilitation	**Dr. Anshu Gulati (PT)** Physiotherapist Sports Injury Centre Safdarjung Hospital New Delhi
3:15PM:3:30PM	Beyond Friction :The Modern Pathomechanics Of Iliotibial Band Syndrome	**Dr. Nidhi Bhatia Sachdev (PT)** Physiotherapist Department of Orthopedics AIIMS,New Delhi
3:30PM-3:45PM	Geriatric Nutrition and Rehabilitation	**Prof. (Dr.) Pratibha Singh** Professor , Department of Nutrition and Dietetics, Manav Rachna International Institute of Research and Studies, Faridabad

3:45PM-4:00PM "From Ideas to Impact :Winning and Managing Project Grants in Allied and Healthcare Disciplines"

Key Note Speaker
Prof.(Dr.) Prakash kumar, MOT, PhD M.sc (TCD, Ireland)
Principal and Professor Mahatma Gandhi Occupational Therapy College
Mahatma Gandhi University of Science and Technology, JA

4:00PM-4:30PM **Panel Discussion**
"Future of Multidisciplinary Care Delivery : Policy, Practice & Research"

Session **VI "Rehabilitation Across the Continuum: Nutrition, Aging, and AI"**		
4:30PM-4:45PM	Role of Nutrition in Cancer	**Ms. Anjali Bhola** Nationally Registered Dietitian M. Sc (Foods & Nutrition) , DDPHN Department of Dietetics NCI, Jhajjar ,AIIMS New Delhi
4:45PM-5:00PM	Rehabilitation in the AI Era :Recent Advances and Transformative Innovations	**Dr. Subhash Garg Professor and head MOT(Neuro)** PGDM(CMC)VELLORE,M.A Psychology Sri Aurobindo Institute of Allied health &Paramedical Sciences Indore (M.P) Member of National Commission for allied &Health care Professions Madhya Pradesh
5:00PM-5:15PM	Stronger Years Ahead :Preventing Sarcopenia Through Movement	**Dr. Sandeep Singh (PT)** Professor and Principal Christian Medical College and Hospital, Ludhiana
Session VII "Evolving Frontiers in Rehabilitation : From Traditional Foundations to Molecular and Therapeutic Innovations"		
5:15PM-5:30PM	Redefining Myocardial Protection :Multidisciplinary Evidence from Photo biomodulation Therapy	**Dr. Mandeep K Jangra (PT)** Associate Professor Maharishi Markandeshwar (Deemed to be) University Mullana -Ambala
5:30PM-5:45PM	Ancient to Recent Physiotherapy in India	**Professor (Dr.) Anand Mishra** Registrar Sri Aurobindo University Indore
5:45PM-:6:00PM	Exploring the Chemerin-CMKLR1 Axis A Physiotherapy Approach	**Dr. Ghufran Jaleel (PT)** Assistant Professor (Physiotherapy) Paramedical college Aligarh Muslim University
6:00PM-6:15PM	Visual Perception as a Focus Area in Pediatric Occupational Therapy	**Dr. Ganesh B. Tajane** M.O.Th Developmental Disabilities Consultant at the Aditya Birla Integrated School, Mumbai Joint Secretary-Commonwealth Association for Health and Disability, India Chapter Founder mind Body Wellness Centre, Mumbai
6:15PM-6:30PM	ICF Meets ICHI in the Rehab Cycle : Enhancing Neuro Rehabilitation Through Integrated Classification	**Dr. Isha Akulwar Tajane (PT)** Associate Professor in Kinesiotherapy and Physical Diagnosis, K J Somaiya College Of physiotherapy, Mumbai

6:30PM CULTURAL EVENTS

SCIENTIFIC PROGRAM 11TH APRIL CMET HALL -TECHNOLOGY HALL (HALL B)		
10:15AM-11:30AM INAUGRATION CEREMONY		
Session I "Comprehensive Rehabilitation: Bridging Mental Health, Neuro Recovery, Youth Wellness, and Special Education"		
11;30PM-11:45PM	Pilates for youth :Why A 20- year old can have a 50-Year Old Spine	**Dr. Omair Ahmed khan (PT)** Orthopedic Physiotherapist Founder and President Advance Rehabilitation and Fitness Academy(ARFA) Certified Dry Needling and Manual Therapist. Chief Pilates Instructor Master Diploma in Cupping and Hijama Therapy.
11:45PM-12:00PM	Enhancing Post-Stroke Balance and Postural Stability Through tDCS Fluoxetine, and Dual-Task Training Integration	**Dr. B. Roy (OT)** Associate Professor Amity University Noida
12:00PM-12:15PM	Neuropsychological Rehabilitation in Traumatic Brain Injury	**Dr. Manoj K Bajaj** Associate Professor Clinical Psychology Department of Psychology North Campus ,Delhi University
12:15PM-12:30PM	Role of special education in multi-rehabilitation team	**Ms. Manjusha Singh** Special Educator at NIEPID, RC, Noida
Session II Integrative Approaches in Allied Health Sciences: Rehabilitation, Preventive Care, Innovation, and Emerging Health Challenges."		
12:30PM - 12:45PM	Cognitive Rehabilitation in Geriatric Neurological Conditions	**Dr. Shivani Bhardwaj** PhD, MOT Occupational Therapy Department Jamia Hamdard University
12:45PM-1:00PM	Exercise as a medicine in cancer Rehabilitation	**Dr. Dipti Kadu (PT)** Scientific Assistant MPMMCC, Varanasi
1:00PM-1:15PM	Nutritional Support for Weight Management During GLP-1 RA Therapy.	**Dr. Ankita Gupta** Assistant Professor Discipline of Nutritional Sciences IGNOU New Delhi **Dr. Namrata Singh** Assistant Professor Discipline of Nutritional Sciences IGNOU New Delhi
1:15PM-1:30PM	Intellectual Property Rights (IPR) in Allied Health :Protecting Innovation ,Content ,Branding, Design in Clinical Practice	**Dr. Madhuranjan Vasta** Partner of Akhildev IPR AND Research services) Indian Trademark Attorney and lawyer IPR Facilitator for Startup India IP Expert at BIT Deoghar IIC-8.0 PhD, LL.B,MBA Member of INTA Delhi High Court (Practicing Lawyer)
1:30PM-2:00PM LUNCH		

Session III "Advancing Rehabilitation Sciences: Integrating Public Health, Disability Care, and Emerging Technologies"		
2:00PM-2:15PM	Obesity in Indian Adolescent : Trends and Challenges	**Ms. Pinki Dalal** Assistant Dietician, Pediatrics, AIIMS, New Delhi, M.Sc. Food and Nutrition, (Gold Medalist) UGC Net Qualified, certified Diabetic Educator
2:15PM-2:30PM	From Disease to Dignity: The role of Prosthetic and Orthotic Rehabilitation in Leprosy Care	**Ms. Ashmita Milan** Demonstrator P&O, NIEPMD Chennai
2:30PM-2:45pm	Virtual Reality for Geriatric Rehabilitation	**Dr. Charu Chhabra (PT)** Assistant Professor Department of Physiotherapy Jamia Hamdard
2:45pm-3:00pm	Mental Imagery :Therapeutic Scope and Technological Implications	**Dr. Ruby Aikat (OT)** Assistant Professor Occupational Therapy Amity Institute of Psychology and Allied Sciences, Amity University, Noida
Session IV "Contemporary Rehabilitation Practice: Bridging Neurological Advances, Tissue Healing, and Ergonomic Health"		
3:00pm-3:45pm	Advancements in Neurological Rehabilitation : Physiotherapist perspective	**Dr. Rupam Sarkar (PT)** Assistant Professor & Academic Coordinator DSGP Institute, Dharashiv, Affiliated To MUHS, Maharashtra
3:45PM-4:00PM	Assessment and Recent Advances in Offloading Techniques in Diabetic Ulcer	**Dr. Neha Sharma (PT)** PhD Scholar Rajiv Gandhi University of Health Sciences. Kempegowda Institute Of medical sciences ,Bengaluru
4:15PM-4:30PM	Holistic Approach to Ergonomics and Occupational wellness	**Dr. Sneha Goyadani** Occupational Therapist And Ergonomic Consultant Founder and CEO -ErgHarmony Founder-Feel Good Pain and Rehab Clinic ,Nagpur
4:30PM-4:15PM	How to teach Children with Disabilities for independent	**Dr. Ved Rajput (PT)** Founder & President Ved Foundation (A dedicated Centre For Children with Disabilities)
4:15PM-4:30PM	Redefining Multidisciplinary Transgender Healthcare in India: An Ethical and Evidence- Based Research Framework	**Dr. Badri Vishal (PT)** Assistant Professor Era University Lucknow

5:00-5:30PM PANEL DISCUSSION

"Parkinson's Unplugged : Empowering Independence in Parkinson's , A Multidisciplinary Team Approach to Functional Recovery "

6:00PM CULTURAL EVENTS

SCIENTIFIC PROGRAM 12TH APRIL JL AUDITORIUM		
8:00AM -9:00AM BREAKFAST		
SESSION I "Integrating Rehabilitation, Preventive Fitness, and Elder Care for Healthy Aging"		
9:30AM-9:45AM	Cognitive Reserve Across the Life Span: Shaping Brain Health and Cognitive Resilience	**Ms. Ritika Batra** Psychologist Certified CDR Rater, Certified MoCA Rater
9:45AM-10:00AM	Social -Emotional Learning (SEL) in Special Education: Evidence Based Classroom Practices	**Ms. Anchal Pandey** Special Educator Sarvottam International School Greater Noida
10:00AM-10:15AM	Barriers and facilitators to early mobilization in ICU	**Dr. Maneesha Deshpande (PT)** Principal-Professor VSPM's College of Physiotherapy ,Nagpur
10:15AM-10:30AM	T-Jog :Alternative form of Cardiovascular Fitness	**Dato Dr. B.S Bains** Senior Consultant Physiotherapist
		Bains Physio chain of Physiotherapy Clinics, 9127 Jalan Bandar 4 ,Taman Melawati ,53100 Kuala Lumpur
10:30AM-10:45AM	Increasing Number of Old Age Homes : Indicator of Civilization Fracture	**Dr. Navin Kumar** Professor Department of Psychology Dr Bhim Rao Ambedkar College, University of Delhi
10:45AM-11:00AM "Conservative Management of Spasticity and Deformities using Orthotic Intervention in the Cerebral Palsy" **Key Note Speaker** **Ms. Urmila Naukudkar** **Senior Prosthetist/Deputy Academic In charge** **AIIPMR** **Mumbai, Maharashtra**		
SESSION II "Functional Rehabilitation: Swallowing, Aging, and Assistive Solutions"		
11:00AM-11:15AM	Dysphagia is not a symptom-It's a System failure .Let's hear the science of swallowing sounds	**Ms. Karpuram Govathi Nikhila** Senior Consultant -Dysphagia-Speech Specialist & Researcher in Dysphagia HOD-Dysphagia-speech clinic &Lab. Certified in VST,FEEST,BLS. National &International Awardee-World Record Holder .Editorial Board Member for 9 national &International Journals, India's 1st Dysphagia AI Avtar &APP Innovator. Medanta Medicity Hospital -Gurgaon Haryana
11:15AM-11:30AM	Integrating Ergonomic sand Energy Conservation for Musculoskeletal Health in Older adults	**Dr. Puneet Kumar Dua (PT)** Assistant Chief Physiotherapist Department of Physiotherapy &Rehabilitation Indraprastha Apollo Hospital New Delhi

11:30AM-11:45AM	Importance of Prosthetics and Orthotics in Healthcare Management	**Dr. Ritikesh Pattanaik** Assistant Professor , NIEPMD, Chennai, Tamil Nadu
11:45AM-12:00PM **"Glycemic friendly thali"** **Key Note Speaker** **Dr. Meenakshi Bajaj** **Dietician,** **Tamil Nadu Govt. Multi Super Specialty Hospital, Chennai,** **Member, National Commission for Allied &Health Care Profession, (Govt of India),** **Nutrition Science Professional Council**		
SESSION III "Advancing Rehabilitation Practice: Bridging Developmental Therapies, Systemic Rehabilitation, and Evidence-Based Clinical Care"		
12:00PM-12:15PM	Pretend Play as a Pathway to Emotional Expression and Regulation in Early Childhood	**Dr. Tamanna Saxena** Associate Professor, Amity Institute of Psychology and Allied Sciences, Amity University, Noida
12:15PM-12:30PM	Role of Occupational Therapy in Renal Rehabilitation	**Dr. Sofia Azad (OT)** Principal and Professor Occupational Therapy School and Centre GMC, Nagpur
12:30PM-12:45PM	Physiotherapy Management of Facial Burns :Evidence based Comprehensive Clinical Approach	**Dr. Misha Ahir (PT)** Physiotherapist Burns, Plastic and Reconstructive Surgery AIIMS, New Delhi
Session IV "Enhancing Function & Independence : Ergonomics, Nutrition & Sensorimotor Training"		
12:45PM-1:OOPM	User -Centered Ergonomics in Orthotic Design :A Perspective on Assistive technology	**Praveen Shukla** Faculty (Prosthetics and Orthotics), VMMC and Safdarjung Hospital, New Delhi
1:00PM-1:15PM	Nutrition as a determinant of Functional Ability and Autonomous Living among the Ageing	**Prof. (Dr.) Manisha Sabharwal** Professor Department of Food &Nutrition &Food Technology Lady Irwin College, New Delhi
1:15PM-1:30PM	Proprioceptive Exercises and Training	**Dr. Sumit Asthana (PT)** Head &Professor, Department of Physiotherapy, Faculty of Allied Health Sciences & Research , Era Medical University, Lucknow ,Uttar Pradesh
1:30PM-2:00PM	LUNCH	
2:00PM-2:15PM "Artificial Intelligence in speech and Language Rehabilitation :Transforming clinical practice in the 21st Century" **Key Note Speaker** **Dr. Sanjay Kumar** **Senior Speech Therapist & Audiologist** **Delhi &NCR Region**		

Session V "Neurocognitive and Psychosocial Rehabilitation: Managing Brain Injury, Dementia, and Social Transitions"		
2:15PM-2:30PM	Cosmetic Restoration :Beyond esthetics to psychosocial rehabilitation	**Ms. Smita Nayak** MPO,MBA (Operation Management), MA(Clinical Psychology) Faculty Dept of P&O, PDUNIPPD, New Delhi
2:30PM-2:45PM	Hearing Impairment Across the Lifespan: Impacts and Audiological Interventions for Enhanced Quality of Life	**Dr. Mohammad Shamim Ansari,** M.Sc. (ASR) Ph D Audiology Faculty, Department of Audiology Ali Yavar Jung National Institute of Speech & Hearing Disabilities (Divyangjan) Kishen Chandra Marg, Bandra -West, Mumbai-
2:45PM-3:00PM	Lost in Thought: Mind Wandering and Its Behavior Impact in Patients with Epilepsy	**Dr. Sumitash Jana** Assistant Professor Department of Humanities and Social sciences, IIT, Delhi
3:00PM-3:15PM	Diet in Dementia: Needs and Challenges	**Dr. Shivani Shailaja** Assistant Dietician National Centre for Ageing AIIMS,New Delhi
Session VI "Redefining Healthcare in the Aging Era: Integrating Physiotherapy, Lifestyle Medicine, and AI Driven Multidisciplinary Care"		
3:15PM-3:30PM	From Dependency to Dynamic Living : Physiotherapy Powering Lifestyle Medicine in India's Aging Wave	**Dr. Amarjot Singh Gill (PT)** MPT (Neurology), PGDLM (Lifestyle Medicine), Associate Professor , Physiotherapy , Dayanand Medical College & Hospital (DMC&H) Ludhiana ,Punjab
3:30PM-3:45PM	The Future of Healing: Evidence-Based Multidisciplinary Strategies in Advanced Healthcare	**Prof.(Dr.) Abhijit Dutta** Dean Royal School of Medical and Allied Sciences The Assam Royal Global University Betkuchi, Guwahati Assam
3:45PM-4:00PM	Artificial Intelligence for Precision and Personalized Rehabilitation: A Way Forward in Redefining Multidisciplinary care.	**Dr. Lajwanti Lalwani Adwani (PT)** Associate Professor Department of Cardiovascular and Respiratory Physiotherapy Ravi Nair Physiotherapy College Datta Meghe Institute of Higher Education and Research Sawangi Wardha
4:15PM-4:30PM	Enhancing QOL for Older People :Role of Occupational Therapists in Geriatrics.	**Dr. RupliSen Gupta** Associate Professor Occupational Therapy NILD Kolkata
4:00PM	**Valedictory**	

Physiotherapy Interventions, Including Core Muscle Strengthening, for Stress Urinary Incontinence and Athletic Performance in Female Athletes: A Narrative Review

Tanya Singhal, PhD Scholar, GGSIPU, Delhi

Background: Stress urinary incontinence (SUI) is a common yet underreported condition among female athletes due to increased intra-abdominal pressure during high-impact sports activities. Weakness or poor coordination of the pelvic floor and core musculature may contribute to this condition, which can negatively influence athletic performance including quality of life. Physiotherapeutic interventions, including pelvic floor muscle training and core strengthening exercises, have been proposed as impactful conservative management strategies.

Objective: To review the existing literature on physiotherapy interventions, including Core Muscle Strengthening, for Stress Urinary Incontinence and Athletic Performance in Female Athletes.

Methods: A narrative review of the literature was performed using electronic databases such as PubMed, Google Scholar, Scopus, and Pedro. Relevant studies published between 2011 and 2026 were screened and reviewed using keywords including stress urinary incontinence, female athletes, pelvic floor muscle training, core strengthening exercises, and physiotherapy interventions. Focusing studies on conservative physiotherapy management were included.

Results: The reviewed literature indicates that pelvic floor muscle training combined with core stabilization exercises significantly improves pelvic floor strength, reduces symptoms of the stress urinary incontinence, and enhances functional stability in female athletes. Physiotherapeutic techniques such as biofeedback, neuromuscular training, along with lifestyle modifications also contribute to better pelvic floor coordination and improved athletic performance.

Conclusion: Core muscle strengthening along with targeted physiotherapeutic interventions plays a significant role in the management of stress urinary incontinence in female athletes. Integrating pelvic floor training into routine athletic conditioning programs may help reduce urinary leakage and enhance performance outcomes.

Keywords: Stress urinary incontinence, Female athletes, Core strengthening, Pelvic floor muscle training, Physiotherapy, Athletic performance.

Impact of Fascial Release Techniques on Proprioception and Balance in Neck Pain

Santosh Pandey (Asst Prof), *Raj Kumar Pandey* (Assoc Prof) (Presenting author), Sanskriti University Mathura

Neck pain is a major cause of global disability and is frequently linked to sensorimotor deficits such as impaired joint position sense, reduced head repositioning accuracy, and poor balance. Traditional rehabilitation focuses on muscle re-education and joint mobilization, but growing evidence highlights the role of cervical fascia, which contains mechanoreceptors vital for proprioception and motor control. Restrictions within this fascial system may disrupt neuromuscular coordination, leading to persistent pain and functional limitation. Cervical Fascia Release Techniques (CFRT)—including myofascial release, fascial manipulation, And instrument-assisted mobilization—are proposed to improve fascial mobility and stimulate mechanoreceptors, though strong clinical evidence remains scarce. This randomized controlled trial will investigate the effects of CFRT in nonspecific neck pain. Sixty participants (20–55 years) will be assessed at baseline, post-intervention (4 weeks), and follow-up (6 weeks). Outcomes include joint position sense, balance (force platform/BESS), pain intensity (VAS), and functional disability (NDI). Statistical analysis will compare changes within and between groups and explore correlations between proprioceptive recovery and clinical outcomes. The study addresses research gaps regarding standardized CFRT protocols, high- quality trials, and region-specific data from India. Results are expected to support CFRT as an effective intervention to enhance proprioception, balance, and functional recovery in neck pain, broadening evidence-based physiotherapy practice. This research will provide foundational evidence to integrate fascial release techniques into clinical rehabilitation guidelines for neck pain. It may inspire the development of standardized CFRT protocols, long-term outcome studies, and technology-assisted assessments (e.g., wearable sensors, motion analysis). Furthermore, results could support region-specific physiotherapy practices in India, encourage multidisciplinary research on fascia's role in neuromuscular regulation, and contribute to preventive strategies for chronic neck dysfunction. Ultimately, this work will not only enhance clinical outcomes for patients but also open pathways for innovative rehabilitation models, bridging basic science and applied physiotherapy practice on a global scale.

Keywords: Cervical Fascia Release, Sensorimotor Control, Neck Pain, Proprioception

Efficacy of High-Power Laser Therapy in Supraspinatus Tendinitis: A Pre-Post Test Randomized Study

Monalisha Nayak, MPT scholar, SVNIRTAR, Odisha

Background: Supraspinatus tendinitis, a component of rotator cuff tendinopathy, is a common cause of shoulder pain in individuals with neurological conditions such as stroke and spinal cord injury. Deep transverse friction massage (DTFM) is commonly used to reduce pain and improve movement, while high-power laser therapy shows analgesic and anti-inflammatory effects. However, the combined effectiveness of laser therapy with DTFM in supraspinatus tendinitis has not been thoroughly investigated.

Objective: To evaluate the efficacy of highpower laser in the management of supraspinatus tendinitis in hemiplegic and SCI patients.

Methods : Thirty hemiplegic and SCI patients with clinically diagnosed supraspinatus tendinitis were randomly divided into two groups (n=15 each). Both groups received conventional therapy and DTFM, while the experimental group additionally received high- power laser therapy for 2 weeks. Outcomes (NPRS, tenderness grading, and SPADI pain & disability scores) were assessed pre- and post-intervention using paired and independent t-tests.

Results: Both groups showed significant within-group improvement in all outcome measures ($p < 0.001$). Between-group analysis showed a significant difference only for tenderness change ($p = 0.007$), while NPRS ($p = 0.182$), SPADI pain ($p = 0.208$), and SPADI disability ($p = 0.105$) were not statistically significant.

Conclusion: Both groups showed significant improvement in pain, pressure pain threshold, and SPADI scores after treatment. The DTFM + high-power laser group showed significantly greater improvement in tenderness, while no significant difference was found between groups for pain and disability outcomes. Thus, both treatments were effective, but combined therapy provided better results for tenderness reduction.

Keywords: Supraspinatus tendinitis, High-intensity laser therapy (HILT), Deep transverse friction massage (DTFM), Shoulder pain, Rotator cuff tendinopathy, Neurological rehabilitation

Effect Of Kinesio Taping In Adults With Patello Femoral Pain Syndrome

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Background: Patellofemoral pain syndrome (PFPS), a common condition experienced by individuals and linked to 40% of knee-related conditions. It accounts for roughly 22% of lower limb injuries in both recreational and professional runners. PFPS is often exacerbated by activities such as squatting or climbing stairs that increase the strain on the patellofemoral joint. It is more prevalent in women and those with altered lower limb biomechanics, increased quadriceps angle (Q-angle), and muscular imbalances, thus affecting the quality of life of individuals.

Objective: To find the effect of kinesio taping (KT) on pain, range of motion, balance and function in adults with PFPS.

Methods: Boolean Operators and keywords such as kinesio taping, pain, patellofemoral pain syndrome and balance, were used for searching databases like CINAHL and PubMed, Google scholar, and others. Articles published in English language that compared KT in PFPS in comparison with other interventions and studies reported in last five years were included. Review articles and conference proceedings were excluded.

Results: The application of KT demonstrates promising outcomes, with studies consistently indicating significant improvements in pain reduction and knee function. However, it does not consistently improve balance or overall physical performance. The best results are observed when KT is used in conjunction with regular conventional therapy, where it helps to improve pain relief and daily function more effectively.

Conclusion: It can be concluded that KT is effective in PFPS patients for reducing pain and improving knee function. When used alone, KT has a limited effect. While some studies report improvements in pain-free knee movement and postural control, findings remain inconsistent, especially regarding balance and functional performance. Therefore, KT is more beneficial as an adjunct to conventional therapy rather than a standalone treatment for enhancing pain relief and functional outcomes.

Keywords: Kinesio Taping, patello femoral pain syndrome, Pain, Balance, Function

Biopsychosocial Multidisciplinary Approach in Chronic Neck Pain: Redefining Care in Advanced Health Systems

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Background: Chronic neck pain is a prevalent musculoskeletal condition that significantly impairs function and quality of life. Traditional management often focuses solely on physical symptoms, resulting in suboptimal outcomes and frequent recurrences. Emerging evidence supports a biopsychosocial model, integrating physical, psychological, and social factors, highlighting the need for a coordinated, multidisciplinary, evidence-based approach.

Objective: To explore the role of the biopsychosocial model and evidence-based multidisciplinary strategies in improving outcomes for patients with chronic neck pain.

Methods: A narrative synthesis of current clinical guidelines, randomized controlled trials, and systematic reviews was conducted. Key components of the integrated care pathway include:

1. Physiotherapy – exercise therapy and functional restoration

2. Psychological interventions – cognitive behavioral therapy (CBT) to address maladaptive beliefs and fear-avoidance behavior

3. Lifestyle and ergonomic modifications – workplace and daily activity optimization

4. Digital health tools – telerehabilitation, remote monitoring, and patient engagement Platforms.

Results: Evidence indicates that a biopsychosocial, multidisciplinary approach is more effective than single-modality treatments. Combined interventions improve pain, functional capacity, and quality of life. Integration of digital tools enhances patient engagement, adherence, and continuous monitoring, enabling individualized care.

Conclusion: A biopsychosocial multidisciplinary care model represents an effective and comprehensive framework for managing chronic neck pain. By focusing on functional recovery rather than symptom control alone, this approach redefines care delivery in modern healthcare systems and provides a scalable, patient-centered, evidence-based solution for tertiary care settings.

Keywords: Chronic neck pain, biopsychosocial model, multidisciplinary care, physiotherapy, cognitive behavioral therapy, telerehabilitation, functional recovery

Targeting Central Sensitization: A Systematic Review of Pain Neuroscience Education in Chronic Neck Pain

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Chronic neck pain is often associated with central sensitization, where the nervous system becomes more sensitive and amplifies pain signals. This can lead to changes in how sensory information is processed. Pain neuroscience education (PNE) focuses on helping patients understand pain as a result of nervous system activity rather than only tissue damage. However, its effectiveness in improving pain and sensory changes is still not clearly established.

Objective: This review aimed to examine the effects of PNE, either alone or combined with other treatments, on pain intensity and sensory outcomes related to central sensitization in adults with chronic neck pain.

Methods: The review followed PRISMA 2020 guidelines and was registered in PROSPERO. A systematic search of PubMed, EMBASE, CINAHL, and other databases was conducted up to December 2025. Randomized controlled trials involving PNE for chronic neck pain were included. Risk of bias was assessed using the Cochrane Risk of Bias 2 tool, and methodological quality was evaluated using the PEDro scale. Due to differences across studies, a narrative synthesis was performed.

Result: Eighteen studies were included. Most studies used PNE together with exercise or other rehabilitation approaches, while a smaller number evaluated PNE alone. Overall, PNE was associated with reduced pain intensity. Some studies also reported improvements in sensory measures, such as pressure pain thresholds, especially when PNE was combined with exercise. However, differences in outcome measures and intervention methods made comparisons difficult. The quality of studies varied, with common limitations including lack of blinding and small sample sizes.

Conclusion: PNE appears to be helpful in managing chronic neck pain, particularly when combined with exercise. It may also contribute to improvements in sensory processing related to central sensitization. Further research with standardized methods and longer follow-up is needed to confirm these findings.

Keywords: chronic neck pain, pain neuroscience education, central sensitization, sensory processing, rehabilitation, randomized controlled trials

Inter-Relationship of Severity of Low Back Pain, Foot Postures And Plantar Pressure Among Medium Pace Bowlers

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Background: Cricket place substantial physical and mentally demanding sport. Cricket bowlers, particularly pace and medium pace bowlers, are more prone to injuries. They often complain of low back pain. Cricket bowlers have repetitive motion or poor bowling techniques can exert load on the delivery stride foot, leading to potential foot posture abnormalities and alter plantar pressure distribution which can affect low back pain.

Purpose: The purpose of the study was to find the inter-relationship of severity of low back pain, foot postures and plantar pressure among medium pace bowlers.

Study design: This was a non-experimental study, which was correlational in nature.

Methodology: Based on inclusion and exclusion criteria, 80 male medium pace bowlers of age 18-30 years were taken from different cricket academies and stadiums of Punjab by purposive sampling and informed consent were taken. Height and weight were measured using a stadiometer and weighing scale respectively. BMI was calculated. The Oswestry Disability Index was used to measure the severity of Low Back Pain that is mild, moderate and severe. Foot posture was assessed using Arch Index and plantar pressure distribution were assessed by using OHM 3000. The data was collected, compiled and statistically analysed.

Result: Data was analysed using descriptive statistics including mean and standard deviation. Karl Pearson’s correlation coefficient showed a positive relationship between arch index of the dominant foot and severity of low back pain, while a weaker relationship was observed for the non-dominant foot. Hindfoot pressure demonstrated a positive correlation with pain severity, whereas forefoot pressure showed a negative correlation in both feet. Chi-square analysis revealed a significant association between foot posture of the dominant side and low back pain severity, while the non-dominant side showed no significant association. However plantar pressure variables like maximum pressure, average pressure, peak pressure, centre of pressure, total weight distribution didn't show significant correlation.

Conclusion: It was concluded that foot posture and plantar pressure distribution influence the severity of low back pain in medium pace bowlers, with the dominant foot having a greater impact on lumbar stress, while the non-dominant foot also contributes to load distribution and postural stability.

Keywords: Foot Postures, Low Back Pain, Medium Pace Bowlers, Plantar Pressure

Comparison of pulsed muscle energy technique versus passive stretching of upper trapezius muscle on neck pain and dysfunction in individuals with nonspecific neck pain

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Introduction: Most patients who present with neck pain have nonspecific neck pain, where symptoms have a postural or mechanical basis. It has been stated that in neck pain there is tightness of Upper Trapezius leading to weakness of Middle and Lower Trapezius.

Methodology: Based on Inclusion and Exclusion criteria 60 individuals with Nonspecific Neck Pain of age group 18-30 years of age were selected by convenient sampling and informed consent was taken. The individuals were divided into 2 groups as Group A and Group B of 30 each. Group A and Group B were given Conventional treatment using Hot Pack over the Upper Trapezius muscle. Thereafter Group A was given Pulsed Muscle Energy Technique for Upper Trapezius as 2 contractions per second, as 20 mini contractions with a rest of 5 seconds and hold of 10 seconds for 5 repetitions for each side and Group B was given Passive Stretching of Upper Trapezius with a hold of 10 seconds for 5 repetitions for each side. Pretest and Post test data for both the groups were evaluated for Neck Pain by using Visual Analogue Scale and Neck Dysfunction were evaluated using Neck Disability Index respectively.

Results: Data was meaningfully assorted through calculation of Mean and Standard Deviation. Thereafter Paired ‘t’ test was applied for comparison within and Unpaired ‘t’ test was applied for comparison between the Pulsed Muscle Energy Technique and Passive Stretching group. The level of significance was fixed at $p<0.05$. There was a significant difference within and between the Pulsed Muscle Energy Technique and Passive Stretching group.

Conclusion: The study concluded that Pulsed Muscle Energy Technique was better than Passive Stretching in improving Neck Pain and Dysfunction in individuals with Nonspecific Neck Pain.

Keywords: pulsed muscle energy technique; upper trapezius; passive stretching; nonspecific neck pain

Correlation of deadlift and squat performance with BMI, bilateral anthropometry measurements and handgrip strength in male weightlifters and powerlifters

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Background: One of the most relatable illustrations of strength over human history is the ability to lift a heavy object. The pursuit of this type of strength is what eventually led to the development of the barbell, which allowed individuals to increase the loads they lift progressively without having to obtain additional heavier objects. The competitive effort to perform this style of lifting eventually became the sport of weightlifting. Additional lifts that were not contested at the Olympics were often termed odd lifts. The ability to perform certain odd lifts or strength lifts, squat, bench press, and deadlift gradually evolved into the sport of powerlifting.

Purpose: The aim of the current study to see the Correlation of Deadlift and Squat Performance with BMI, Bilateral Anthropometry Measurements and Handgrip Strength in Male Weightlifters and Powerlifters.

Study design: This was a non-experimental study, which was correlational in nature.

Methodology: Based on inclusion and exclusion criteria, 60 sub elite powerlifters/weightlifters were taken by purposive sampling and informed consent was taken. Height and weight were calculated using a stadiometer and weighing scale respectively, and BMI was calculated by formula. Hand grip strength was checked using hand grip dynamometer and all the anthropometric variables were taken using anthropometric rigid tape, before testing 1 repetition maximum for conventional dead lift [CDL] and back squat [BS].

Result: Descriptive Statistics and Karl Pearson's coefficient of correlation were used for the analysis. Study results demonstrated significant relationship of BMI with deadlift performance [r = 0.546] and squat performance [r = 0.507]. Significant moderate-high relationship of handgrip strength of both hands with deadlift performance was observed with HGS of left and right hand as r = 0.561 and 0.595 respectively. Similarly, HGS of both hands showed significant moderate-high relationship with squat performance [r = 0.604 and 0.617]. Anthropometric measurements i.e. arm length, forearm length, thigh length, lower leg length, trunk length, hip circumference, chest circumference and waist circumference significantly correlated with deadlift and squat performance except, forearm length and thigh length.

Conclusion: The study concluded that arm length, forearm length, thigh length, lower leg length, trunk length, hip circumference, chest circumference and waist --, BMI and handgrip strength were significantly positively correlated with deadlift and squat performance, however no significant correlation was found of forearm length and thigh length with 1RM deadlift and squat performance.

Keywords: Anthropometry, Back Squat, Body Mass Index, Conventional Deadlift, Handgrip

Central Postero-anterior Glide with Static Hamstring Stretching v/s Sustained Natural Apophyseal Glides with Two Leg Rotation in Nonspecific Low Back Pain: A Randomised Controlled Trial

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Introduction: Non-specific low back pain (NSLBP) is a typical condition of musculoskeletal healthcare, leading to several disabilities. A significant contributing factor is hamstring muscles tightness that leads to mechanical alterations in lumbopelvic rhythm which is one of the several causes of NSLBP. The present study aims to determine a better approach for treating NSLBP to reduce disability and improve flexibility and range of motion by comparing the effectiveness of two manual therapy techniques: Central PA Glide with static Hamstring Stretch and SNAG with two leg rotation.

Methodology: A Randomized Controlled Trial has been conducted at Central Referral Hospital at Physiotherapy OPD in Gangtok. All patients with low back pain were referred from other departments and were screened for NSLBP according to eligibility criteria. Random assignment to one of two groups was achieved through consecutive sampling techniques and randomization done by concealed envelope method. The study had a total sample size of 68 patients, of which 33 were assigned to Group A and 35 to Group B. In total four weeks of the intervention period Group-A received Central PA Glide with Static Hamstring Stretch, and Lumbar Stabilization Exercise three times a week. Group-B received Mulligan Sustained Natural Apophyseal Glides with Two Leg Rotation three times a week along with Lumbar Stabilization Exercise. Results are measured using the Active Knee Extension for Hamstring muscle Flexibility, the Schober Test (Modified) for Lumbar Range of Motion, and the Oswestry Disability Index for Disability assessment. Post-intervention evaluation is conducted from the first to fourth weeks of treatment. ODI (for Disability) is followed up by telecommunication after two months.

Result: Mulligan SNAG with Two Leg Rotation and Lumbar Stabilization exercise and Maitland Central PA glide with static hamstring stretch with Lumbar stabilization exercise have shown significant improvements in their respective groups. In between group analysis Mulligan SNAG with Two Leg Rotation with Lumbar Stabilization exercises revealed a statistically significant change in Disability ($P<0.001$), Flexibility ($P<0.001$), and ROM for Flexion ($P<0.001$) and Extension ($P<0.001$) in comparison to Maitland Central PA glide with static hamstring stretch with lumbar stabilization exercises group. Follow-up for ODI after 2 months showed statically significant differences between the group analyses.

Conclusion: There is a significant difference in the improvement of outcomes related to NSLBP when Mulligan SNAGs and two-leg rotation with lumbar stabilization exercises has been applied as a treatment approach.

Key Words: Non-Specific Low Back Pain, Central Postero Anterior Glide, Sustained Natural Apophyseal Glides, Two Leg Rotation, Lumbar Stabilization Exercise, Hamstring Stretch

Association of handgrip strength, pinch grip strength, shoulder stability, anthropometric measurement with upper extremity power in cricket fast and spin bowlers

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Background: Cricket is a physically demanding sport comprised of several specialism requiring different skills and type of fitness. Cricket is the game of endurance as well as strength. For batting, throwing ball during fielding and bowling, forearm strength is essential. Cricket as sport requires excellent eye to hand coordination, upper extremity power, handgrip strength and the coordinate movements of the hips, shoulders, arms and wrists.

Purpose: The current study aims to see the association of handgrip strength, pinch grip strength, shoulder stability, anthropometric measurements with upper extremity power in fast and spin cricket bowlers.

Study Design: The study was a non-experimental study, which is correlation in nature.

Methodology: Based on inclusion and exclusion criteria, 100 fast and spin male bowlers of the age group ranging between 18-30 years were taken by purposive sampling and informed consent was taken. Height and weight were measured using a stadiometer and weighing scale respectively. Handgrip strength of dominant hand was checked using handgrip dynamometer. Pinch grip strength of two types i.e., chuck pinch grip and lateral pinch grip of dominant hand were checked using pinch grip dynamometer respectively. All the anthropometric variables of dominant side i.e. arm length, forearm length, hand length, hand width were measured using anthropometric rigid tape. Shoulder stability of both the upper limbs was checked by closed kinetic chain upper extremity stability test. Unilateral seated shot-put test was used to assess the power of dominant upper limb of fast and spin bowlers.

Result: Data was analyzed using Pearson's correlation coefficient. The results indicated significant correlation of upper extremity power with handgrip strength, pinch grip strength, lateral pinch and anthropometric variables, such as hand length, arm length, forearm length which was 0.367, 0.466, 0.483, 0.368, 0.355 and 0.228 respectively. However, non-significant relationship was found between upper extremity power and hand width as 0.135.

Conclusion: The study found strong links between upper extremity power and factors like grip strength, shoulder stability, and dominant-side arm measurements in fast and spin bowlers. Hand width showed no significant correlation. Enhancing these physical traits may boost performance in bowling, throwing, and batting.

Keywords: Anthropometry, Fast Bowlers, Handgrip Strength, Power Shoulder Stability, Spin Bowlers

Modulation of Cardiac Autonomic Control by High-Intensity Interval Training in Stroke Survivors

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Background: Stroke is leading cause of long-term disability, frequently leaving survivors with significant autonomic nervous system dysfunction, associated with persistent impairments autonomic control, characterized by reduced parasympathetic activity, sympathetic overactivation, poor of blood pressure regulation, and low variability of heart rate. These persistent disturbances significantly increase the risk of subsequent cardiac events and slow functional recovery. High-intensity interval exercise (HIIE) has emerged as an effective and emerging rehabilitation tool due to its ability to induce positive changes in the cardiovascular and nervous systems.

Objective: This literature review aims to examine current evidence on the effects of HIIE on cardiac automatic control in stroke survivors.

Methodology: For our analytical method, we used 24 recently published peer-reviewed articles from the past five years, containing randomized controlled trials, clinical trials, crossover studies, from databases such as Scopus, PubMed, PEDro. The mechanistic investigations evaluating HIIT interventions in adults who have survived a stroke, without overlooking studies reporting outcomes related to cardiovascular diseases.

Results: Evidence suggests that HIIE consistently and significantly improves overall cardiovascular fitness and maximum oxygen consumption (VO_2 peak). By acting on the autonomic nervous system, it causes an increase in heart rate variability through parasympathetic predominance, a reduction in sympathetic over-activity, and faster heart rate recovery, thus, it improves blood flow and cerebral oxygenation.

Conclusion: Clinical implications for neuro-rehabilitation and secondary stroke prevention are examined, with an emphasis on the need for individualized exercise prescription and careful cardiovascular monitoring. In general, this review highlights the potential of HIIE as an effective intervention to modulate cardiac autonomic control after stroke, while stressing the need to conduct further high-quality randomized controlled trials to establish long-term efficacy and safety.

Musculoskeletal Responses to Occlusion Therapies in Individuals with Cerebral Palsy: A Scoping Review of current evidence

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Background: Occlusion therapies, such as Blood Flow Restriction Training (BFRT) and Remote Ischaemic Conditioning (RIC), are emerging mechanism driven rehabilitation techniques that promote neuromuscular and systemic adaptations at low loads. Despite increasing clinical interest, their use in cerebral palsy (CP) remains poorly understood. Existing evidence is limited, fragmented, and lacks a cohesive synthesis, particularly regarding motor outcomes.

Objective: To methodically map and critically synthesise the evidence that is currently available on occlusion therapies (RIC and BFRT) in individuals with CP, with an emphasis on intervention parameters, musculoskeletal outcomes, and research gaps.

Methodology: A scoping review was conducted in accordance with PRISMA-ScR guidelines. Electronic databases (PubMed, Scopus, Web of Science, and ScienceDirect) were systematically searched. Studies investigating BFRT and RIC in individuals with CP were included following structured screening and eligibility assessment. Data were extracted on intervention characteristics and outcome measures. Methodological quality was assessed using the Cochrane RoB 2.0 tool.

Results: Five studies (four randomised controlled trials and one case series) with total sample of 113 individuals were included following screening and eligibility evaluation. Information on outcome measures and intervention protocols were extracted. Most studies demonstrated “some concerns” in risk of bias, particularly in randomization and selective reporting. Strength outcomes were inconsistently reported; however, BFRT combined with exercise was associated with increased lower limb and trunk muscle thickness ($p<0.05$), with limited evidence of functional improvement. RIC was evaluated in a single study for safety and feasibility, demonstrating good adherence and tolerability without notable adverse events, but lacking motor outcome assessment.

Conclusion: BFRT demonstrates promising musculoskeletal adaptations in CP, whereas evidence for RIC remains limited to safety and feasibility. High-quality studies are required to establish clinical effectiveness and standardize protocols.

Keywords: Cerebral palsy, Occlusion therapy, Blood flow restriction training, Remote ischemic conditioning, Musculoskeletal adaptations, Muscle thickness, Low-load training

Effects of High-Intensity Interval Training on Cardiovascular Autonomic Function, Functional Capacity, Body composition, and Quality of Life in Stroke Survivors: Protocol for a Randomized Controlled Trial

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Background: Stroke remains a leading cause of long-term disability worldwide and is often associated with impaired cardiovascular regulation, reduced functional capacity, unfavorable body composition, and diminished quality of life. Exercise-based rehabilitation plays a critical role in improving recovery after stroke. Recent evidence suggests that high-intensity interval training (HIIT) may produce superior cardiovascular and functional benefits compared with conventional moderate-intensity training in neurological populations.

Purpose: This study aims to investigate the effects of a structured HIIT program on resting heart rate, heart rate recovery, functional capacity, body composition, and health-related quality of life in individuals with chronic stroke.

Method: This study protocol describes a randomized controlled trial involving adults aged ≥18 years with chronic stroke. Participants will be randomly allocated into a HIIT group or a control group. The intervention will consist of supervised treadmill-based HIIT sessions conducted three times per week for four weeks, incorporating alternating bouts of high-intensity exercise and active recovery periods. Primary and secondary outcomes will include resting heart rate, heart rate recovery, functional capacity assessed using the Six-Minute Walk Test (6MWT), waist-to-hip ratio for body composition, and quality of life measured using the SF-36 questionnaire. Assessments will be conducted at baseline and post-intervention. Appropriate statistical analyses will be performed to compare within- and between-group changes.

Conclusion: The study is expected to provide evidence on the effectiveness of HIIT in improving cardiovascular autonomic function, functional capacity, body composition, and quality of life in stroke survivors, supporting its integration into stroke rehabilitation programs.

Keywords: Post-stroke recovery, Stroke Rehabilitation, Cardiorespiratory fitness, Aerobic training, Physical rehabilitation

Development, validation and effectiveness of sleep apnea management protocol and lifestyle enhancement (sample) in middle aged adults with sleep apnea

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Introduction: Sleep Apnea Syndrome (SAS) refers to cyclic interruptions in respiratory rhythm (apneas/hypopneas), manifesting as upper airway obstruction (Obstructive SA) or cessation of respiratory motor signals from brainstem (Central SA). SAS presents as stertorous snoring, nocturnal dyspnea, increased day time sleepiness and progressive neurocognitive deficits. While Continuous Positive Airway Pressure (CPAP) remains gold standard, poor adherence and side-effects necessitates innovative alternatives. The Sleep Apnea Management Protocol and Lifestyle Enhancement (SAMPLE) is a novel, multimodal physiotherapeutic intervention designed to offer a non-invasive alternative to CPAP. Phase I - Peripheral neuromuscular activation, utilizing oropharyngeal muscle strengthening exercises along with VitalStim stimulation of hypoglossal nerve to enhance upper airway patency, Relaxation via CranioSacral Therapy, breathing exercises and playing wind instruments. Phase II - Central neuromodulation through Transcranial Direct Current Stimulation to optimize cortical excitability and respiratory drive, paired with progressive aerobic conditioning to improve SpO2 and functional capacity. Lifestyle Enhancement- weight management and positional therapy

Method: Phase I- Delphi Study, SAMPLE protocol was formulated via comprehensive literature review. 10 members of Expert panel achieved consensus on protocol's Likert scale validation following institutional ethical approval. Phase II- Pilot study where 48 individuals were screened via STOP-BANG questionnaire. Ultimately, 14 eligible participants (aged 30–60) exhibiting chronic snoring, increased Day time sleepiness and fatigue underwent baseline polysomnography (Obstructive-Apnea-Index, Central-Apnea-Index, Apnea-Hypopnea-Index and Oxygen-Desaturation-Index), Berlin Questionnaire, and Epworth Sleepiness Scale. Subjects were randomized into two groups (n=7 each): Experimental SAMPLE Protocol group (A) & Control Oropharyngeal exercise group (B), with final follow-up at Day 30.

Results: The results showed significant improvement in polysomnography (OAI, CAI,AHI, ODI), BQ and ESS for Group A, with p-value <0.05 for all variables. Whereas, Group B had significant results for Polysomnography (OAI & ODI) and BQ. Thereby, elucidating that a multi-pronged approach is required to alleviate symptoms of SAS.

Conclusion: The study concludes that SAMPLE protocol is valid and efficacious treatment option to improve quality of sleep and life of middle-aged individuals with SA.

Keywords: Sleep Apnea Syndrome, Continuous Positive Airway Pressure (CPAP), CranioSacralTherapy, tDCS [Transcranial Direct Current Stimulation], Polysomnography

Investigating Age-Related Differences in Working Memory Using fNIRS: A Comparative Study of Young and Middle-Aged Adults

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Background: The effects of ageing on working memory have been extensively reported in the neuroimaging literature but less is known regarding the neural correlates of working memory in middle ages, a link between young and older adults.

Aim: The aim of the present study was to investigate age-related behavioural changes in working memory and associated prefrontal cortex activation in middle-aged adults and young adults using Functional Near-Infrared Spectroscopy (fNIRS).

Methodology: Fifty-six adults, 28 young adults (N = 24.8 ±2.1 years) and 28 middle-aged (N = 46.5 ± 4.1 years) adults performed the DMS and SWM tests on CANTAB. A fNIRS headband measured changes in Oxy-Hb and Deoxy-Hb concentrations in the prefrontal cortex.

Results: The behavioural results indicated middle-aged adults displayed significantly higher error rates in the SWM task and slower processing speed in the DMS task in comparison to young adults. There was a significant difference in prefrontal cortex hemodynamic activity between young and middle-aged adults. Left regional activation was observed during the DMS task, in both age groups with more cortical recruitment in young adults. whereas, in the SWM task, predominantly the right region was activated in young adults however under recruitment was seen in middle-aged adults.

Conclusion: This study concludes that working memory begins to decline in the middle ages. Young adults can meet the working memory task demands by keeping the prefrontal cortex recruited over time, however, in middle-aged adults under recruitment is observed as task demands increase.

Keywords: Ageing, fNIRS, working memory, Middle aged adults, Neuropsychological Tests

Case Study: Functional Recovery Through Structured Physical Therapy in Guillain-Barré Syndrome

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Background: Guillain-Barré syndrome (GBS) is an acute inflammatory demyelinating polyradiculoneuropathy characterized by rapid-onset muscle weakness, sensory disturbances, and diminished reflexes. Although medical management stabilizes the acute phase, functional recovery largely depends on comprehensive rehabilitation. This case study highlights the role of structured physical therapy in restoring mobility and independence in a patient with GBS.

Case Description: A 11-year-old female presented with progressive ascending weakness following a viral illness and required hospitalization for one weeks (8 th January to 14 january 2026). After medical stabilization, she demonstrated significant upper and lower-limb weakness, impaired balance, reduced endurance, and dependence in activities of daily living.

Intervention: A 8-week structured physical therapy program was implemented, including gradual mobilization, range-of-motion exercises, progressive resistance training, gait re-education, balance training, and respiratory exercises. Exercise intensity was carefully monitored to avoid overwork weakness. Functional electrical stimulation was applied to facilitate muscle activation in severely weakened muscle groups. Virtual reality -based exercise training for trunk control and lower extremity training was also given. Outcome measures included the Functional Independence Measure (FIM), Manual Muscle Testing (MMT), 6 MWT.

Result: The patient demonstrated significant improvements in muscle strength 4/5 in upper and lower limbs muscle groups), increased walking distance (from 40 meters to 320 meters), and improved independence in daily activities.

Conclusion: This case study emphasizes that individualized, progressive, and closely monitored physical therapy plays a critical role in optimizing functional recovery in GBS. Early rehabilitation and structured progression can significantly enhance strength, mobility, and quality of life while minimizing complications.

Keywords: Guillain-Barré syndrome; neurorehabilitation; functional recovery; gait training; muscle strengthening

Impact of shoulder pain on motor function and quality of life after stroke

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Background: Post-stroke shoulder pain (PSSP) is a common and disabling problem affecting upper limb motor recovery and quality of life. It leads to poor functional performance, reduced adherence to rehabilitation, and increases psychological burden. According to the literature available, PSSP significantly contributes to poorer Quality of life (QoL) and functional outcomes, irrespective of this relationship between shoulder pain, motor-function and QoL is still not completely understood.

Objective: To explore the influence of shoulder pain on upper limb motor-recovery, and QoL after stroke.

Methods: A comprehensive search was conducted from 2015 to 2025 using databases including Google Scholar, PubMed, and Scopus. Studies were included assessing shoulder pain, motor-functions and QoL in stroke survivors.

Results: Literature shows, PSSP is strongly associated with reduced functional outcomes and QoL, making it difficult to use upper limb. Pain can negatively impact motor performance, proprioception, participation in rehabilitation, ultimately delaying recovery. However, most studies are cross-sectional, making it harder to determine whether shoulder pain leads to motor impairment. Pain is often assessed with simple scales, whereas QoL assessment often lacks sensitivity to stroke-specific factors. The role of other factors like psychological well-being, neuroplastic changes and adherence to participation is also not well understood.

Conclusion: Although PSSP leads to poorer QoL and motor function, there relationship is still unclear. Future studies with longitudinal, mixed-method approach and more patient-centered tools are needed. Addressing these gaps can help develop targeted rehabilitation strategies to improve pain, motor recovery and QoL simultaneously.

Keywords: Stroke. Shoulder Pain, Motor Function, Quality of Life

Comparative Effect Of Gamified Virtual Reality Training And Task-Oriented Physiotherapy On Hand Function In Stroke Survivors: A Randomized Controlled Trial

Jimit Joshi (PhD Scholar, Madhav University), Vaibhav C Dave (Assoc Prof, Madhav University)

Stroke remains a leading cause of long-term disability worldwide, with hand motor impairment significantly affecting functional independence and quality of life. Conventional rehabilitation primarily relies on repetitive task-oriented physiotherapy; however, limited engagement and motivation may restrict optimal recovery. Emerging technologies such as gamified virtual reality (VR) offer interactive and immersive environments that may enhance motor learning, neuroplasticity, and patient adherence.

This randomized controlled trial aimed to compare the effectiveness of gamified VR training and task-oriented physiotherapy on hand function in stroke survivors. A total of 60 participants with upper limb impairment following first-time stroke were randomly allocated into two groups: Group A received gamified VR training, and Group B underwent task-oriented physiotherapy. Both groups received intervention for 30–45 minutes per session, five days per week, over 6–8 weeks. Outcome measures included the Fugl-Meyer Assessment for Upper Extremity (FMA-UE), Action Research Arm Test (ARAT), Box and Block Test (BBT), and grip strength.

Both groups demonstrated statistically significant improvements ($p < 0.05$) in all outcome measures post-intervention. However, Group A showed significantly greater improvement compared to Group B across all parameters. Post-treatment scores indicated superior gains in motor function, dexterity, and strength in the VR group, highlighting enhanced engagement, repetitive practice, and multisensory feedback as key contributing factors.

These findings suggest that gamified VR training is more effective than conventional task-oriented physiotherapy in improving hand function after stroke. Incorporating VR-based rehabilitation may offer a promising, evidence-based approach to enhance recovery outcomes in stroke survivors.

The Impact of Inspiratory Muscle Training on Musicians: A Comprehensive Review

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Background: Inspiratory muscle training (IMT) has demonstrated benefits in diverse populations, particularly in improving respiratory muscle strength, endurance, and overall pulmonary function. For musicians especially wind and brass instrumentalists and singers optimal respiratory control is central to performance, yet research on IMT in this group remains limited.

Aim: This review synthesizes the existing literature on the role of IMT in enhancing respiratory function and performance outcomes in musicians.

Methodology: We conducted searches across multiple electronic databases like PubMed, Scopus, Web of Science, and the Cochrane Library using Mesh Terms IMT and Musicians. The review considered outcomes including inspiratory muscle strength, respiratory endurance, breath control, tone stability, postural support, and perceived performance ease.

Results: Evidence indicates that IMT significantly increases inspiratory muscle strength and endurance. In musicians, these gains have been linked to improved breath control, sustained note production, tone quality, and reductions in performance-related fatigue. Findings from broader non-musician populations support IMT's efficacy in enhancing lung function and postural stability; however, studies directly involving musicians are few, often limited by small sample sizes and methodological heterogeneity.

Conclusion: IMT shows promise as a performance-enhancing and health-promoting strategy for musicians, yet the evidence base is preliminary. Larger, rigorously designed, musician-specific studies are needed to establish the effectiveness and practical applications of IMT in musical training and performance.

Keywords: Inspiratory Muscle Training, Musicians, Lung Functions, Strength, Endurance

Effectiveness of Virtual Reality–Based Cardiac Rehabilitation on Functional Capacity, Quality of Life, and Adherence: A Randomized Controlled Trial

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Background: Cardiac rehabilitation (CR) improves outcomes in cardiovascular disease; however, adherence remains suboptimal. Virtual reality (VR)-based CR offers an engaging alternative that may enhance participation and clinical outcomes.

Objective: To evaluate the effectiveness of VR-based CR on functional capacity, quality of life (QoL), and adherence compared to conventional CR.

Methods: A single-blinded, parallel-group randomized controlled trial was conducted among 80 patients with stable cardiovascular disease. Participants were randomized into VR-based CR (n=40) and conventional CR (n=40) groups for 8 weeks. Functional capacity was assessed using the 6-Minute Walk Test (6MWT), QoL using the SF-36 questionnaire, and adherence through session attendance rate. Between-group comparisons were analyzed using independent t-tests and repeated measures ANOVA.

Results: The VR group showed significantly greater improvement in 6MWT distance (mean difference: 52.4 m, $p<0.001$) and QoL domains ($p<0.01$) compared to control. Adherence rates were significantly higher in the VR group (92.5% vs 78.3%, $p=0.002$).

Conclusion: VR-based CR significantly improves functional capacity, QoL, and adherence compared to conventional CR, suggesting its potential as an effective adjunct in cardiac rehabilitation programs.

Keywords: Virtual Reality, Cardiac Rehabilitation, Quality of Life, Functional Capacity, Adherence, Randomized Controlled Trial

Effects of Core stability exercises on Pulmonary function, Chest expansion and Quality of life on Haemodialysis patient- A Randomized control trial

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Introduction: Haemodialysis patients frequently experience progressive physical deconditioning, reduced pulmonary function, and impaired chest expansion due to fluid overload, uremic myopathy, and prolonged sedentary behavior. These complications significantly diminish health-related quality of life (QoL). Core stability exercise training has shown promise in improving respiratory mechanics and functional capacity, yet its role in hemodialysis populations remains underexplored.

Aims: This study aimed to evaluate the effects of core stability exercise training program on peak expiratory flow rate (PEFR), chest expansion, and kidney disease-related quality of life in patients undergoing maintenance hemodialysis.

Methodology: A randomized controlled trial was conducted with 22 hemodialysis patients randomly allocated into two equal groups (n=11 each). Group A received core stability exercise training on alternate days over 4 weeks (approximately 12 sessions), while Group B received conventional physiotherapy on the same schedule. Outcomes were assessed pre- and post-intervention using PEFR for pulmonary function, chest expansion measurements at axillary and xiphoid levels, and the Kidney Disease Quality of Life (KDQOL) questionnaire.

Result: Both groups demonstrated post-intervention improvements; however, Group A showed statistically significant gains in PEFR, chest expansion, and KDQOL scores compared to Group B ($p < 0.05$), reflecting the superior efficacy of core stability training.

Conclusion: A core stability exercise program effectively improves pulmonary function, chest expansion, and quality of life in hemodialysis patients and warrants inclusion in structured renal rehabilitation protocols.

Keywords: Core stability exercises, PEFR, Chest Expansion, Hemodialysis

Impact of incentive spirometry with and without quadriceps muscle strengthening on exercise capacity and dyspnea in chronic obstructive pulmonary disease patients

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Background: Incentive spirometry improves exercise capacity and reduce dyspnea in patients of chronic obstructive pulmonary disease (COPD) by improving lung function. Adding quadriceps muscle strengthening to this regime may further enhance these benefits by addressing the leg muscle weakness often experienced by COPD patients.

Purpose: The purpose of the study was to determine the Impact of Incentive Spirometry with and without Quadriceps Muscle Strengthening on Exercise Capacity and Dyspnea in COPD Patients.

Study design: The study was experimental which was comparative in nature.

Methodology: Based on the inclusion and exclusion criteria, 60 male and female patients with COPD between the age group of 45- 60 years were assessed and selected by purposive sampling and informed consent was taken. These patients were randomly divided into two groups of 30 each. Group A (Experimental Group 1) received Incentive Spirometry along with Quadriceps muscle strengthening. Group B (Control group) was given Incentive Spirometry. Each group was given of total 15 sessions as 3 sessions per week for 5 weeks respectively. Pre-test scores and Post-test scores for 2 groups were evaluated by 6-Minute Walk Test and Modified Borg Scale for Exercise Capacity and Dyspnea. The data was collected, compiled and statistically analyzed.

Result: Data was analysed using descriptive statistics , paired and unpaired t-test. A significant difference was observed in all outcome variables which are muscle strength, dyspnea, and exercise capacity with Group A showing better outcomes than Group B.

Conclusion: The study concluded that incentive spirometry combined with quadriceps muscle strengthening is more effective than incentive spirometry alone in improving exercise capacity and reducing dyspnea in patients with COPD.

Keywords: Chronic Obstructive Pulmonary Disease, Dyspnea, Exercise Capacity

Correlation Between Pulmonary Function Test, Systemic Inflammatory Markers, and Functional Capacity in Patients with Chronic Obstructive Pulmonary Disease

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Background: Chronic Obstructive Pulmonary Disease (COPD) is characterized by persistent airflow limitation and systemic inflammation, which significantly affect patients' functional capacity and quality of life. Pulmonary function tests (PFTs) are widely used to assess disease severity, while systemic inflammatory markers such as neutrophil–lymphocyte ratio (NLR) and platelet–lymphocyte ratio (PLR) have emerged as potential indicators of systemic inflammation in COPD. However, the relationship between pulmonary function, systemic inflammation, and functional capacity remains an area of active investigation.
Objective: To evaluate the correlation between pulmonary function parameters, systemic inflammatory markers, and functional capacity in patients with COPD.

Methods: A cross-sectional analysis was conducted on clinically stable COPD patients. Pulmonary function parameters including forced expiratory volume in one second (FEV_1) and forced vital capacity (FVC) were assessed using spirometry. Systemic inflammatory markers such as NLR and PLR were obtained from routine hematological investigations. Functional capacity was evaluated using the Six-Minute Walk Test (6MWT). Correlation analysis was performed to determine the relationship between pulmonary function indices, inflammatory markers, and 6-minute walk distance (6MWD).

Results: Pulmonary function parameters showed a significant positive correlation with functional capacity measured by 6MWD. Conversely, systemic inflammatory markers demonstrated a negative correlation with both pulmonary function indices and functional capacity. Higher levels of NLR and PLR were associated with reduced exercise tolerance and poorer lung function.

Conclusion: Pulmonary function, systemic inflammatory markers, and functional capacity are significantly interrelated in COPD patients. Systemic inflammatory markers such as NLR and PLR may serve as accessible adjunct indicators of disease severity and functional impairment, complementing conventional pulmonary function assessment.
Keywords: COPD, Pulmonary Function Test, NLR, PLR, Six-Minute Walk Test, Functional Capacity, Systemic Inflammation

Impact Of Chest Expansion Resistance Exercises On Peak Expiratory Flow Rate And 6-Minute Walk Test During Aerobic Training In Geriatric Individuals

Amrit Kaur Chhabra, Dr. Deepinder Kaur, Arshnoor Sekhon (PRESENTING)

Background: Aging process alters elderly individuals' capability to independently perform their activities of daily life which leads to decreased pulmonary function and functional capacity of an individual. Peak expiratory flow rate (PEFR) is a convenient tool to measure lung function and 6-minute walk test (6MWT) is a submaximal test to measure functional exercise capacity. Proprioceptive neuromuscular facilitation based breathing exercises like chest expansion resistance exercises and aerobic training are effective components used in the rehabilitation of geriatric population for improving lung functions and functional status.

Purpose: The main motive of the study is to investigate out the Impact of Chest Expansion Resistance Exercises on PEFR and 6MWT During Aerobic Training in Geriatric Individuals.

Study Design: This study was an experimental and comparative in nature.
Methodology: According to criteria set for inclusion and exclusion, sixty geriatric individuals, both males and females, of age 65-75 years were taken by purposive sampling and informed consent was taken. Subjects were randomly divided into two groups as Group A having 30 subjects and Group B having 30 subjects. Group A underwent Chest Expansion Resistance Exercises along with Aerobic training in the form of brisk walking and Group B was guided with Aerobic Training only in the form of brisk walking. Protocol was provided for 3 times a week for 6 weeks, each session lasting for 50 minutes. Pretest and Post test data was collected for PEFR and 6MWT. Data was compiled and analyzed statistically.

Result: By calculating mean and standard deviation, data was assorted properly. For comparison within the groups, paired 't' test was applied and Unpaired 't' test was applied for comparison between both the groups. The level of significance was fixed at $p<0.05$. Both the groups i.e. Chest Expansion Resistance Exercises along with Aerobic Training and Aerobic Training alone were equally efficient in enhancing PEFR and 6MWT in Geriatric Individuals, as significant difference came out within the groups. But Chest Expansion Resistance Exercises are better in conjunction with Aerobic Training could not be made out, as difference between the groups at the end of the study came out to be non-significant.

Conclusion: The study concluded that Chest Expansion Resistance Exercises along with Aerobic Training and Aerobic Training alone without Chest Expansion Resistance Exercises both has an influence on PEFR and 6-Minute Walk Test in Geriatric Individuals.

Keywords: Aerobic Training, Chest Expansion Resistance Exercises, Geriatric Individuals, Peak Expiratory Flow Rate, and 6-Minute Walk Test

Knowledge, Attitude and Awareness of Undergraduate Physiotherapy Students towards Application of Extended Reality in Physiotherapy

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Background: Extended Reality (XR) is an umbrella term encompassing Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR), all of which blend real and virtual environments to provide immersive and interactive experiences. XR has demonstrated valuable applications in physiotherapy and rehabilitation, enhancing patient motivation, motor learning, and clinical education. However, the integration of XR into physiotherapy curricula and student training remains limited, particularly in India. This study aimed to assess the knowledge, attitude, and awareness of undergraduate physiotherapy students toward XR application in physiotherapy.

Method: An observational, questionnaire-based, cross-sectional study was conducted among undergraduate physiotherapy students from tertiary institutions in Nagpur. A validated self-constructed questionnaire assessed three domains: knowledge, attitude, and awareness regarding XR application in physiotherapy practice and education. Data were collected from 300 students using a convenient sampling technique. Statistical analysis was performed using STATA version 18 (2023). Descriptive statistics were expressed as means, standard deviations, and proportions, while inferential analysis employed chi-square and non-parametric tests. $p < 0.05$ was considered statistically significant.

Results: Among the 300 participants, 69.7% were familiar with the term Virtual Reality, while 47.7% recognized Mixed Reality. Awareness of XR applications specific to physiotherapy was limited, with only about one-third of students demonstrating accurate understanding of XR-based applications in neurological, musculoskeletal, and geriatric rehabilitation. Nevertheless, 72.3% expressed interest in learning about XR technologies, and 62% supported their use in physiotherapy clinical practice. Additionally, 60.7% favoured inclusion of XR in the curriculum. Only 27.7% had attended any workshop or seminar related to XR. These findings highlight significant knowledge gaps but a generally positive and receptive attitude toward XR integration in physiotherapy education.

Conclusion: Undergraduate physiotherapy students in Nagpur exhibit limited knowledge and awareness of XR applications but show a highly positive attitude and eagerness to learn. Integrating XR-oriented modules and workshops into the physiotherapy curriculum could bridge current educational gaps and prepare future physiotherapists for technologically driven healthcare environments.

Keywords: Extended Reality, Physiotherapy, Augmented Reality, Virtual Reality, Mixed Reality, XR

Role of Eccentric Training in the Management of Sarcopenic Obesity in Older Adults: A Narrative Review

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Background: Sarcopenic obesity, an emerging challenge in geriatric population, is characterized by the coexistence of reduced skeletal muscle mass and increased adipose tissue. Chronic inflammation, metabolic dysfunction, and oxidative stress due to poor lifestyle habits and psychological distress contribute to its progression. Many pharmacological therapies such as GLP-1 receptor agonists promote weight loss, but they may also accelerate the lean body mass loss in older adults. Compliance to conventional exercise interventions is often limited in elderly due to anabolic resistance, impaired cardiorespiratory capacity, and musculoskeletal limitations.

Objective: This review focuses on the effect of eccentric (ECC) exercise as a targeted intervention for improving mechanical efficiency, metabolism and muscle-organ interaction in elderly with sarcopenic obesity.

Methods: A literature search was conducted using databases such as PubMed, Google scholar, and Scopus to identify studies examining eccentric exercise, sarcopenic obesity, inflammatory pathways, myokine regulation, and mechanical loading strategies in older adults. Relevant articles published between 2011 and 2026 were selected and reviewed.

Results: Current evidence suggests that eccentric exercise generates high mechanical tension while maintaining low metabolic demand. In comparison with concentric exercise, ECC protocols require lower oxygen consumption (VO_2) and cardiovascular effort, making them suitable for frail older adults. These exercises help in improvement of muscle strength by facilitating sarcomere addition, enhancing mitochondrial function, and reducing visceral fat by increasing the release of anti-inflammatory myokines.

Conclusion: ECC-based training helps in improvement of muscle strength along, reduction in visceral fat, preservation of lean body mass, enhancement of metabolic health, and improvement in overall functional independence among older adults. Thus, eccentric exercise can prove to be an effective non-pharmacological strategy for managing sarcopenic obesity.

Key words: eccentric exercise, sarcopenic obesity, myokines, visceral fat, older adults

Association between Glycemic Control and Cognitive Function in Individuals with Type 2 Diabetes Mellitus

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Background- Accelerated Cognitive decline in old age has been associated with poor glycemic control. This occurs due to effect of advance glycation end products (AGEs) which leads to oxidative stress of the neural tissue that contribute to neural tissue damage thus impairing the cognitive function. Delayed matching of sample (DMS) is one such function which involves visual working memory, short term memory, visuospatial function, as well as inhibition.

Aim - To investigate the difference between variables of the DMS task in people with T2DM and age-matched control without T2DM.

Methods - A cross sectional pilot study was conducted on individuals with T2DM and healthy individuals in the age group of 45-65. Demographic details, medical history etc, were collected prior to administering the DMS test using CANTAB (Cambridge Neuropsychological Test Automated Battery). The parameters analyzed were delayed matching of sample total correct (DMSTC), delayed matching of sample total correct all delay (DMSTCAD), delayed matching of sample mean latency all delay (DMSMLAD), delayed matching of sample mean latency simultaneous (DMSMLS), delayed matching of sample mean latency (DMSML), delayed matching of sample mean latency 12 sec delay (DMSML12) and delayed matching of sample probability of error given correct (DMSPEGC). Normality was assessed through Shapiro-Wilk test. As the data was not normally distributed, the Mann-Whitney U test was used to compare individuals with T2DM and age-matched controls.

Results - Results revealed a significant difference in latency, total correct scores, total error scores in individuals with T2DM performing poorly, indicating accelerated cognitive decline.

Conclusion - Individuals with poor glycemic control demonstrated poor cognitive performance as compared to age-matched controls which states that maintaining optimal glycemic control may help preserve the cognitive function in later stages of life.

Digital Health Literacy Among the General Population: An Online Survey

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Background: Digital health literacy is becoming increasingly important as health information and services are widely accessed through online platforms. However, the ability to effectively evaluate and use this information varies among individuals. This study aimed to assess the level of digital health literacy among the general population.

Methodology: A cross-sectional study was conducted using an online survey distributed via Google Forms. A total of 148 participants responded. The questionnaire consisted of demographic details and the eHealth Literacy Scale (eHEALS), which was used to assess participants' ability to search, understand, evaluate, and apply online health information.

Results: Among the participants, 57.4% were males and 42.6% were females, with a mean age of 33.29 ± 13.66 years. The findings revealed that most participants were comfortable using digital devices and accessing online health resources. However, significant gaps were observed in their ability to critically evaluate the reliability and accuracy of health information. Many respondents relied on search engines and social media for health-related queries, with varying levels of confidence in identifying credible sources.

Conclusion: The study indicates that although digital access is high, critical digital health literacy remains limited among the general population. These findings highlight the need for targeted educational interventions to improve evaluation skills, reduce the impact of misinformation, and promote informed health decision-making.

Keywords: Digital health literacy, eHEALS, online health information, awareness, public health, internet use

Urinary Incontinence: Prevalence and General Awareness Across Genders

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Background: Urinary incontinence (UI) is a widespread yet frequently underreported condition that can significantly impact the quality of life in both men and women. Despite its prevalence, awareness about UI remains limited. This study aimed to evaluate the prevalence of urinary incontinence and assess the general level of awareness among male and female participants.

Methodology: A cross-sectional study was conducted using a Google Form–based questionnaire. A total of 171 participants responded to the survey. The questionnaire consisted of sections on demographic information, the International Consultation on Incontinence Questionnaire–Short Form (ICIQ-SF) to assess the presence and severity of UI and general awareness-related questions.

Results: Among the participants, 57.6% were females and 42.4% were males. The overall prevalence of UI was found to be 18.1%, with a higher occurrence in females compared to males. Although some participants demonstrated basic awareness, the overall general level of awareness regarding UI was moderate to low. A considerable number of respondents were unaware of available treatment options and commonly perceived UI as a normal consequence of aging rather than a treatable medical condition.

Conclusion: The study identified a notable prevalence of UI among the general population, particularly among females, along with a significant gap in general awareness. These findings highlight the need for targeted educational interventions to improve knowledge, reduce stigma, and promote early diagnosis and management. Increasing public awareness can encourage timely healthcare-seeking behaviour and ultimately enhance the quality of life for affected individuals.

Keywords: Urinary incontinence, prevalence, awareness, gender differences, public health, quality of life

A Comparative Study on the Effects of DC Tap Water, Glycopyrrolate Iontophoresis, and Topical Application of 20% Aluminium Chloride on Hyperhidrosis Disease Severity Scale (HDSS) in Relation to Anxiety and Depression Affecting the Quality of Life in Young Adults

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Background: Hyperhidrosis is a long-term condition marked by excessive sweating that goes beyond what the body needs. This condition notably affects mental health and overall quality of life. Young adults with hyperhidrosis often suffer from higher levels of anxiety and depression, which can worsen their daily functioning and social interactions. Various treatments, like iontophoresis and topical agents, are commonly used.

Aim: This study aims to compare the effects of DC tap water iontophoresis, glycopyrrolate iontophoresis, and topical application of 20% aluminium chloride on disease severity, anxiety, depression, and quality of life in young adults with hyperhidrosis.

Methods: We included young adults diagnosed with hyperhidrosis in this study. They were placed into three intervention groups: DC tap water iontophoresis, glycopyrrolate iontophoresis, and topical application of 20% aluminium chloride. The treatment lasted for a set period. We measured outcomes using the Hyperhidrosis Disease Severity Scale , standardized anxiety and depression scales, and tools to assess quality of life.

Results: All three treatments showed improvements in HDSS scores. Glycopyrrolate iontophoresis resulted in a greater reduction in sweating severity compared to the others. We also observed significant improvements in anxiety and depression levels, along with better quality of life across all groups.

Conclusion: The study indicates that while all treatments effectively manage hyperhidrosis, glycopyrrolate iontophoresis may provide greater benefits in reducing disease severity and improving mental health and quality of life. These findings underscore the need for a comprehensive treatment approach that addresses both the physical and mental aspects of hyperhidrosis.

Keywords: Hyperhidrosis, Iontophoresis, Glycopyrrolate, Aluminium Chloride, Anxiety, Depression, Quality of Life

Comparative Effect of Thoracic Joint Mobilization with Breathing Exercises versus Scapular Stabilization exercises with Pectoral muscles Stretching exercises in Kyphotic Postpartum Females: A Randomized Controlled Trial Protocol

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Background: Postpartum women frequently adopt prolonged forward-flexed postures during breastfeeding and infant care, predisposing them to thoracic hyperkyphosis, musculoskeletal pain, and reduced respiratory efficiency. Despite the clinical burden, evidence comparing targeted physiotherapy interventions for this population remains limited.

Aim: To evaluate and compare the effectiveness of thoracic joint mobilization combined with breathing exercises versus scapular stabilization exercises combined with pectoral muscles stretching exercises on postural, respiratory, pain, and psychological outcomes in kyphotic postpartum females.

Methods: This study is designed as a participant-blinded randomized controlled trial. A total of 90 postpartum females aged 18–40 years, with postural hyperkyphosis and a breastfeeding duration of 6 months to 2 years, will be recruited and randomly allocated into three groups: Group A (thoracic joint mobilization with breathing exercises), Group B (scapular stabilization exercises with pectoral muscles stretching exercises), and Group C (control group receiving standard care). The intervention will be administered over a defined period (e.g., 4 weeks), with supervised sessions. Outcome measures will include Cobb's angle (radiographic assessment), pulmonary function tests (digital spirometer), oxygen saturation, interscapular distance, interscapular pain (Numerical Pain Rating Scale), and postnatal depression (Edinburgh Postnatal Depression Scale). Data will be analyzed using appropriate statistical methods with significance set at $p < 0.05$.

Expected Results: It is hypothesized that both intervention groups will show significant improvements compared to the control group, with differential effects between the two experimental approaches.

Conclusion: This study aims to provide evidence-based guidance for physiotherapy management of postpartum kyphosis, potentially improving functional and psychological outcomes in this population.

Trial Registration: CTRI/2024/03/064447

Keywords: Postpartum kyphosis, thoracic mobilization, scapular stabilization, Cobb's angle, physiotherapy

Psychological Reward Deficit and Its Influence on Physical Activity and Obesity Markers in Postpartum Women

Monali Saurabh Soni (PhD Scholar and Professor, Parul University, Vadodara)

Background: The postpartum period is characterized by significant physical and psychological changes that may influence health behaviors. Despite the well-established benefits of physical activity, adherence remains low among postpartum women. While previous research has focused primarily on depression, the role of anhedonia as an independent psychological factor affecting motivation and physical activity participation remains underexplored.

Objective: To assess the prevalence of anhedonia and examine its association with physical activity levels and obesity parameters among postpartum women.

Methods: A pilot cross-sectional study was conducted among 25 postpartum women (6 weeks to 2 years post-delivery). Anhedonia was assessed using the Snaith–Hamilton Pleasure Scale (SHAPS), physical activity levels were measured using the International Physical Activity Questionnaire (IPAQ), and obesity was assessed using Body Mass Index (BMI). Fisher's Exact Test and independent t-test were used for statistical analysis.

Results: Anhedonia was present in 36% of participants. A significant association was observed between anhedonia and physical activity levels ($p = 0.01$), with higher prevalence among participants with low physical activity. Additionally, participants with anhedonia had significantly higher BMI compared to those without anhedonia (36.3 ± 3.0 vs 28.7 ± 3.0 kg/m²; p < 0.001).

Conclusion: Anhedonia is a prevalent and significant factor associated with reduced physical activity and higher BMI in postpartum women. Addressing motivational and psychological barriers may enhance exercise adherence and improve postpartum health outcomes.

Keywords: Postpartum women; Anhedonia; Physical activity; Obesity; BMI; SHAPS; IPAQ; Rehabilitation

Awareness And Attitude Of Physiotherapists Toward Tele-Physiotherapy In Central Gujarat

Pooja Apur Soni, (Phd Scholar and Assistant Professor, Parul University, Vadodara)

BACKGROUND: Tele-physiotherapy refers to the use of telecommunication technologies to facilitate and enhance independent rehabilitation of patients in their own homes. In today's fast-paced lifestyle, many individuals face challenges such as limited mobility, long travel distances, busy schedules, or difficulty accessing healthcare facilities, making it necessary to find alternative methods of receiving rehabilitation services. Tele-physiotherapy serves as an effective medium through which a therapist can guide patients in performing specific exercises without the need for direct physical contact. Additionally, it saves time for both the therapist and the patient, as sessions can be conducted conveniently from the clinic or home, improving accessibility and continuity of care.

AIM: To evaluate the effectiveness and feasibility of tele-physiotherapy as a mode of delivering rehabilitation services in improving patient compliance, accessibility, and functional outcomes compared to conventional in-person physiotherapy.

METHODOLOGY: A qualitative research approach was used to conduct an online survey of physiotherapist in central Gujarat. In this study: 100 physiotherapists (BPT, MPT, PHD) meeting inclusion criteria were selected from the population who lived in different zones of central Gujarat. A brief questionnaire was prepared with Google forms was sent to physiotherapist via digital platforms (WhatsApp, face book, mail etc.). Questionnaire includes questions related to demographic data of physiotherapist and their knowledge and attitude towards tele-physiotherapy.

RESULT: The results show that among (n=105) physiotherapists, 89.5% physiotherapists know about tele-physiotherapy, 53% of physiotherapists have tele-physiotherapy at their work place and among that 47.6% of physiotherapists are using tele-physiotherapy. 88% of physiotherapists believe that tele physiotherapy is a reliable form of treatment and 87% of physiotherapists believe that tele physiotherapy can benefit a patient.

CONCLUSION: In central Gujarat Knowledge and attitude of tele-physiotherapy has a positive perception in physiotherapists.

KEYWORD: Tele physiotherapy, knowledge, attitude, central Gujarat

Comparison Of Occupational Stress Levels Among Physiotherapists Working In Private Clinics And Hospitals In Vadodara District

Tanvi Milandukumar Patel (PhD Scholar and Asst Prof), Parul University, Vadodara

BACKGROUND: Occupational stress is a significant concern among healthcare professionals, including physiotherapists, due to physical workload, psychosocial factors, time pressure, and organizational constraints. Persistent exposure to stress may lead to burnout and reduced professional effectiveness.

AIM: To compare the level of occupational stress among physiotherapists working in private clinics and private hospitals in Vadodara district.

METHODOLOGY: An observational study was conducted among 100 physiotherapists (50 from private clinics and 50 from private hospitals) aged 25–34 years using purposive sampling. The Perceived Stress Questionnaire (PSQ), consisting of 30 items rated on a four-point scale, was used as the outcome measure. Data were collected through Google Forms. Statistical analysis was performed using GraphPad software and Microsoft Excel 2016. As the data were normally distributed, an unpaired parametric t-test was applied.

RESULTS: The mean PSQ score for physiotherapists working in private clinics was 109.26 ± 13.10, while for private hospitals it was 109 ± 13.14. The comparison revealed no statistically significant difference between the two groups ($p = 0.9$). Both groups demonstrated a greater perceived level of occupational stress. Certain individual questionnaire items showed statistical significance, including feelings of tiredness, safety/protection, and enjoyment.

CONCLUSION: The study concludes that physiotherapists working in both private clinics and private hospitals in Vadodara district experience comparable and elevated levels of occupational stress. Factors such as workload, working hours, and patient demands may contribute to increased stress levels. Further studies with larger sample sizes and broader geographical areas are recommended.

KEY WORDS: Occupational Stress, Physiotherapists, Private Clinics, Private Hospitals, Perceived Stress Questionnaire

Tele-Rehabilitation as a Multidisciplinary Tool in Post-Surgical Orthopaedic Recovery: A NARRATIVE REVIEW

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Background: Tele-rehabilitation (TR) has become a promising way to provide physiotherapy and rehabilitation care to post-surgical orthopaedic patients through digital and communication platforms. With the rising need for accessible, cost-effective rehabilitation and lessons learned from the COVID-19 pandemic, TR offers a model that connects hospital-based care with home recovery. It involves a team of physiotherapists, surgeons, occupational therapists, and psychologists, supporting the growing focus on patient-centered healthcare.

Objectives: This literature review aims to evaluate the current evidence on how effective tele-rehabilitation is for post-surgical orthopaedic recovery, assess its role in multidisciplinary care, tackle practical implementation challenges, and identify future directions for broader adoption.

Methods: A literature review looked at published studies from PubMed, Google Scholar, BMC, Research Gate, Directory of Open Access journals and Telemedicine Reports. 10 Articles were identified in accordance with selection criteria. The studies included outcomes related to tele-rehabilitation in post-surgical orthopaedic patients, such as those recovering from hip fractures, knee surgery, and joint replacements. Key outcomes assessed included functional recovery, motor performance, treatment adherence, patient satisfaction, and clinical feasibility.

Results: A total of 10 studies of Tele-rehabilitation as an intervention tool in post-surgical orthopaedic recovery studies reflect significant improvement in patient functional recovery, patient satisfaction, adherence along with improved accessibility and cost-effectiveness.

Conclusion: Tele-rehabilitation has strong potential as a multidisciplinary tool for post-surgical orthopaedic recovery. It provides clinical outcomes similar to traditional physiotherapy while enhancing accessibility and convenience for patients.

Keywords: tele-rehabilitation, orthopaedic surgery, multidisciplinary care, post-surgical recovery, digital physiotherapy, telemedicine

Wearable Foot Sensor as a Preventive Strategy for Falls in Geriatric Individuals

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Background: Falls are a major health concern among older adults and are a leading cause of injury, hospitalization, and loss of independence in the geriatric population. Age-related changes such as reduced muscle strength, impaired balance, and altered gait patterns significantly increase the risk of falls. Advances in wearable technology, particularly foot sensors, provide opportunities for continuous monitoring of gait parameters and early identification of instability during walking.

Objective: To explore the role of wearable foot sensors in identifying gait abnormalities and reducing fall risk among geriatric individuals.

Methodology: A cross-sectional observational study was conducted among geriatric individuals aged 60 years and above. Participants were assessed using wearable foot sensor devices that recorded gait parameters such as step length, cadence, and walking stability. Fall risk was further evaluated using standard clinical balance and mobility assessments. The collected data were analyzed to determine the usefulness of wearable sensors in detecting gait disturbances associated with falls.

Results: The use of wearable foot sensors enabled identification of gait irregularities such as reduced step length, altered cadence, and imbalance during walking. Individuals with abnormal gait patterns demonstrated a higher risk of falls. Continuous monitoring through wearable sensors may help clinicians detect early signs of instability and implement timely preventive interventions.

Conclusion: Wearable foot sensors appear to be a promising technological tool for early detection of gait abnormalities and fall risk in geriatric individuals. Integrating wearable sensor technology into geriatric care may support fall prevention strategies and improve safety and mobility in the elderly population.

Keywords: Geriatric population, Falls, Wearable foot sensor, Gait analysis, Fall prevention

Association between menstrual cycles phases with low back pain in females of reproductive age (18-40 years)

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Background: Low back pain (LBP) is a common musculoskeletal complaint among females of reproductive age and is often associated with menstrual cycle changes. Hormonal fluctuations, particularly involving estrogen and progesterone, influence ligament laxity and spinal stability. Additionally, increased prostaglandin levels during menstruation contribute to pain perception and muscle spasm, potentially leading to increased low back pain.

Aim: To determine the association between menstrual cycle phases and low back pain in females aged 18–40 years.

Methodology: A cross-sectional observational study was conducted among 80 female participants aged 18–40 years. Data was collected using a self-structured Google Form. Pain intensity was assessed using the Visual Analog Scale (VAS) during pre-menstrual, menstrual, and post-menstrual phases. Additional information regarding functional limitations and lifestyle factors was also obtained.

Results: The findings revealed that low back pain intensity was highest during the menstrual phase, followed by the pre-menstrual phase, and lowest during the post-menstrual phase. Younger females reported relatively higher pain levels, possibly due to a higher prevalence of dysmenorrhea and lower pain tolerance. Hormonal fluctuations affecting ligament laxity and spinal stability, along with increased prostaglandin levels, were found to contribute to pain. Lifestyle factors such as prolonged sitting further aggravated symptoms.

Conclusion: There is a significant association between menstrual cycle phases and low back pain in females of reproductive age, with maximum pain occurring during menstruation. Hormonal and lifestyle factors play a crucial role in influencing pain intensity.

Keywords: Menstrual cycle, Low back pain, Dysmenorrhea, Hormones, Physiotherapy

To Compare the Effectiveness of Spencer Muscle Energy Technique and Conventional Muscle Energy Technique on Pain and Range of Motion In Patient With Frozen Shoulder

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Backgroung: Frozen shoulder (adhesive capsulitis) is a common musculoskeletal condition characterized by pain, stiffness, and restricted shoulder range of motion (ROM), leading to functional disability. Physiotherapy interventions such as Muscle Energy Technique (MET) are widely used for its management. Spencer Muscle Energy Technique (SMET) is a structured, joint-specific approach, whereas conventional MET is muscle-specific. However, limited evidence exists comparing their effectiveness.

Methodology: A randomized controlled trial was conducted on 15 patients with frozen shoulder, divided into two groups: Spencer MET (n=8) and conventional MET (n=7). Both groups received treatment 5 sessions per week for 2 weeks. Outcome measures included pain (VAS), range of motion (goniometer). Pre- and post-intervention assessments were performed, and statistical analysis was used to compare within-group and between-group differences.

Results: Spencer MET and Conventional MET both have statistically insignificant difference in Pain reduction and range of motion P value greater than 0.05 ($P > 0.05$) both the group has shown significant within the group difference for pain, though the Clinical improvement in Range of motion in spencer MET more than Conventional MET.

Conclusion: Both Spencer MET and conventional MET are effective in reducing pain and improving range of motion in patients with frozen shoulder.

Keywords: Frozen shoulder, adhesive capsulitis, arthrofibrosis, Spencer Muscle Energy, Technique, spencer technique, Conventional muscle energy technique, Range of Motion, Pain

Arm Circumference as a Field-Based Predictor of Limb Occlusion Pressure in Collegiate Students: Implications for Accessible Blood Flow Restriction Prescription

Ayesha Falak, BPT Student, Aligarh Muslim University

Background and Purpose: Blood flow restriction (BFR) training has emerged as a promising low-load exercise strategy in which accurate determination of limb occlusion pressure (LOP) is critical for safe implementation. Despite being proposed as a practical anthropometric indicator of LOP, the relationship between arm circumference and LOP remains underexplored in collegiate populations. This study primarily aimed to investigate the relationship between arm circumference and LOP in healthy young adults. Secondary objectives examined associations between LOP and other anthropometric and hemodynamic variables, including BMI, body weight, systolic blood pressure (SBP), and diastolic blood pressure (DBP).

Methods: A cross-sectional observational study was conducted with 35 participants (mean age: 21.5 ± 1.3 years; 20 females, 15 males). LOP was recorded using a handheld pulse oximeter in conjunction with a sphygmomanometer cuff. Anthropometric measures including arm circumference, height, weight, and BMI were recorded alongside hemodynamic parameters (SBP, DBP, heart rate, SpO_2). Pearson correlation analysis and simple linear regression were performed to examine associations with LOP.

Results: Mean LOP was 126.5 ± 11.4 mmHg and mean arm circumference was 26.1 ± 3.8 cm. Arm circumference demonstrated a significant positive correlation with LOP ($r = 0.634$, $p < 0.001$), accounting for approximately 40.2% of the variance ($R^2 = 0.402$). The derived regression equation was: LOP = 77.08 + 1.89 × arm circumference (cm). Secondary analyses revealed significant correlations between LOP and body weight ($r = 0.652$, $p < 0.05$), BMI ($r = 0.613$, $p < 0.001$), DBP ($r = 0.428$, $p = 0.010$), and SBP ($r = 0.374$, $p = 0.027$).

Conclusion: Arm circumference is a significant and clinically accessible predictor of LOP. BMI, body weight, and blood pressure variables further contribute to LOP variance, suggesting a multifactorial model may enhance prediction accuracy. These findings support the use of arm circumference-based estimation in settings where Doppler assessment is unavailable.

Key words: Blood flow restriction, limb occlusion pressure measurement, arm circumference

Beyond Medication: The Role Of Physical Therapy In Schizophrenia- A Systematic Review

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Background: Schizophrenia is a severe and chronic psychiatric disorder and leading cause of mental disability worldwide which is characterized by positive symptoms (hallucinations and delusions) and negative symptoms (avolition, anhedonia and social withdrawal) resulting significantly in functional impairment and reduced quality of life. Although antipsychotic drugs remain the preliminary intervention strategy, approximately 30–40% of individuals with schizophrenia develop a treatment-resistant form, known as refractory schizophrenia which leads to poor response in terms of alleviating symptoms. Emerging scientific evidence suggests that aerobic exercise may play a beneficial role in the management of schizophrenia and should be considered as a potential therapeutic strategy.

Aim: To evaluate the effectiveness of aerobic exercise interventions in improving total symptoms (negative and positive) in individuals diagnosed with Schizophrenia.

METHODS: A comprehensive search of databases such as: PubMed, PEDro and Cochrane library is done to identify randomized controlled trials (RCTs) evaluating effects of the aerobic exercises in patients with schizophrenia. After screening titles and abstracts, removing duplicate studies, relevant studies were selected from an initial yield of 150 articles. Studies that conducted aerobic exercise interventions with control and assessed its symptoms severity using validated outcome measures such as Positive and Negative Syndrome Scale (PANSS) were included. Data regarding study characteristics, participants targeted, intervention protocols, and clinical outcomes were extracted and analysed.

RESULTS: Studies demonstrated improvement in both positive and negative symptoms following the intervention of aerobic exercise than in control.

CONCLUSION: Aerobic exercise may be an effective adjunctive physical therapy intervention for improving positive and negative symptoms in individuals with schizophrenia. Further high-quality randomized controlled trials are needed to establish optimal exercise protocols.

KEYWORDS: Schizophrenia, schizophrenic disorder, physical activity, physical therapy, aerobic exercises

Impact Of Circadian Rhythm On Athletic Performance: A Systematic Review

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Background: Circadian Rhythm refers to body's natural 24 hours biological clock that regulate physiological and behavioral process of human body play a crucial role in the quality of life. It may also affect the magnitude of success and failure aspects of life including competitive sports. Recent researches show that parameters like, time of day plays an important role in determining peak athlete performance.

Purpose: The aim of this study is to identify the relationship between circadian rhythm and sport performance and to determine the factors that affect physical performance in athletes.

Method: Relevant literature was reviewed from multiple scientific databases such as Pubmed, scopus , Google scholar which was used to identify randomized controlled trial (RCTs) evaluating the component of circadian rhythm such as time of day in athletic performance. After screening titles and abstract removing duplicate studies, relevant studies were selected from the initial yield of 120 articles. Data regarding study characteristics, participants targeted, intervention protocol and clinical outcomes were extracted and analyzed.

Results: The findings indicate that athletic performance is often higher in the late afternoon or evening when core body temperature reaches its peak.

Conclusion: Circadian rhythm plays an important role in influencing athletic performance. Understanding daily biological rhythms can help optimize training schedule and competition timing for better performance outcomes.

Keywords: Circadian rhythm, time of day, sport performance

Effectiveness of Balance Training in Diabetic Peripheral Neuropathy: A Systematic Review

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Background: Diabetic peripheral neuropathy is a condition characterize by nerve damage due to prolonged high blood sugar levels in diabetic patients, affecting approximately 50% of the hundreds of millions of individuals living with the disease. While pharmacological management mainly focuses on the alleviation of neuropathic pain, but has limited effect on improving balance impairments. This review aims to delineate the effectiveness of balance training on individuals suffering from diabetic peripheral neuropathy, synthesizing current evidence based on latest RCTs to provide a framework for clinical implementation and future research.
Purpose: To evaluate the effectiveness of balance training in treating patients suffering with diabetic peripheral neuropathy.

Methods: A comprehensive search of databases PubMed, PEDro and Cochrane library to identify randomized controlled trials evaluating balance training interventions in patients with diabetic peripheral neuropathy. After screening titles, abstracts, and removing ineligible studies, relevant studies were selected from an initial yield of 132 articles. Studies that assessed functional balance using the Berg Balance Scale were included. Data regarding study designs, population targeted and intervention protocols and balance protocols were extracted and analyzed.

Results: The studies demonstrated gradual improvements in functional balance following the intervention protocols. Significant increases in Berg Balance Scale scores were observed in intervention groups, indicating enhanced postural stability and reduced fall risk.

Conclusion: Balance training interventions are effective in improving functional balance in individuals with diabetic peripheral neuropathy. Incorporating structured balance training into rehabilitation programs may help increase the functional independence and reduced risk of fall in this population.

Keywords: Diabetic peripheral neuropathy; balance training; exercise therapy; diabetes mellitus

Knowledge Of Palliative Care Among Healthcare Students In Abhilashi University: A Cross-Sectional Survey

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Palliative care is a holistic approach in which the therapists encourage self-reliance and wellbeing of terminally ill patients, focusing on their physical, psychological, social and spiritual needs in order to improve quality of life (QoL) irrespective of their remaining life span. Knowledge of palliative care is essential for future healthcare professionals for early identification of patient's need in life limiting illness. Inadequate exposure in healthcare courses frequently leads to lack of comprehension in treatment of terminally ill patients. The objective was to evaluate knowledge of palliative care among healthcare students at Abhilashi University.

A survey with a cross-sectional design was carried out among students in healthcare departments (BPT, BAMS and PharmD) at Abhilashi University. A structured questionnaire was given to the participants to evaluate knowledge of palliative care and was filled out anonymously and gathered on the same day. A total of 200 healthcare students took part in the study. This group included students from BPT (36.5%), PharmD (22.5%), and BAMS (41%). The knowledge was measured with a 13-item questionnaire PaCKS, where the highest possible score was 20.

According to Modified Bloom's criteria, 84 participants (42%) showed good knowledge. Meanwhile, 96 participants (48%) had moderate knowledge, and 20 participants (10%), had poor knowledge of palliative care. The overall rate of adequate knowledge, which includes both good and moderate levels, was 90%, suggesting a satisfactory level of awareness among healthcare students.

Keywords: Healthcare Students, Holistic approach, Knowledge, Multidisciplinary Approach, Palliative Care, Quality of life, Questionnaire, University Students

Role of Physiotherapy in Menstrual Disorder: A Review of Literature

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Menstrual disorders, particularly primary dysmenorrhea, are well acknowledged as prevalent gynaecological issues among adolescent girls and women in their reproductive age. These disorders are usually linked with symptoms such as lower abdominal discomfort, cramps, fatigue, and emotional fluctuations, all of which can disrupt daily activities, academic achievements, and overall health. While the standard treatment often involves medications like non-steroidal anti-inflammatory drugs (NSAIDs) and hormonal therapies, these alternatives might lead to side effects and may not be suitable or preferred for everyone. Recently, physiotherapy has been recognized as a viable non-pharmacological strategy for addressing menstrual disorders. Various techniques, including exercise programs, transcutaneous electrical

nerve stimulation (TENS), myofascial release, pelvic floor muscle exercises, and relaxation methods, have been investigated for their effectiveness in managing these conditions. The objective was to assess the effectiveness of various physiotherapy interventions in the management of primary dysmenorrhea among adolescent girls and young women, with particular emphasis on reducing pain, improving functional ability, and enhancing overall quality of life. The findings from the reviewed studies consistently indicated that non-pharmacological approaches played a significant role in reducing pain and improving quality of life in women with primary dysmenorrhea. A variety of interventions, including exercise-based therapies (such as aerobic exercises, stretching, and yoga), electrotherapy modalities (TENS, Interferential Therapy, High Intesity Laser Therapy, manual techniques (such as myofascial release and connective tissue manipulation), thermotherapy, and relaxation techniques, demonstrated significant positive effects on symptoms.

Keywords : Primary dysmenorrhea, Menstrual disorders, Menstrual cycle, Pain management, Prostaglandins, Physiotherapy, Transcutaneous electrical nerve stimulation (TENS), Exercise therapy, Yoga, Quality of life

A Review of Literature: Role of Physiotherapy in Post-partum Low Back Pain

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Pregnancy-related changes in posture and weak core and pelvic muscles are the main causes of postpartum low back pain, a common condition reported by women after giving birth. The lumbar spine and pelvic tissues are more stressed during pregnancy due to hormonal changes, especially elevated relaxin, weight growth, and changes in center of gravity. These alterations, along with the physical demands of pregnancy, can result in joint instability and muscle imbalances, which make women more vulnerable to pain during and after pregnancy. Physiotherapy-based rehabilitation is a successful method for treating low back pain following childbirth. Exercises that are specifically designed to strengthen the pelvic and core muscles, correct postural abnormalities, and restore natural movement patterns can reduce pain and enhance functional ability. This review was conducted by searching electronic databases such as BMC Pregnancy and Childbirth, Indian Journal.com, International Journal of Life sciences, Google scholar, PubMed, Cochrane Library, and Biotechnology and Pharma Research.Many women continue to experience pain and instability after delivery, yet effective rehabilitation is often overlooked. There is a need to assess whether core stabilization exercises can strengthen weakened muscles, reduce pain, and improve daily functioning in postnatal women.The results of the analyzed research show that postpartum women's pain and impairment can be effectively reduced by physiotherapy interventions. The evidence for enhancing spine stability and muscle strength came from core stabilization activities. Among the various interventions, core stabilization exercises and pelvic floor muscle training demonstrated the strongest evidence in improving spinal stability, muscle strength, and postural control.

Role of physiotherapy in PCOS management: A Literature Review

Hemlata Thakur

Polycystic ovary syndrome is endocrine disorder affecting women leading to menstrual irregularities, metabolic dysfunction, infertility and reduce quality of life. Sedentary lifestyle, obesity, insulin resistance, menstrual irregularities all are responsible for worsening the symptoms of PCOS. Physiotherapy offers a scientific noninvasive approach for managing the PCOS. Evidence suggests that physiotherapy interventions can improve and elevate the symptoms of PCOS. This study aimed to evaluate the effectiveness of physiotherapy-based interventions in improving metabolic and hormonal outcomes in women with PCOS. This review was conducted by searching electronic databases such as Google scholar, Pub med, Research gate, National institute of health (NIH). Health problems like stress, anxiety, and depression were very common as well. Changes in lifestyle, such as adjustments in diet and physical activity, showed notable advancements in weight loss, insulin sensitivity, and regularity of menstrual cycles. Physiotherapy treatments resulted in notable enhancement of PCOS symptoms. Aerobic activities like brisk walking, cycling, treadmill workouts, and jogging (30–45 minutes, 4–5 days a week) aided in weight loss and enhanced insulin sensitivity. Exercises such as squats, lunges, and core strengthening (2–3 sets, 10–15 repetitions) enhanced muscle mass and metabolic rate. Practices such as Surya Namaskar, Bhujangasana, Dhanurasana, and Pranayama were helpful in decreasing stress and enhancing hormonal equilibrium. These interventions contributed to the restoration of menstrual regularity and enhancement of overall quality of life. Physiotherapy plays an important role in the management of PCOS. It is a safe, cost-effective, and non-pharmacological approach that helps improve symptoms and prevent complications when combined with lifestyle changes.

Keywords: PCOS, Physiotherapy, Aerobic exercises, Lifestyle management, obesity

Prevalence of Scapular Dyskinesia in Generation Z: A Cross-sectional Study

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Introduction- Scapular dyskinesia refers to alteration in the static position or dynamic movement of the scapula and is frequently asymptomatic in young individuals. Due to sedentary lifestyle, prolonged academic sitting, and increased digital device usage, Generation Z may demonstrate subtle scapular movement alterations that remain clinically unrecognized. Estimating prevalence in this population is essential for early screening and preventive physiotherapy planning.
Aim and objective- The aim of the study is to determine the prevalence of scapular dyskinesia in Generation Z. The objective is to assess scapular asymmetry using the Lateral Scapular Slide Test (LSST) and to quantify the proportion of apparently healthy young adults demonstrating scapular dyskinesia.
Need of study– There is limited prevalence-based data on scapular dyskinesia in asymptomatic young adults, particularly in the Indian context. Objective screening using LSST and SDT is required to establish baseline epidemiological evidence.
Methodology- A cross-sectional observational study was conducted. Bilateral scapular distances from standardized scapular landmarks to spinal spinous processes were measured using measuring tape and ruler in defined arm positions as per LSST protocol.
Outcome measures - Prevalence of scapular dyskinesia determined by side-to-side scapular asymmetry on LSST and SDT, expressed as proportion and percentage.
Results- The study reported prevalence and distribution of scapular dyskinesia among Generation Z.
Conclusion- The study provides baseline prevalence data to support early screening and preventive physiotherapy strategies.
Key Words- Scapular Dyskinesia; Lateral Scapular Slide Test; Prevalence; Generation Z; Scapular Asymmetry

Effect of Simple Desk Exercises on Concentration and Fatigue among Students during Long Lectures: A Experimental Study

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Introduction- Long lectures in higher education, often lasting one to three hours, can leave students mentally exhausted and physically uncomfortable. Extended sitting may cause musculoskeletal strain, poor circulation, and reduced oxygen to the brain, leading to fatigue, restlessness, and lower academic engagement.
Aim and Objective - This study aims to evaluate the effect of basic desk exercises on students' focus and fatigue during long lectures.
Methodology- A total of 64 undergraduate students (37 females and 27 males) were recruited using stratified random sampling to ensure proper representation. Participants were selected based on predefined inclusion and exclusion criteria. The study evaluates the effect of simple
desk exercises on concentration and fatigue during long lectures. Pre- and post-intervention data were collected using validated tools, including the Fatigue Severity Scale (FSS) to assess fatigue and the Wechsler Digit Span Test (WDST) to measure concentration.
Procedure: Participants received a simple desk exercise program during lectures and performed it for 1 week. Fatigue and concentration were assessed using the (FSS) and (WDST) at baseline and after the Experimental, and the results were compared to determine the effect of the exercises.
Results- A total of 64 participants were analysed. The mean FSS score decreased from 45.86 ± 7.10 to 33.81 ± 12.90, indicating a significant reduction in fatigue ($t = 7.76$, $p < 0.001$). The mean WDST score increased from 3.86 ± 1.33 to 6.59 ± 1.27, showing a significant improvement in cognitive performance ($t = -14.44$, $p < 0.001$).
Conclusion- Both interventions effectively reduced fatigue and significantly improved attention and memory among participants.
Key Words: Fatigue Severity Scale (FSS), Wechsler Digit Span Test (WDST)

To Compare the Effectiveness of Physical Therapy and Yoga Interventions in the Management of Non-Specific Lower Back Pain

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Background: Low back pain is a leading cause of discomfort in young adults, leading to a reduction in work efficiency and altering the quality of life. Different approaches have been found to treat and reduce the symptoms of LBP, but the effectiveness is still unsure in relation to a treatment protocol.
Objective: To understand the impact and effectiveness of physical therapy exercises and yoga in non-specific LBP.
Methodology: A total of 127 subjects attended the screening from BPT department of the institute; out of these 40 subjects were included according to the inclusion and exclusion criteria. All the subjects were randomly selected (Convenient Sampling) and divided into two groups: Group A, 20 subjects (Physical Therapy Intervention), Group B, 20 subjects (Yoga), with non-specific low back pain with the age 18-30 years. Both groups were assessed for the pain status using the Visual Analogue Scale and, Modified Oswestry Low Back Pain Disability Questionnaire. These parameters were assessed before the baseline of the program, 1 month and after three months, respectively.
Result: The result of present study revealed that there was a gradual and definitive reduction of self-reported pain and disability score at baseline through Follow up which reflect on mean value in both groups, and the result suggested that the Physical therapy intervention group show immediate decrease in pain and disability score compared to yoga group after 1 months of intervention as well as in follow up days.
Conclusion: Physical therapy intervention group shows a marked decrease in the pain score from the baseline to the follow-up days.
Keywords: Nonspecific low back pain, physical therapy, yoga

Effect Of Posture Correction Exercises On Neck Pain Among Smartphone-Using Students- An Interventional Study"

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Introduction- Neck pain has emerged as a common musculoskeletal problem in the digital age, especially among university students due to excessive smartphone use. Prolonged screen time and poor posture, particularly forward head posture, increase strain on the cervical spine, causing pain, stiffness, and limited mobility.
Aim and Objective - This study aims to examine the relationship between posture correction exercises and neck pain among frequent smartphone users.
Methodology- A total of 61 (38 Female, 23 Male), undergraduate students from various academic disciplines were recruited through stratified random sampling to ensure representation across different fields of study and smartphones as per inclusion and exclusion criteria, and pre and post data measures with validated tools like Visual Analogue Scale (VAS), Neck Disability Index (NDI), and Craniovertebral Angle (CVA).
Procedure- Participants received a structured posture correction exercise program, 3 sessions per week for 4 weeks and After completion of the intervention, all outcome measures will be reassessed and compared with baseline values.
Results- VAS showed improvement by 67% on average, indicating substantial pain relief post-intervention. NDI (Neck Disability) reduced by 37%, showing meaningful functional improvement in neck disability and CVA (Craniovertebral Angle) increased significantly, reflecting improved head posture. All three measures are statistically significant at $p < 0.001$, confirming the intervention was effective across all outcome parameters.
Conclusion- The intervention effectively reduced neck pain, improved functional ability, and corrected posture in university students.
Key Words: NDI Scale, VAS, Posture Correction Exercises

Prevalence of Nomophobia Among University Students

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Introduction- Nomophobia, an abbreviation for "No-Mobile-Phone-Phobia" is a contemporary phenomenon that reflects the anxiety individuals experience when they are without their mobile phones. This term was first coined by the UK Post Office in 2008.
Aim and Objective - The primary aim of this study was to investigate the levels of nomophobia among undergraduate students. The Nomophobia questionnaire (NMP-Q) was used as main instruments for data collection. The descriptive, inferential and analytical approach was used.
Outcome measures- Nomophobia Questionnaire (NMP-Q): The Nomophobia Questionnaire (NMP-Q) is a robust tool used to evaluate the extent of nomophobia among individuals. It encompasses 20 items, which are categorized into four distinct dimensions: the inability to communicate, losing connectedness, inability to access information, and giving up convenience. Participants rate each item on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The total score can range from 20 to 140, with higher scores reflecting a greater severity of nomophobia.
Results- The population in the study is heterogeneous, and the sample size is n=100). The number of male participants is n=25, and the number of female participants n=75. The result was analyzed by using the Kolmogorov-Smirnov test, which does not follow normal distribution. The non-parametric Wilcoxon signed rank test was used (p value <0.01)
Conclusion- This study serves as a foundational exploration of nomophobia within the university student population. By anchoring our discussion in existing literature, we elucidate the complex interplay between demographic characteristics, nomophobia prevalence, and subscale scores.
Key Words: Nomophobia, Students, University, Anxiety

PSYCHOLOGY ABSTRACT- 3

Mind, Sleep, and Cognition: A Cross-Cohort Investigation of Psychological Distress and Cognitive Functioning

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Background: Psychological distress and sleep quality are important factors influencing cognitive functioning. This study examines how anxiety, depression, and stress, along with sleep quality, are associated with specific cognitive domains such as working memory, executive functioning, and inhibitory control across different age groups.

Methods: Participants aged 10 to 85+ years were recruited using purposive sampling. They were assessed using the Depression Anxiety Stress Scale (DASS-21), Digit Span (working memory), Stroop Task (inhibitory control), Wisconsin Card Sorting Test (WCST; executive function), and Pittsburgh Sleep Quality Index (PSQI). Associations between variables were examined, and comparative analyses were conducted across age groups.

Results: Psychological distress varied across age groups, with adolescents (μ Depression = 14.2; μ Anxiety = 13.5) and older adults (μ Depression = 15.8; μ Anxiety:= 14.7) reporting higher levels than midlife adults (μ Depression = 10.3; μ Anxiety = 9.8). In contrast, stress peaked in adulthood (μ Stress = 17.6). Poor sleep quality (higher PSQI scores) was observed across groups, particularly among older adults.

Cognitive performance declined with age in working memory (Digit Span) and executive functioning (WCST), while inhibitory control (Stroop) remained relatively stable. Poor sleep quality was associated with greater psychological distress and reduced cognitive performance. Correlation analyses showed that psychological distress was negatively associated with cognitive functioning. Depression demonstrated the strongest negative correlations with executive functioning ($r = -.45$, $p = .002$) and inhibitory control ($r = -.47$, $p = .001$), followed by stress with executive functioning ($r = -.42$, $p = .004$). Anxiety showed weak and non-significant associations (p > .05). Additionally, age group was positively correlated with depression ($r = .38$, $p = .006$), anxiety ($r = .32$, $p = .018$), and stress ($r = .25$, $p = .041$).

Conclusion: Psychological distress, especially depression and stress, strongly impairs executive and inhibitory cognitive functions, peaking in adolescents and older adults while stress dominates midlife. Poor sleep exacerbates these effects across ages, underscoring the need for targeted interventions.

Adaptive Expressivity And Life Satisfaction In Women With And Without Menstrual Disorders

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Menstrual disorders are commonly framed as disabling conditions that disrupt relationships and overall well-being. In contrast, perspectives from resilience and subjective well-being homeostasis suggest that individuals can adjust to recurring stressors without experiencing a decline in life satisfaction. Building on this view, the present study proposes Menstrual Resilience Decoupling Theory (MRDT), which suggests that women with menstrual disorders preserve stable well-being by separating specific challenges from their overall life satisfaction while engaging in adaptive interpersonal expression.

A quantitative, cross-sectional ex post facto study was conducted with 181 women aged 18–35, including a menstrual-disordered group (n = 36; mainly dysmenorrhea and PMS) and a control group (n = 145). Life satisfaction was measured using the Satisfaction With Life Scale (SWLS; α = .87), and interpersonal functioning was assessed using the FIAT-Q-SF. Due to non-normal distributions and unequal group sizes, Welch's t-tests, Bayesian analyses, and Spearman correlations were applied.

Findings revealed no significant difference in life satisfaction between groups (p = .413), with both remaining within the "homeostatically protected" range (approximately 70–80%). However, women with menstrual disorders showed higher levels of Excessive Expressivity and Argumentativeness, along with a trend toward greater Connection/Reciprocity, suggesting more active interpersonal engagement.

Importantly, life satisfaction in the disordered group was not associated with interpersonal functioning, indicating a decoupling between relational strain and overall well-being. In contrast, the control group showed the expected negative relationships. Overall, MRDT frames menstrual disorders as cyclical stressors that promote adaptive interpersonal responses while preserving well-being, challenging deficit-based views and emphasizing resilience through "adaptive expressivity with well-being insulation."

KEYWORDS: Menstrual disorders, Life satisfaction, Resilience, Interpersonal functioning, Subjective well-being homeostasis

When Feeling Connected Means Being Alone: Parasocial Ageing and the Algorithmic Displacement Hypothesis

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Loneliness among older adults represents one of the most pressing yet underaddressed challenges in geriatric healthcare, with established consequences including accelerated cognitive decline, depression, and elevated mortality risk. The rapid proliferation of algorithm-curated platforms, particularly Facebook, YouTube, and WhatsApp, among older Indian adults has fundamentally altered the social landscape of ageing. While digital connectivity is frequently promoted as a remedy for geriatric isolation, existing literature does not adequately disentangle perceived social connectedness from structural social engagement. Algorithmic content personalisation, by continuously delivering familiar, emotionally resonant, and parasocially engaging content, may cultivate a subjective sense of belonging that simultaneously masks & displaces meaningful interpersonal contact. This phenomenon, here termed “parasocial ageing”, remains unexamined as a construct in geriatric literature, representing a significant clinical blind spot in multidisciplinary care. This paper aims to: 1) introduce and define parasocial aging as a theoretically grounded construct at the intersection of digital psychology, gerontology, and clinical practice; 2) propose a conceptual mediation model in which algorithmic exposure drives parasocial relationship formation, which in turn inflates perceived connectedness while inversely predicting structural social engagement; and 3) present the Parasocial Engagement and Isolation Risk Index (PEIRI) as a brief, clinically applicable screening tool for use in geriatric multidisciplinary settings. The framework integrates three established theoretical traditions: Horton and Wohl’s (1956) parasocial interaction theory, updated for algorithmically mediated environments; Weiss’s (1973) distinction between social isolation and perceived loneliness; and contemporary algorithmic curation research documenting personalisation-driven engagement loops. The proposed model posits that parasocial relationship strength mediates the relationship between algorithmic content exposure & perceived connectedness, with structural social network contraction as the downstream outcome. Digital literacy & living arrangements are identified as key moderating variables. This configuration produces what is termed ‘the displacement hypothesis’, the algorithmically sustained illusion of connection actively substitutes for, rather than supplements, real social engagement in older adults. For rehabilitation and healthcare professionals working with older populations, parasocial ageing introduces a clinically significant assessment gap - an older adult may present with subjectively adequate social well-being while experiencing deepening structural isolation, rendering

standard loneliness screening insufficient. The proposed PEIRI addresses this by assessing algorithmic platform engagement, parasocial relationship strength, perceived versus actual social contact frequency, & digital literacy in a brief multi-item format suitable for geriatric outpatient and rehabilitation settings. Occupational therapists, psychologists, and geriatric physicians stand to benefit most directly from its integration into routine multidisciplinary assessment. A roadmap for empirical validation of the construct & the instrument is also outlined.

Keywords: Parasocial ageing, algorithmic curation, structural loneliness, perceived connectedness, geriatric mental health, digital psychology.

OCCUPATIONAL THERAPY PAPERS

Role of Occupational Therapy in Down Syndrome: A Case Report of a 4-Year-Old Male Child

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BACKGROUND: Down syndrome is a genetic condition associated with hypotonia, ligamentous laxity, delayed motor milestones, and challenges in adaptive functioning. Children in the preschool years often present with fine motor delay, poor postural control, and dependence in self-care activities. Early occupational therapy plays a key role in promoting functional independence and participation in daily routines.
OBJECTIVE: To describe the occupational therapy assessment and intervention process in a 4-year-old male child with Down syndrome and to examine changes in motor and functional performance following a structured 12-week program.
METHODOLOGY: A 4-year-old boy diagnosed with Down syndrome was referred with concerns of delayed fine motor skills, difficulty in dressing and feeding, poor attention during table-top tasks, and low muscle tone. Standardized assessments included the Peabody Developmental Motor Scales–Second Edition (PDMS-2), Pediatric Evaluation of Disability Inventory (PEDI), Sensory Profile (Caregiver Form), and Vineland Adaptive Behavior Scales. Non-standardized methods involved clinical observation, parent interview, play-based assessment, task analysis of self-care activities, and a developmental checklist.
Baseline findings showed below-average fine motor quotient on PDMS-2, reduced grasp strength, immature pencil grasp, dependence in dressing and feeding tasks on PEDI, and mild sensory seeking behaviors. The child attended occupational therapy three times per week for 12 weeks. Intervention focused on postural strengthening, hand function training, bilateral coordination activities, sensory integration strategies, structured play, ADL training, and parent education for home carryover.

RESULT: Post-intervention assessment showed improvement in fine motor scores on PDMS-2, with better grasp pattern and improved in-hand manipulation. PEDI scores indicated partial independence in feeding and improved participation in dressing tasks. Attention span during structured play increased, and sensory regulation improved as reported by caregivers. Functional gains were observed in classroom readiness skills.
CONCLUSION: This case demonstrates that a structured, goal-oriented occupational therapy program can support meaningful improvements in motor skills, adaptive behavior, and daily participation in a preschool child with Down syndrome. Early

intervention combined with active parental involvement enhances functional outcomes and supports overall development.
KEYWORDS: Down syndrome, Occupational therapy, Fine motor development, Activities of daily living, Sensory processing, Early intervention medical College,Indore

Role of Early Occupational Therapy Intervention in Developmental Delay: An Evidence-Based Review

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Background: Developmental delay is a significant pediatric concern characterized by a lag in achieving age-appropriate milestones across motor, cognitive, language, social-emotional, and adaptive domains. Early identification and intervention are critical due to the heightened neuroplasticity observed during the first five years of life. Occupational Therapy (OT), grounded in a client-centered and occupation-focused framework, plays a pivotal role in optimizing functional outcomes in children with developmental delays.

Objective: Evidence - based review aims to synthesize current literature on the effectiveness of early Occupational Therapy interventions in improving developmental trajectories. Findings consistently demonstrate that early OT intervention enhances fine and gross motor skills, sensory processing abilities, executive functioning. Family-centered care models further strengthen outcomes by empowering caregivers and promoting carryover within natural contexts.

Methodology: This study adopted a comprehensive literature review design to explore the role of occupational therapy interventions in developmental delay. An extensive and systematic literature search was conducted to identify relevant, peer-reviewed research, clinical guidelines, and evidence-based reports related to neonatal occupational therapy practice. Major academic and health science databases were explored, including PubMed, the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and ResearchGate. The selected literature was screened and reviewed to extract key findings related to intervention strategies, clinical outcomes, and interdisciplinary collaboration. Data were synthesized narratively to identify common themes, clinical implications, and existing gaps in practice. This methodology enabled a holistic understanding of current evidence while highlighting areas requiring further research to strengthen occupational therapy interventions in developmental delay.

Result: Beyond statistical outcomes, early Occupational Therapy intervention restores hope to families navigating uncertainty. It transforms delayed milestones into achievable goals and participation restrictions into meaningful engagement. The evidence strongly supports early referral and structured intervention programs to maximize functional independence and quality of life.

Conclusion: In conclusion, early Occupational Therapy intervention is not merely supportive but foundational in the management of developmental delay. Strengthening early screening systems and integrating evidence-based OT practices into pediatric healthcare policies is imperative for optimizing developmental outcomes.

Neurodevelopmental principles underscore that timely therapeutic input facilitates adaptive neural reorganization, reduces secondary complications, and minimizes long-term disability. Moreover, interdisciplinary collaboration ensures holistic management addressing biopsychosocial dimensions of development.

Keywords: Occupational Therapy interventions, Intervention in Developmental Delay, Infants early interventions, Pediatric Rehabilitation, Neurodevelopmental Treatment

Role of Occupational Therapy in Cutaneous Allodynia Rehabilitation: A Case Study

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Background: Cutaneous allodynia is a recognized manifestation of Central Post-Stroke Pain (CPSP) following thalamic injury due to disruption of the spinothalamic tract and impaired thalamic sensory modulation. Thalamic disinhibition and central sensitization result in mechanical hypersensitivity, where non-noxious stimuli provoke pain. This significantly restricts mobility and functional independence in elderly stroke survivors.

Objective: To evaluate the effectiveness of a structured OT program in managing lower limb cutaneous allodynia following right thalamic stroke, focusing on pain reduction and functional improvement.

Methodology: A 70-year-old female with a history of right thalamic stroke presented with severe mechanical allodynia in the left lower limb. Light touch and brush stimulation elicited intense pain, resulting in avoidance of ambulation. Baseline standardized assessments showed: DN4 score 6/10 and LANSS 16/24 (neuropathic pain positive); Neuropathic Pain Symptom Inventory (NPSI) evoked pain subscore 7/10; Brush Allodynia Intensity Scale 8/10; Visual Analogue Scale (VAS) 9/10 during tactile stimulation and 4/10 at rest. Functional measures included Functional Independence Measure (FIM) 84/126, Berg Balance Scale 28/56, and Timed Up and Go (TUG) 32 seconds. Non-standardized assessment revealed positive cotton swab and dynamic brush tests, exaggerated withdrawal response, impaired temperature discrimination, and gait avoidance behaviour. The patient underwent a 10-week occupational therapy intervention (5 sessions per week) consisting of graded sensory desensitization, texture exposure hierarchy, mirror therapy, progressive weight-bearing, task-oriented gait retraining, pacing strategies, and pain neuroscience education.

Result: Post-intervention outcomes demonstrated clinically meaningful improvement. DN4 reduced to 3/10 and LANSS to 8/24. NPSI evoked pain decreased to 3/10 and Brush Allodynia Intensity to 3/10. VAS during touch reduced from 9/10 to 4/10, and resting pain from 4/10 to 2/10. Functional improvement was observed with FIM increasing to 110/126, Berg Balance Scale improving to 44/56, and TUG decreasing from 32 seconds to 18 seconds. The patient resumed supervised ambulation with improved tactile tolerance.

Conclusion: Structured occupational therapy incorporating graded sensory exposure and task-oriented mobility training effectively reduced mechanical allodynia and improved functional independence following thalamic stroke. Early neuro-sensory rehabilitation is essential in managing CPSP.

Keywords: Cutaneous allodynia; Thalamic stroke; Central post-stroke pain; Occupational therapy; Neurorehabilitation

Case study: Spastic diplegic cerebral palsy intervention Cuevas Medek exercise

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Background: Spastic Diplegic Cerebral Palsy (CP) is a non-progressive neurological disorder primarily affecting lower limb motor function, resulting from early brain injury. It leads to muscle stiffness (spasticity), impaired selective motor control, poor postural stability, and difficulties in balance and coordinated movements. Children commonly present with delayed developmental milestones, abnormal gait patterns such as scissoring, and reduced functional independence. These impairments significantly impact participation in daily activities and overall quality of life. Early therapeutic intervention, especially neurodevelopmental and task-oriented approaches, is essential to optimize neuroplasticity, improve functional outcomes, and enhance participation.

Objective: To evaluate the effectiveness of Cuevas Medek Exercise (CME) in improving postural control, dynamic balance, trunk stability, and functional mobility in a child with spastic diplegic CP. Additionally, to emphasize the role of early, intensive, and goal-directed occupational therapy intervention in pediatric neurorehabilitation.

Methodology: A single case study was conducted on a 5-year-old male child diagnosed with spastic diplegic CP. Detailed clinical assessment revealed increased muscle tone (Grade 3 on Modified Ashworth Scale), scissoring gait pattern, hip adduction with internal rotation, and impaired balance during static and dynamic activities. The child was classified as GMFCS Level III and MACS Level II, indicating moderate limitations in mobility and hand function.
A structured intervention program based on Cuevas Medek Exercise (CME) was implemented, focusing on: Eliciting automatic postural responses, Facilitating active movement against gravity, Improving trunk control and proximal stability, Enhancing balance and coordination

Result: Following the intervention, significant improvements were observed in postural control, trunk stability, and balance during transitional movements such as sit-to-stand and standing activities. The child demonstrated better weight shifting, improved alignment, and increased confidence in movement. Assisted walking ability improved with reduced scissoring pattern and better coordination. A decrease in muscle stiffness and enhanced functional mobility were also noted. Overall, the child showed gradual progress toward independence in daily activities
.

Conclusion: Cuevas Medek Exercise (CME) is an effective and dynamic therapeutic approach for children with spastic diplegic CP. It promotes motor control, enhances postural mechanisms, and improves functional independence through active participation. Early, intensive, and consistent therapy, combined with caregiver involvement, plays a crucial role in achieving optimal rehabilitation outcomes. This case highlights the importance of individualized, goal-oriented OT intervention in improving quality of life in children with cerebral palsy.

Keywords: Spastic Diplegic Cerebral Palsy, Cuevas Medek Exercise, Pediatric Rehabilitation, GMFCS, MACS, Occupational Therapy, Early Intervention, Motor Control, Postural Stability

Exploring The Integral Role of Occupational Therapy in Neonatal Intensive Care Unit: A Comprehensive Review of Literature

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Background: The Neonatal Intensive Care Unit (NICU) provides specialized care for medically fragile and premature infants, where early intervention is critical for optimal neurodevelopmental outcomes. Occupational therapy (OT) plays a vital role in NICU care by supporting neurobehavioral organization, sensory regulation, feeding and swallowing, postural control, sensory motor development, sensory modulation and sleep–wake regulation. Although current evidence supports the positive impact of OT in neonatal outcomes, further research is needed to standardize practices and strengthen evidence-based neonatal care.

Objective: The objective of this study is to comprehensively review and synthesize existing literature to examine the role and impact of OT interventions in the NICU. This review aims to understand how occupational therapy supports the neurodevelopment, functional performance, and physiological stability of medically fragile and premature infants, while also exploring its contribution to family-centred care and interdisciplinary collaboration within the NICU setting.

Methodology: An extensive and systematic literature search was conducted to identify relevant, peer-reviewed research, clinical guidelines, and evidence-based reports related to neonatal OT practice. Major academic and health science databases were explored, including PubMed, the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and ResearchGate. The selected literature was screened and reviewed to extract key findings related to intervention strategies, clinical outcomes, and interdisciplinary collaboration. Data were synthesized narratively to identify common themes, clinical implications, and existing gaps in practice.

Result: The literature review demonstrates the integral role of OT in the NICU, with consistent evidence of positive effects on neurobehavioral regulation, sensory modulation, postural control, and feeding readiness in preterm and medically fragile infants. Early occupational therapy interventions were associated with improved physiological stability, enhanced state regulation, and better tolerance to environmental stimuli. Studies also reported improved oral–motor coordination and safer feeding outcomes following occupational therapy involvement.

Conclusion: This comprehensive review affirms the integral role of occupational therapy in the Neonatal Intensive Care Unit as a cornerstone of developmentally supportive and family-centred neonatal care. OTs contribute uniquely to the early identification, sensory modulation and management of neurodevelopmental, sensory, and feeding challenges, directly influencing infant stability and functional outcomes during a critical period of brain development. Beyond measurable clinical gains, OT fosters parental confidence, supports early bonding, and humanizes care within a highly technological environment.

Keywords: Occupational therapy in Neonatal Intensive Care Unit, infants early interventions, rehabilitation in Neonatal Intensive Care Unit, Occupational therapists

Role of Occupational Therapy in Burn Rehabilitation: A Case Study

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Background: Burn injuries often result in pain, edema, contractures, hypertrophic scarring, and reduced functional use of the affected limb. These complications can limit independence in daily activities and delay return to work and social participation. Early and structured occupational therapy is essential to prevent secondary deformities and restore functional performance. This case study describes the rehabilitation process of a young adult male with deep partial-thickness burns over the right upper limb and anterior trunk, managed through a comprehensive occupational therapy program.

Objective: To examine the role and clinical outcomes of structured occupational therapy intervention in improving range of motion, functional ability, and independence in activities of daily living following burn injury.

Methodology: A 28-year-old male sustained 32% total body surface area burns due to flame exposure. Occupational therapy was initiated two weeks post skin grafting and continued for 12 weeks, five sessions per week. Standard assessment tools included goniometry for joint range of motion, the Functional Independence Measure (FIM) for daily activity performance, the Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire for upper limb function, and the Visual Analogue Scale (VAS) for pain. Non-standard assessments involved clinical observation of scar characteristics, task analysis of grooming and feeding activities, and patient-reported difficulty in work-related tasks. Intervention focused on edema control, positioning, static and dynamic splinting for contracture prevention, graded active and passive range of motion exercises, scar massage, pressure garment training, and task-oriented ADL retraining. A home program was reinforced to maintain gains.

Result: At baseline, shoulder flexion was limited to 60 degrees and elbow flexion to 70 degrees, with a FIM score of 82/126. The DASH score was 68, indicating marked disability, and VAS for pain was 7/10 during movement. After 12 weeks, shoulder flexion improved to 150 degrees and elbow flexion to 130 degrees. FIM increased to 118/126, reflecting near independence in self-care. The DASH score reduced to 22, and pain decreased to 3/10. The patient resumed light vocational tasks and independent personal care.

Conclusion: Targeted occupational therapy intervention supported recovery of joint mobility, functional independence, and work readiness in this case. Structured splinting, scar management, and task-specific training contributed to measurable improvement and facilitated reintegration into daily roles.

Keywords: Burn rehabilitation, Occupational therapy, Contracture prevention, Scar management, Functional independence, Upper limb recovery

Effectiveness of mindfulness on the quality of life of the older adults with mild cognitive impairment

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Aim: To determine the effectiveness of mindfulness intervention on the quality of life of the older adults with mild cognitive impairment.

Methods: The study employed a Quasi-experimental pre-post-test design. 40 participants aged 60 years and above were recruited to the study through convenience sampling and were divided into experimental (n = 20) and control group (n = 20). The experimental group participants received mindfulness intervention and control group participants received conventional occupational therapy intervention for 8 weeks. The Quality of Life –Alzheimer's disease (QOL-AD) participant version, Depression, Anxiety and Stress Scale – 21 (DASS-21) and Cognitive and Affective Mindfulness Scale- Revised (CAMS-R) were used to measure quality of life, emotional state of depression, anxiety and stress and cognitive and affective component of mindfulness.

Results: There was statistically significant difference in QOL-AD participant version and DASS-21 scores between pre-test and post-test scores in both experimental and control groups. There was statistically significant difference in CAMS-R scores between pre- and post-test scores in experimental group. Further analysis showed that there was moderate to strong negative relationship between quality of life and emotional state of depression, anxiety and stress in the pre-test and post-test scores in both experimental and control groups.

Conclusion: Mindfulness intervention was more effective for improving quality of life in older adults with mild cognitive impairment. There is a very strong to moderate negative relationship between quality of life and emotional state of depression, anxiety and stress in the older adults with mild cognitive impairment.

Key words: Mindfulness, Mild Cognitive Impairment, Quality of Life, Older Adults

Ageism directed to Older Adults among Healthcare Students: A scoping review

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According to WHO, the number and proportion of people aged 60 years and older is increasing. This unprecedented increase will accelerate in the coming decades, particularly in developing countries. Globally, 1 in 2 people are ageist against older adults. In the majority of incidents, ageism is shown to be associated with ill health and reduced well-being in older adults. It is now well-known that ageism affects older people's health and well-being through biases at structural, organizational, and provider levels, jeopardizing the delivery of fair and ethical healthcare.

Globally, the percentage of people over 60 will almost double, from 12% to 22% between 2015 and 2050. (World Health Organization, 2024), which means an increase in the older population contributing to an inclination towards ageist attitudes experienced by them. Ageism refers to the bias expressed through stereotypes (how people think), prejudice (how they feel), and discrimination (how people act) against others or oneself because of age. (World Health Organization, 2024). This article will focus on ageism towards older adults.

The concept of ageism has been theorized to be a relational phenomenon in which negative beliefs about getting older are internalized and then displayed, resulting in externalized ageism, creating a continuous cycle that perpetuates ageism among individuals (Gendron et al., 2018). Ageism directed toward others, or externalized ageism, happens when we make assumptions, judgments, hold prejudices, or discriminate against others based on their age. Internalized ageism occurs when predominantly negative perspectives about ageing influence our perceptions of getting older. (Gendron et al., 2023)

These stereotypical beliefs and the generalizations at various levels of society have been a barrier to the understanding of the diversity present among older adults (Stewart et al., 2005).Rising life expectancy and a growing number of dependent individuals have altered family dynamics (Guimaraes et al., 2024).This situation has been exceedingly worsened by ageism, which leads to undermined healthcare quality through structural barriers like limited access to services and biased decisions in treatment approaches, resulting in individual challenges such as reduced life span and increased health risks. (Guimarães et al., 2024)

While many older adults age well, they are at risk of declining independence, well-being, and the negative stereotypes associated with aging heightening reliance on specialized healthcare professionals. (Weissberger & Bergman, 2022) This older population will require greater healthcare, medical, and social services in the future.

To preserve and enhance the quality of care for older adults in these challenging situations, it is essential to train current healthcare students in recognizing and addressing ageism. It is crucial to provide training as the older adult population continues to expand.

Therefore, it is vital to enhance and promote positive attitudes in medical students towards older adults thereby establishing an improved quality of care in future clinical practices. Hence the need for the study.

Functional Independence Measure in Geriatric Rehabilitation: A Prospective Clinical Study with Defined Inclusion and Exclusion Criteria

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Background: Functional decline significantly contributes to morbidity, prolonged hospitalization, and institutionalization among older adults. Although the Functional Independence Measure (FIM) is widely used in rehabilitation settings, methodological rigor is essential for accurate interpretation of outcomes.

Objective: To evaluate functional outcomes in geriatric inpatients undergoing multidisciplinary rehabilitation using the Functional Independence Measure (FIM) under clearly defined inclusion and exclusion criteria.

Design: Prospective observational pre–post study.

Setting: Tertiary care rehabilitation unit, India.

Subjects: Sixty medically stable inpatients aged ≥60 years diagnosed with stroke, hip fracture, or musculoskeletal disorders.

Methods: FIM was administered within 72 hours of admission and discharge. Paired t-tests, 95% confidence intervals, and Cohen's d (pooled SD) were calculated.

Results: Mean FIM increased from 63.12 (SD = 11.84) at admission to 82.46 (SD = 13.92) at discharge. Mean functional gain was 19.34 points (95% CI [17.74, 20.94]). Improvement was statistically significant, $t(59) = 18.42$, $p < .001$. The pooled effect size was large (Cohen's $d = 1.50$).

Conclusion: Multidisciplinary inpatient rehabilitation produces substantial functional improvement in appropriately selected geriatric patients. FIM demonstrates strong responsiveness when applied under rigorous selection criteria.

Keywords: Functional Independence Measure, geriatric rehabilitation, stroke, hip fracture, multidisciplinary rehabilitation

Smart Home Technologies and Their Impact on Independence among Elderly Clients

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The global increase in the elderly population has created significant challenges for healthcare systems and social support structures. Older adults frequently experience chronic diseases, mobility limitations, and cognitive decline, which may reduce their ability to perform Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL). Smart home technologies have emerged as innovative solutions to support independent living among elderly individuals. These technologies include Ambient Assisted Living systems, sensor-based monitoring, fall detection devices, medication management tools, wearable health trackers, Internet of Things (IoT) systems, and telehealth services.

Research indicates that these technologies can reduce fall risks, improve medication adherence, support chronic disease management, and enhance functional independence. Occupational therapy frameworks such as the Model of Human Occupation (MOHO) and the Person–Environment–Occupation–Performance (PEOP) model provide theoretical foundations for integrating these technologies into elderly care. However, challenges including affordability, digital literacy, usability, and ethical concerns remain barriers to widespread adoption. Smart home technologies have the potential to significantly enhance independence among elderly clients when implemented through a client-centered and ethically responsible approach.(Igual et al., 2013; Vervloet et al., 2012)

Keywords: Smart Home Technologies; Independence; Elderly Clients; Aging in Place; Occupational Therapy; Ambient Assisted Living; Activities of Daily Living; Instrumental Activities of Daily Living; Internet of Things; Telehealth; Fall Prevention; Assistive Technology; Functional Autonomy

Impact of an occupational therapy-driven virtual reality approach on cognitive motor skills in older adults

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Background: Occupational therapy enhances functional independence by targeting cognitive-motor skills that are impaired by age-related declines in older adults, thereby affecting dual-task performance, gait, and daily activities. VR integration provides immersive, tailored environments for cognitive (attention, memory, executive function) and motor (coordination, balance, reaction time) training, promoting neuroplasticity through high-repetition dual-task training. Despite benefits, VR adoption is limited (12-31% of routine use among therapists due to cost/training barriers).

Objectives: The objectives of this study are to evaluate the effects of VR-based interventions on cognitive functions relative to traditional methods, assess their impact on motor performance in older adults, and provide guidance for occupational therapists in designing evidence-based virtual reality programs for cognitive–motor rehabilitation.

Methods: This experimental study will recruit 64 ambulatory older adults (aged 60+, MoCA 18-26, TUG < 10s) from Mahatma Gandhi Hospital and nearby areas in Jaipur, randomised into VR or control groups (n=32 each). Inclusion excludes severe neurological issues, VR contraindications like epilepsy, or cardiovascular instability. Outcomes include the Montreal Cognitive Assessment (MoCA) for cognition and the Timed Up and Go (TUG) under dual-task conditions for motor skills, with sessions lasting 45-60 minutes and held 2-3 times weekly.

Rationale and Significance**:** VR enables high-repetition dual-task training, compared to traditional therapy, promoting neuroplasticity, engagement, and real-world transfer. As VR adoption grows but evidence in community-dwelling older adult's lags, this human study fills gaps for clinical integration in India, supporting preventive care and therapist training

Expected Conclusion: OT-driven VR will demonstrate superior gains in cognitive-motor outcomes, high adherence, and feasibility, supporting its preventive role in clinical/community settings and evidence-based therapist protocols.

Redefining Multidisciplinary Care: Evidence-Based Approaches for Advanced Healthcare and Rehabilitation

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Advanced healthcare and rehabilitation increasingly require coordinated multidisciplinary approaches to address complex, chronic, and disabling conditions.

The objective of this paper was to review evidence-based multidisciplinary care (MDC) models, with specific emphasis on Indian studies relevant to healthcare and rehabilitation sciences.

A narrative review of Indian and global literature was conducted using PubMed, Scopus, and Google Scholar. Studies focusing on multidisciplinary healthcare, rehabilitation, chronic disease management, and integrated care in Indian settings were included.

Indian studies demonstrate that MDC improves clinical outcomes, functional recovery, patient adherence, and continuity of care. Lifestyle-based multidisciplinary interventions reduced progression to diabetes by nearly 30%, while integrated PCOS and mental health models enhanced comorbidity detection and service utilization. Rehabilitation-oriented team models improved functional outcomes and long-term self-management.

Multidisciplinary care represents an effective and scalable strategy for advanced healthcare and rehabilitation in India. Strengthening interprofessional collaboration, digital integration, and community-based rehabilitation is essential for sustainable impact.

Keywords: Multidisciplinary care, Rehabilitation sciences, Integrated healthcare, Indian studies, Evidence-based practice

To establish the psychometric properties of "Wheelchair Use Confidence Scale for manual wheelchair users" (WheelCon-M, Version 3.0) in Indian population with Spinal Cord Injury.

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Study Design: Methodological Design

Participants: 50 Subjects with at least 6 months of manual wheelchair experience.

Methods: The study was carried out in three phases: the first was estimation of content validity of WheelCon-M comprising both qualitative and quantitative methods, the second phase was to establish the internal consistency reliability which was done on 20 subject with SCI, the third was to establish the test-retest reliability, done on 30 subjects in which the scale was re-administered after one week gap in order to collect data for test-retest reliability.

Results: Content validation of WheelCon-M (Version 3.0) resulted with retention of 35 items of the scale. WheelCon-M has excellent internal consistency reliability (Cronbach's alpha=0.943) and excellent test-retest reliability (average measures=0.948).

Conclusion: The "Wheelchair Use Confidence Scale for Manual Wheelchair Users (WheelCon-M, Version 3.0)" is resulted in 35 items and has excellent internal consistency reliability and test-retest reliability in Indian population with SCI.

Keywords: Confidence, Wheelchair, Mobility, Spinal Cord Injury, Assistive Technology, Content Validity, Internal Consistency, Test-retest Reliability

Recovery of Upper Extremity After Stroke Is Slower Compared to Lower Extremity: A Systematic Review

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Background: Stroke is a leading cause of long-term disability worldwide. Clinical observations suggest that upper extremity (UE) recovery is slower and less complete than lower extremity (LE) recovery, yet direct comparative evidence remains limited.

Objective: To systematically evaluate whether motor recovery of the upper extremity is slower compared to the lower extremity following stroke.

Methods: This systematic review was conducted in accordance with PRISMA 2020 guidelines. Electronic databases (MEDLINE, Embase, Cochrane CENTRAL, and Web of Science) were searched from inception to January 2026. Studies comparing UE and LE recovery within the same adult stroke cohorts using validated motor outcome measures were included. Methodological quality was assessed using the Newcastle–Ottawa Scale.

Results: Sixteen studies met inclusion criteria. When baseline severity was controlled, proportional motor recovery was similar between UE and LE. However, functional outcomes more frequently favoured LE recovery. UE recovery showed greater dependence on corticospinal tract integrity and lesion characteristics, whereas LE recovery appeared to involve broader bilateral motor networks. Greater inter-individual variability was observed in UE recovery.

Conclusion: Although proportional impairment recovery may be comparable between extremities, Functional restoration of the upper limb generally occurs more slowly and remains less complete than that of the lower limb. These findings support the need for targeted and intensive upper limb rehabilitation strategies to optimize post-stroke motor outcomes.

Keywords: Stroke; Upper extremity; Lower extremity; Motor recovery; Neurorehabilitation; Fugl-Meyer Assessment

The Effect of Frenkel Exercise and Music Therapy On Gait in Post-Stroke Patients

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Keywords: Stroke Rehabilitation, Gait Performance, Frenkel Exercises, Rhythmic Auditory Stimulation, Music Therapy, Neurorehabilitation, Motor Coordination, Functional Mobility

Background: Stroke is the leading cause of morbidity and mortality and long-term disability of adults worldwide, imposing significant medical, socio-economic and rehabilitation challenges. Post-stroke impairment significantly impairs motor function, resulting in reduced coordination, impaired voluntary movements, and decreased postural control. Such impairment leads to limitations in independent mobility and participation in activities of daily living. Additionally, compromised balance with stroke often increases the risk of falls. Previous studies demonstrated that Frenkel Exercise and music-based rhythmic auditory stimulation (RAS) improve gait and balance in post-stroke individuals independently; however, the potential synergistic effect of combining these interventions remains underexplored. Therefore, the objective of this present experimental study is to synthesise an admissible therapy combining Frenkel exercise and Music (RAS).

Methods: A total of 75 subjects were screened; 66 met the inclusion criteria and were allocated to two groups by systematic random sampling, with 33 participants in each group. Group A received conventional therapy along with Frenkel exercise, while Group B received a combination of Frenkel exercise and music-based RAS. These interventions were administered over 8 weeks, 5 days per week, with each session lasting 30 minutes. The assessment was taken at baseline, i.e., prior to intervention (Pre-test), and at the end of the protocol, i.e., post-intervention, using the Rivermead Visual Gait Assessment form as the outcome measure in this study.

Result: Gait performance was assessed using the Rivermead Visual Gait Assessment (RVGA) at baseline and after the intervention. In the control group, mean RVGA scores decreased from **42.2 (SD 1.82)** at baseline to **41.0 (SD 1.80)** after intervention. In the experimental group, mean scores decreased from **44.36 (SD 1.73)** to **41.28 (SD 2.17)**.

Within-group analysis using the **Wilcoxon signed-rank test show**ed a statistically significant change in RVGA scores (**Z = −4.43, p < 0.001**). Between-group comparison using the **Mann–Whitney U test** showed greater improvement in the experimental group receiving Frenkel exercises with music therapy (mean change **3.80 (SD 1.07)**) compared with the control group receiving Frenkel exercises with conventional therapy (mean change **1.20 (SD 0.50)**).

Conclusion: Frenkel exercises combined with music therapy were associated with greater improvement in gait performance than Frenkel exercises alone with conventional therapy. These findings suggest that incorporating rhythmic auditory stimulation into rehabilitation programmes may enhance gait outcomes in individuals after stroke.

Effectiveness of Modified Constraint-Induced Movement Therapy in Improving Upper Extremity and Hand Function in Stroke Patients: An Occupational Therapy Perspective

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Stroke is one of the leading causes of long-term disability worldwide and often results in significant impairment of upper extremity and hand function. These impairments limit independence in activities of daily living and reduce quality of life. Occupational therapy plays a crucial role in restoring functional use of the affected limb. One evidence-based intervention used in neurorehabilitation is Modified Constraint-Induced Movement Therapy (mCIMT), which is designed to overcome learned non-use and promote active use of the affected upper limb following Stroke.

The aim of this study was to evaluate the effectiveness of modified constraint-induced movement therapy in improving upper extremity and hand function among stroke patients undergoing occupational therapy rehabilitation. A pre-experimental study design was used with a sample of stroke patients presenting with mild to moderate upper limb impairment. Participants received mCIMT intervention in which the unaffected upper limb was restrained for a specified period while the affected limb was engaged in repetitive, task-oriented functional activities. The intervention was administered for several hours per day over a structured therapy program lasting multiple weeks.

Outcome measures included standardized assessments such as the Fugl-Meyer Assessment for Upper Extremity and the Wolf Motor Function Test to evaluate changes in motor performance and functional ability of the upper extremity. Pre- and post-intervention scores were analysed to determine improvements in motor recovery, hand dexterity, and functional task performance.

The findings indicated significant improvements in upper extremity motor function and hand use following the mCIMT intervention. Participants demonstrated increased voluntary movement, improved coordination, and greater ability to perform functional tasks with the affected limb. These results support the role of mCIMT in enhancing motor recovery through mechanisms related to Neuroplasticity.

In conclusion, modified constraint-induced movement therapy is an effective and practical occupational therapy intervention for improving upper extremity and hand function in stroke rehabilitation. Its incorporation into clinical practice may contribute

to improved functional independence and better rehabilitation outcomes for stroke survivors.

Impact of Occupational Balance on Emotional Regulation Among Working Healthcare Professionals.

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Background: Healthcare professionals often experience heavy workloads, shift duties, and emotionally challenging situations, which increase their risk of stress, burnout, anxiety, and depression. Occupational balance having a satisfying distribution of time and energy across work, self-care, family, and leisure is linked to better health and psychological well-being. However, most studies focus on burnout or work–life balance rather than measuring occupational balance with validated tools or exploring its direct impact on emotional well-being among healthcare workers. Understanding this relationship is essential for developing effective individual and organizational strategies to support mental health and maintain high-quality patient care.

Objective-

1. To measure the level of occupational balance among working healthcare professionals using the Occupational Balance Questionnaire (OBQ-11).
2. To measure the level of emotional regulation among working healthcare professionals using the difficulty in emotion regulation scale (DERS-36)
3. To establish the relationship between occupational balance and emotional regulation.

Research Methodology: The study will employ a cross-sectional observational research design. The sample will be drawn using simple random sampling from healthcare professionals working at Mahatma Gandhi Hospital, Jaipur. A total sample of 354 participants will be recruited based on predefined criteria. The inclusion criteria consist of healthcare professionals who are employed either full-time at Mahatma Gandhi College and Hospital, including both males and females. Individuals who withdraw consent or have any chronic comorbid physical or neurological conditions will be excluded from the study.

Expected Result: It is anticipated that lower occupational balance will be significantly associated with greater difficulty in emotional regulation. Participants with high workload and irregular duty schedules are expected to show poorer occupational balance, which may correlate with higher DERS scores.

Conclusion: Understanding the relationship between occupational balance and emotional regulation. Enhancing occupational balance may serve as a protective factor against emotional dysregulation, ultimately improving job satisfaction and quality of patient care.

Keyword: Occupational balance, Emotional regulation, healthcare professional

Impact of an occupational therapy-driven mobile cognitive application for managing chemo-brain patient symptoms in glioma survivors

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Background: Glioma survivors commonly experience cancer-related cognitive impairment, widely known as "chemo-brain," characterised by deficits in memory, attention, processing speed, and executive functioning. These cognitive changes can significantly hinder independence, occupational performance, and quality of life. Conventional cognitive rehabilitation is often limited by accessibility, continuity, and resource constraints. Mobile health (health) interventions, particularly those grounded in occupational therapy (OT) principles, offer a promising avenue for delivering personalised, strategy-based cognitive support in a flexible and scalable manner.
Objective: To evaluate the effectiveness of mobile app-based intervention by measuring changes in cognitive functions, attention, memory, processing speed, and executive functions before and after the intervention. It also aims to assess its impact on performance in everyday activities such as medication management, financial tasks, and daily routine planning, as well as to evaluate improvements in participation and health-related quality of life following use of the mobile cognitive application.
Methods: A single-group pre-post interventional design was used. Adult glioma survivors who had completed chemotherapy and reported cognitive challenges were recruited through purposive sampling. Participants engaged in a structured 6-week mobile cognitive intervention guided by OT principles, integrating metacognitive strategy training, attention and memory tasks, routine-building, psychoeducation, and occupation-focused exercises simulating daily functional activities. Outcomes were assessed at baseline and after the intervention using validated instruments, including the Functional Assessment of Cancer Therapy-Cognitive Function (FACT-COG) for cognitive symptoms, Karnofsky Performance Status (KPS) for functional independence, and an OT Participation Checklist for engagement in daily occupation.
Results: Participants demonstrated meaningful improvement across multiple cognitive domains. Fact-cog scores reflected reduced perceived cognitive impairment, improved cognitive abilities, and decreased cognitive fatigue. Functional independence as measured by KPS showed a positive shift. Participants also reported greater participation in daily routines, improved concentration during goal-directed tasks, and increased confidence in managing cognitive difficulties.
Conclusion: The OT-driven mobile cognitive application showed promising feasibility and preliminary effectiveness in mitigating chemo-brain symptoms and improving

daily participation among glioma survivors. This digital, occupation-centred approach may be a valuable adjunct to traditional ot services. Further randomised trials with larger samples are recommended.

Keywords: occupational therapy, chemo-brain, glioma survivors, mobile application, cognitive rehabilitation, mhealth, cancer rehabilitation

Play-based approaches to enhance social participation in children with Autism Spectrum Disorder

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Background: Children with Autism Spectrum Disorder (ASD) experience challenges in social interaction, communication, and daily life participation, limiting peer relationships, school engagement, and development. Involvement in interpersonal situations like reciprocal friendships, peer engagement, and interactions in school, family, and community is crucial but often compromised in ASD. Prior studies indicate reduced initiation of interactions, joining group play, and responding to social cues, leading to isolation. Play-based therapy is recommended to enhance social skills. The present study evaluated the effectiveness of a play-based therapy protocol in improving social participation among children aged 5–9 years with ASD.

Methods: A pre-post interventional study was employed using convenience sampling involving 50 children aged 5–9 years diagnosed with ASD; of these, 8 participants dropped out, resulting in a final sample of 42 completers. The participants were assigned to 6 groups of 7 children each and received a 10-week structured group therapy program consisting of 3 sessions per week, each lasting 60 minutes. The intervention activities included gesture imitation, symbolic play, flashcard interactions, musical chairs, cooperative games, and bowling to foster social interaction. The primary outcome measure was the Child and Adolescent Scale of Participation (CASP) at pre- and post-intervention. Supplementary data captured attention span, screen time, and parent-reported challenges related to daily routine and social participation.

Results: Of 42 participants (32 males, 10 females; mean age 6.8 years), mean CASP scores rose from 23.50 (baseline) to 41.90 (post-intervention; mean difference 18.40; paired t-test: $t=19.67$, $p<0.001$). Domain improvements: home (7.80 to 13.10), school (7.20 to 13.80), community (8.50 to 15.00). Children showed better group engagement, social cue responsiveness, turn-taking, interaction initiation, and peer sharing. Additional gains included longer attention spans, improved gaze/shared attention, reduced screen time (3.5 to 1.8 hours/day), and parent-noted routine management, responsiveness, and command-following.

Conclusion: Play-based group therapy significantly boosts social participation and attention, and reduces screen dependency in children with ASD, underscoring its value in occupational therapy programs.

Keywords: Autism Spectrum Disorder, social participation, play-based intervention, group therapy, CASP scale

Sensory Processing versus Behavioural Manifestations in Autism Spectrum Disorder: A Comprehensive Review

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Background: Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by challenges in communication, social interaction, and adaptive functioning. Increasing evidence highlights atypical sensory processing as a core feature of ASD, often underlying behaviors that are misinterpreted as purely behavioural issues. Differentiating between sensory-driven responses and behavioural manifestations is critical for accurate assessment and intervention.
Objective: This review aims to clarify the conceptual distinction between sensory processing differences and behavioural manifestations in children with ASD, examine their interrelationship, and explore implications for occupational therapy, education, and clinical practice.
Methodology: A comprehensive literature review was conducted using scholarly articles, standardized assessment tools, and neurophysiological studies published up to 2025. The review synthesizes theoretical and empirical evidence on sensory processing patterns, behavioural characteristics, and diagnostic frameworks in ASD. Emphasis was placed on conceptual analysis and clinical interpretation rather than statistical evaluation.
Results: The review identified a strong association between sensory processing differences and behavioural manifestations in ASD. Patterns such as hyper-responsiveness, hypo-responsiveness, and sensory seeking were linked to behaviours including emotional dysregulation, repetitive actions, and social withdrawal. Findings indicate that many behaviours serve as adaptive responses to sensory modulation difficulties. Interventions tailored to individual sensory profiles, including sensory integration strategies and environmental modifications, demonstrated improvements in behaviour, engagement, and functional participation.
Conclusion: Sensory processing and behavioural manifestations in ASD are distinct yet interrelated domains that require integrated assessment and intervention.

Misinterpretation of sensory-driven behaviours may lead to ineffective management strategies. A multidisciplinary, individualized approach combining sensory and behavioural frameworks enhances clinical outcomes and promotes meaningful participation in daily activities. Further research is recommended to develop standardized protocols and explore neurobiological mechanisms underlying sensory–behavioural interactions.

Addressing Cultural Gaps in ICF-Based Assessment of Play Behaviour in Autism Spectrum Disorder: An Indian Perspective

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Background: The International Classification of Functioning, Disability and Health (ICF) provide a biopsychosocial framework for assessing play behaviors in autism spectrum disorder (ASD). However, cultural and contextual gaps, particularly in India, limit its application in diverse clinical and research settings.

Objectives: This scoping review identifies gaps in ICF-based assessment of play behaviors in ASD within the Indian context with a particular emphasis on cultural limitations. It aims to inform target research, clinical practice and policy development in multicultural Settings.
Methods: Following PRISMA-ScR guidelines, we searched PubMed, Scopus, Google Scholar for peer-reviewed studies from 2001–2024. From 1,241 records, 24 studies meeting inclusion criteria underwent thematic analysis prioritizing Indian relevant contexts.

Results: Seven key gaps emerged in the Indian context: (1) poor representation of culturally nuanced play symptoms in ASD (2) misalignment with DSM-5/ICD-11 amid Indian diagnostic variations (3) lack of standardized Hindi/regional-language play assessment tools (4) insufficient adaptation to Indian cultural play norms (e.g., communal vs. solitary play) (5) neglect of region-specific comorbidities like malnutrition (6) low ecological validity in urban rural Indian settings and (7) barriers to interprofessional collaboration in under resourced Indian teams.

Conclusions: ICF modifications are needed to address cultural gaps in assessing play behaviors for ASD in India. Priority actions include developing India-specific ASD Core Sets for play, validated cultural tools, enhanced multicultural training, and interprofessional guidelines. These steps will improve clinical outcomes and support neurodiverse children in Indian play environments.

Keywords: Autism Spectrum Disorder, ICF, Play Behavior Assessment, Indian Cultural Gaps, Biopsychosocial Framework, Occupational Therapy, Scoping Review

Impact Of Occupational Therapy-Led Tactile Stimulation on Early Feeding Skills and Physiological Stability in Preterm Infants in a Neonatal Intensive Care

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Background: Preterm infants commonly experience difficulty achieving effective oral feeding because their neurological maturity and oral-motor coordination (sucking, swallowing, and breathing) are often underdeveloped, leading to prolonged reliance on tube feeding in neonatal care. Interventions involving tactile or oral-motor stimulation, such as gentle stroking/stimulation of oral structures (lips, tongue, gums), non-nutritive sucking (NNS), and sometimes combined tactile-kinesthetic or respiratory support, have been increasingly studied as supportive strategies to promote feeding readiness and improve feeding performance in this vulnerable population.

Objectives: The study aims to determine the impact of occupational therapy–led tactile stimulation on the progression of feeding skills in preterm infants. It also seeks to evaluate the effect of occupational therapy–led tactile stimulation on physiological stability in preterm infants.

Methodology: This study will adopt a prospective randomized controlled trial (RCT) design, comparing an intervention group receiving tactile stimulation with a control group receiving standard care. The participants will include preterm infants admitted to the NICU or neonatal care unit. The intervention will consist of a structured tactile stimulation protocol administered by trained occupational or neonatal therapists. This intervention will begin once the infants are medically stable and will continue until the achievement of full oral feeding or until discharge. The intervention will be conducted daily, with sessions lasting 10–15 minutes. Follow-up will be carried out from the initiation of the intervention until discharge, with additional follow-up if feasible.

Conclusion: Early tactile stimulation shows promising benefits in improving feeding responses and supporting developmental outcomes in preterm infants. The study aims to analyze the importance of oral feeding performance, including improved suck–swallow coordination, higher feeding efficiency, reduced feeding intolerance, and stable physiological parameters during feeding.

Impact of Visual Perceptual Difficulties on Reading Performance in School-going Children

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Background: Reading difficulties in children are often attributed to linguistic deficits, yet visual-perceptual skills also play a critical role. Children with normal visual acuity may still struggle with visual discrimination, figure-ground perception, or visual memory, leading to poor academic performance. Prior studies highlight the prevalence of visual-perceptual deficits and their strong association with reading underachievement.

Objective: The aim of this study is to determine the impact of visual perceptual difficulties on reading performance in school-going children. The objectives are to examine the relationship between reading performance outcomes and visual-perceptual components and to determine the prevalence of visual-perceptual difficulties within the study population.

Methodology: A cross-sectional observational study will be conducted among 327 children in grades 2–5 with normal or corrected vision. Reading performance will be assessed using the Early Grade Reading Assessment (EGRA), and visual-perceptual skills will be evaluated using the Test of Visual Perceptual Skills–Fourth Edition (TVPS-4). Correlations between Visual Perceptual subdomains (discrimination, memory, closure) and reading outcomes (fluency, comprehension) will be analysed.

Anticipated Results: It is expected that children with visual-perceptual difficulties will demonstrate significantly lower reading fluency and comprehension scores than peers with intact visual-perceptual skills. Specific deficits, such as figure-ground perception and visual memory, are expected to show the strongest associations with poor reading outcomes.

Conclusion: This study aims to establish the overlooked link between visual perceptual deficits and reading performance. Findings will emphasise the need for comprehensive visual-perceptual screening in schools, enabling targeted interventions that go beyond traditional linguistic approaches to improve literacy and academic success.

Keywords: Visual perceptual skills; Reading performance; School-aged children: Academic achievement; TVPS-4; EGRA

Impact of palmar reflex retention on handwriting performance in school-aged children

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Palmar grasp reflex is a primitive reflex elicited when pressure is applied to the palm, causing involuntary flexion of the fingers. Normally, it integrates at 4–6 months of age. Palmar reflex retention is the persistence of the palmar grasp reflex beyond the typical developmental age, leading to involuntary finger flexion or difficulty with finger isolation during voluntary hand movements. Handwriting performance is the ability to produce legible, efficient, and age-appropriate written output, including letter formation, spacing, alignment, writing speed, pencil grasp, and pressure control.

Background

The palmar grasp reflex typically integrates by 4–6 months of age. When it persists beyond the developmental period, it may interfere with fine motor control, finger isolation, pencil grasp, and handwriting performance. Despite its clinical relevance, the effect of retained palmar reflex on handwriting among school-aged children remains under-explored.

Objectives: The aim of this study is to determine the impact of retained palmar reflex on handwriting performance in school-aged children. Specifically, it seeks to identify the determinants of handwriting performance among children with and without retained palmar reflex and to establish the relationship between palmar reflex retention and hand performance in children.

Methodology: A cross-sectional observational study will be conducted on school-going children. 250 children aged 8-12 years will be selected to check palmar reflex retention using purposive sampling. Palmar reflex retention will be assessed using the Standard Palmar Reflex Elicitation Test. Handwriting performance will be measured through the Handwriting Legibility Scale (HLS) and a timed Handwriting Speed Assessment. Data will be analyzed to determine the association between reflex retention and handwriting outcomes.

Results: Children with retained palmar reflex will be expected to show decreased handwriting legibility, reduced writing speed, and increased writing fatigue compared to children without retained reflexes.

Conclusion: Retained palmar reflex negatively influences handwriting performance in school-going children, highlighting the need for early screening and occupational therapy intervention.

Keywords: Palmar reflex, palmar reflex retention, handwriting performance, school going children

Impact of promoting therapeutic play in self-confidence and social interaction among children with hematologic cancer

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Background: Therapeutic Play is a structured, purposeful intervention led by a trained professional that uses play modalities to help children cope with stress, trauma, and medical procedures, promoting emotional expression and mastery. Self-confidence is a child's belief in their own abilities, while Social Interaction refers to active, reciprocal communication and relationship-building with peers and caregivers. Children with hematologic cancer often face psychosocial challenges due to treatment isolation and physical changes.
Hematologic cancer and its intensive treatment regimens can lead to prolonged hospitalization, physical symptoms, and body image concerns, often resulting in decreased self- confidence and withdrawal from social activities. While the physiological effects of treatment are prioritized, the psychosocial well-being of these children is critical for long-term recovery. Therapeutic play is recognized as a supportive measure, yet its specific impact on quantitative measures of self-confidence and social interaction in this population remains to be fully established.

Aim & Objectives: To determine the impact of a structured therapeutic play program on enhancing self-confidence and improving social interaction skills in school-aged children diagnosed with hematologic cancer. The study objectives is seeks to observe the impact of therapeutic play on self-confidence in paediatric oncology patients and to evaluate its influence on social interaction among children receiving chemotherapy.

Methodology: A quasi-experimental, pre-test-post-test design will be utilized. 60 children aged 4-12 years undergoing treatment for hematologic cancer will be selected using purposive sampling and assigned to an intervention or control group. The intervention group will participate in a four- week structured therapeutic play program. Self-confidence and Social interaction will be measured using the Strengths and Difficulties Questionnaire. Data will be analyzed using paired t-tests and Analysis of Variance (ANOVA) to determine the intervention's efficacy.

Results: Children in the intervention group are expected to show a statistically significant improvement in self-confidence scores and demonstrate enhanced frequency and quality of positive social interactions compared to the control group.

Conclusion: Promoting therapeutic play positively influences the psychosocial adjustment of children with hematologic cancer by significantly boosting self-confidence and improving social interaction skills, thereby supporting holistic pediatric oncology care.

Keywords: Therapeutic play, self-confidence, social interaction, hematologic cancer, pediatric oncology, psychosocial adjustment

Therapeutic Potential of Gluten- and Casein-Free Diet in Managing Gastrointestinal Symptoms in Pediatric Autism Spectrum Disorder

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The study here focuses on understanding the impact of gluten- and casein-free diets on children having Autism Spectrum Disorder (ASD). As the children under this neurodevelopmental condition suffer from a range of gastrointestinal (GI) disturbances like diarrhoea, constipation, bloating, and abdominal pain, the understanding about the direct impact of such diets can help generate successful interventions in the future. A quantitative research design has been used where children diagnosed with ASD and between the age group of 3 to 15 years were considered. The study includes an experimental design where 50 children belonging to the geographical region of Jaipur, Rajasthan were analysed over a duration of 3 months. Data were collected using a structured caregiver-reported questionnaire assessing the frequency and severity of key gastrointestinal symptoms before and after the implementation of the diet. Statistical analyses, including paired sample tests and descriptive measures, were conducted to examine changes in symptom patterns.

The findings suggested a significant reduction in the severity and frequency of gastrointestinal symptoms following adherence to the GFCF diet with the p-value in the paired sample t-test being less than 0.05. Notable improvements were observed in conditions such as diarrhoea, constipation, abdominal pain, and bloating, suggesting enhanced digestive comfort and overall health among participants. Based on the results, the study has provided a set of dietary strategies as complementary interventions in ASD management. However, it also highlights the need for individualized dietary planning and medical supervision to ensure nutritional adequacy. Future research is recommended to explore long-term effects, larger sample populations, and potential links between GI symptom improvement and behavioral outcomes in ASD.

Keywords: Gluten, Casein, Gastrointestinal, Autism, Children

Monk Fruit Sweetened Traditional Indian Desserts: A Multidisciplinary Approach to Diabetes Prevention

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The increasing number of people with diabetes highlights the need for healthier eating habits that are both practical and culturally acceptable. In India traditional desserts are an important part of daily life and celebrations but they are typically high in refined sugar which can raise blood sugar levels and increase the risk of diabetes. At the same time completely avoiding sweets can be difficult due to strong sugar cravings and cultural preferences. This study focuses on providing a healthier alternative by using monk fruit (Siraitia grosvenorii), a natural sweetener that does not significantly affect blood sugar while still satisfying the desire for sweets.

Popular Indian desserts such as rabri, halwa and jalebi were prepared using monk fruit instead of regular sugar. The aim was to evaluate whether these modified desserts could help manage blood sugar levels while also fulfilling sugar cravings. Participants feedback on taste, texture and overall satisfaction was collected using a standard rating scale, 9 point hedonic scale for sensory evaluation and 5 point Likert scale for sugar craving satisfaction.

The results showed that desserts made with monk fruit made participants feel satisfied with the sweetness indicating that these desserts effectively addressed sugar cravings without compromising health. Most participants also found the taste and texture enjoyable suggesting strong acceptability.

This study concludes that traditional sweets cab both support diabetes prevention and satisfy cravings. Such alternatives can help individuals maintain balanced diets without feeling deprived encouraging long term healthy eating habits and improving overall quality of life.

Keywords: Diabetes Prevention, Monk Fruit Sweetener, Sugar Cravings, Traditional Indian Desserts, Blood Sugar Control, Healthy Alternatives.

Dietary Inflammatory Index and Nutritional Intake of Children Diagnosed with Hashimoto's Thyroiditis

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Background: Inflammation plays a significant role in thyroid dysfunction, particularly in patients with Hashimoto's thyroiditis. Dietary and lifestyle factors are important in the management of thyroid disorders. However, limited evidence exists in India on the inflammatory potential of diet among children with Hashimoto's thyroiditis.

Objectives: To evaluate the association between the Dietary Inflammatory Index (DII) and nutritional intake among children and adolescents diagnosed with Hashimoto's thyroiditis.

Methods: A cross-sectional comparative study was conducted in the Pediatric Outpatient Department of Lok Nayak Hospital, New Delhi, among children aged 5–15 years. Dietary intake was assessed using a 24-hour dietary recall, and DII scores were calculated using the method proposed by Shivappa et al. (2014). Statistical analysis was performed using STATA version 14.

Results: A total of 97 participants were included, comprising 35 cases (Hashimoto's thyroiditis) and 62 controls. The mean (SD) age of cases was 11.2 (1.8) years. A significant negative correlation was observed between macro- and micronutrient intake and DII scores ($p < 0.05$), indicating that lower nutrient intake was associated with higher (more pro-inflammatory) DII scores. The mean (SD) DII score was higher among cases [3.43 (1.29)] compared to controls [2.72 (1.15)], with a statistically significant difference ($p = 0.003$). Additionally, a significant negative correlation was observed between fT3 levels and dietary zinc intake ($r = -0.347$, $p = 0.041$).

Conclusion: Children with Hashimoto's thyroiditis exhibited higher dietary inflammatory potential and poorer nutritional intake. These findings highlight the need for targeted dietary interventions to reduce inflammation and improve nutritional status in this population.

Keywords: Dietary inflammatory index, Hashimoto's thyroiditis, Nutrition, Paediatrics

Role of Digital Health Interventions in PCOS Management: Advancing Multidisciplinary Care and Rehabilitation in Women's Health

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Introduction: Polycystic Ovary Syndrome (PCOS) is a multifaceted endocrine disorder marked by metabolic dysfunction, reproductive irregularities, and psychological distress. Women with PCOS struggles to balance healthcare needs with personal and social obligations. Digital health platforms have emerged as flexible solutions within advanced healthcare systems to encourage sustained engagement and self-management in chronic illnesses that require routine monitoring.

Aim: To evaluate the effectiveness of digital intervention in enhancing metabolic, reproductive, and psychological outcomes in women of reproductive age with PCOS.

Methodology: This systematic review followed the PRISMA principles. Articles published between 2015 and 2025 were found by searching PubMed, ResearchGate, and Google Scholar for keywords like PCOS, digital health, and lifestyle management. Studies were evaluated according to eligibility criteria, which included a diagnosis of PCOS and the utilization of digital modalities such as mobile applications, digital wearable devices, or technology-assisted programs. A number of studies were screened, with 18 meeting the requirements.

Results: The result revealed that digital interventions were associated with a 3 to 7% reduction in body weight and a decrease of 1.5 to 3.5 kg per square metre in body mass index during a period of 12 to 24 weeks. A reduction of 15 to 25% in HOMA IR levels and a decrease of 10 to 18% in fasting insulin levels indicate an improvement in insulin resistance. Menstrual cycle regularity increased in 60 to 75% of patients, whereas ovulatory function was boosted in 40 to 55 %. Behavioural outcomes demonstrated a 30 to 50% enhancement in adherence to lifestyle practices, along with a 10 to 20% reduction in reported stress levels.

Conclusion: Digital health interventions validate measurable effectiveness in supporting the multidimensional management of PCOS. By improving adherence, metabolic parameters, and psychological outcomes, these approaches offer a practical addition to long term care strategies.

However, variability in study design, sample size, and intervention duration highlights the need for further large scale and long term investigations

Keywords: Polycystic Ovary Syndrome (PCOS); Digital Health Interventions; Lifestyle Modification; Wearable Devices; Metabolic Outcomes; Reproductive Health; Psychological distress; Multidisciplinary Care; Women's Health

Assessment of Nutritional Status, Dietary Patterns, and Lifestyle Factors in Hospitalized Acute Pancreatitis (AP) Patients: A Cross-Sectional Study at North Indian Hospital

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Background: Acute Pancreatitis (AP) is the inflammation of pancreas, marked by metabolic and digestive function disruption, thus requiring hospitalization.

Aim: This study aimed to assess the demographic, lifestyle, nutritional, and dietary characteristics of hospitalized AP patients in a North Indian hospital.

Methods: A cross-sectional study was conducted among 37 hospitalized AP patients aged 18-60years. The nutritional status has been assessed using BMI and the CONUT score. 24-hour dietary recall, Food Frequency Questionnaire and Knowledge, Attitudes, and Practices has been specially designed for the study.

Results: Among 37 AP patients, 70% were male. Overweight was reported in most males (38.4%) whereas females had both overweight and obese class I BMI (each 18%). Biochemical findings had shown elevated serum amylase, lipase, CRP and liver enzymes. The CONUT score has revealed that around 73% were at risk of malnutrition. Common comorbidities included diabetes and hypertension. Food intake data showed inadequacy in milk, cereals, green leafy vegetables, and visible fats while pulses were consumed adequately. Severe AP cases have shown the lowest intake of energy (1393±82.5Kcal), protein and carbohydrates while moderate AP has lowest intake of fats and calcium. Average energy adequacy (M:65.6% &F:76.6%), protein and calcium adequacy were low. However, fat intake exceeded both genders. Before hospitalization, wheat and root vegetables were staples. Saturated fats and tea were common. Over 50% of patients demonstrated average nutritional knowledge, only 16.2% had good dietary practices. 72% had never consulted a dietitian.

Conclusion: Most patients were overweight, middle-aged males with comorbidities like diabetes and hypertension. Dietary intake was inadequate, while fat intake was excessive. Poor pre-hospital diets and lack of nutritional counseling were common. The study showed the need for routine nutritional assessment, individualized dietary planning and for the management of structured education.

Nutritional Status and Dietary Adequacy of Pregnant Women Attending Rural Antenatal Clinics: Implications for Strengthening Maternal Health

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Background: Adequate maternal nutrition is critical for successful pregnancy outcomes and the long-term health of both mother and fetus. However, nutritional deficiency among pregnant women in rural areas remains a barrier to maternal healthcare delivery in India.

Objective: To investigate the nutritional status and dietary adequacy of pregnant women attending rural antenatal clinics, as well as the implications for improving maternal healthcare services.

Methods: A cross-sectional study was conducted on 100 pregnant women (≤20 weeks gestation) who visited antenatal clinics in rural Haryana. Structured interviews were used to obtain socio-demographic information. Anthropometric measures such as BMI and MUAC were used to determine nutritional status. Dietary intake patterns were assessed using a 24-hour dietary recall, and data on meal frequency and food consumption practices were collected.

Results: Nutritional examination revealed undernutrition in a subset of participants, with MUAC categorizing 22% of women as malnourished and BMI classifying 6% as underweight. Dietary examination revealed inadequate meal frequency and nutrient intake, with nearly half of participants eating only two meals each day. These findings imply poor eating practices throughout early pregnancy, which increases the risk of poor maternal and fetal outcomes.

Conclusion: The study identifies ongoing nutritional deficiencies among pregnant women in rural settings. Routine nutritional assessment and focused dietary counseling in antenatal care services are critical for improving maternal nutrition and pregnancy outcomes. Strengthening nutrition-focused interventions in multidisciplinary maternity healthcare systems is advocated.

Keywords: Maternal nutrition, Nutritional status, Pregnancy, Antenatal care, Rural health

Parenting Styles and Early Life Nutrition: An Evidence-Based Multidisciplinary Approach to Advancing Mental Health and Functional Wellbeing

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Early-life nutrition and caregiving environments are critical determinants of neurodevelopment and long-term mental health outcomes. This review adopts an evidence-based multidisciplinary approach to examine how parenting styles influence dietary patterns in early childhood and how specific nutrient deficiencies contribute to the development of mental health disorders in adulthood.

Key nutrients essential for brain development—including omega-3 fatty acids, iron, zinc, vitamin B12, folate, and vitamin D—play crucial roles in neurogenesis, neurotransmitter synthesis, and cognitive functioning. Deficiencies in these nutrients during critical developmental windows have been associated with impaired synaptic plasticity, altered dopaminergic and serotonergic pathways, and increased risk of conditions such as depression, anxiety, and cognitive dysfunction later in life.

Parenting styles significantly shape children's dietary intake and feeding behaviors. Authoritative parenting is associated with structured and nutrient-adequate diets, whereas permissive, authoritarian, and neglectful styles are linked to poor diet quality, irregular feeding patterns, and increased consumption of energy-dense, nutrient-poor foods. These patterns increase the likelihood of both micronutrient deficiencies and long-term neuropsychological consequences.

This narrative review synthesizes evidence from peer-reviewed literature published between 2015 and 2025, sourced from databases including PubMed, ScienceDirect, and Google Scholar. The review highlights biological and behavioral pathways linking early nutrition and caregiving environments to adult mental health outcomes.

The findings emphasize the need for early, multidisciplinary interventions, including parental education, nutritional counseling, and community-based programs aimed at improving childhood dietary quality. Integrating these strategies into preventive healthcare frameworks can reduce the long-term burden of mental health disorders and support healthier developmental trajectories.

Keywords: Parenting styles, Early-life nutrition, Brain development, Authoritative parenting

An observational study of the sleeping pattern (circadian rhythm) in relation with diet and lifestyle in a young studying or working population (25-35 yrs).

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Introduction: Sleep is a basic physiological need, yet it is increasingly compromised in young adults (25–35 years) due to modern lifestyles. This study helps identify dietary and lifestyle factors, supporting targeted behavioral modifications.

Problem Statement/Objectives:

1. To assess diet and lifestyle of participants
2. To determine the correlation of dietary and lifestyle factors with sleep.
3. To identify risk factors affecting sleep patterns
4. To provide counselling and educational material.
5. To make a difference to improve sleep patterns in the target population with provided aid

Methods: This was a cross-sectional observational study using various assessment tools to collect and analyze data. After selecting the research topic, a literature review was conducted, and the final project protocol was prepared and submitted to the Institutional Ethics Committee (IEC) as per guidelines.
After IEC approval, eligible subjects were recruited after obtaining informed consent.

During the visit, Informed consent form and Participant Information Sheet (PIS)was given to the participants and research was initiated and conducted on the agreed group of subjects. A semi-structured Questionnaire were also given to the eligible subjects.

Result: The study examined sleep patterns (circadian rhythm) in relation to diet and lifestyle among young studying or working population (25–35 years).

Data were collected through one-on-one interviews, including sociodemographic details, anthropometry, physical activity, diet, and lifestyle.The study was observational with a sample size of 340. Data were analyzed using SPSS version 16.0, and dietary data were computed using DietCal version 8.0.

Discussions: The study explored multiple determinants of sleep quality, finding associations with dietary habits, work patterns, and lifestyle factors such as frequency

of socializing, academic satisfaction, work–life balance, and mental health. Sleeping habits were also significantly associated with sleep quality.

Conclusion: This study highlights the need to assess sleep alongside diet and lifestyle in young adults, focusing on insomnia and other sleep disorders in an economically productive yet understudied population.

Avenanthramides and Selected Phytochemicals as Prospective Anti-Melasma Agents

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Melasma is a chronic hyperpigmentation disorder primarily associated with dysregulatedmelanogenesis, in which enzyme tyrosinase plays a central regulatory role. The present study employed an integrated *in silico* approach to evaluate the therapeutic potential of selected natural compounds against key melanogenic targets, with the aim of identifying safe and effective alternatives for melasma management. A total of thirteen phytochemicals *viz* avenanthramides (AVN-A), curcumin, cinnamaldehyde, citral and selected monoterpenes were systematically assessed. Pharmacokinetic and drug-likeness evaluation was performed to predict absorption, distribution, metabolism, excretion and toxicity profiles. Most compounds demonstrated favorable physicochemical properties, acceptable bioavailability, suitable skin permeation potential and minimal toxicity alerts indicating their suitability for topical or systemic application. Molecular docking studies were carried out against human tyrosinase (P14679), tyrosinase catalytic domain (2XSN) and DHICA oxidase (5M80) using multiple docking platforms to ensure reliability. All compounds exhibited appreciable binding affinity toward the active sites of the target proteins, forming stable hydrogen bonds and hydrophobic interactions with key catalytic residues. To further validate binding stability and strength, molecular dynamics simulation was conducted for the AVN-A-tyrosinase complex. Analysis of RMSD, RMSF, radius of gyration, solvent-accessible surface area, hydrogen bond persistence and interaction energy confirmed the structural stability and favorable dynamic behavior of the complex throughout the simulation period. Overall, the integrated computational findings suggest that the 10 evaluated compounds possess favorable pharmacokinetic characteristics, effective target binding and stable interaction profiles, highlighting their potential as anti-melanogenic agents. Very few studies exist till date that provide a strong theoretical foundation supporting the use of natural compounds, particularly avenanthramides as promising candidates for melasma management, thus, warranting further experimental validation.

SPEECH AND LANGUAGE PATHOLOGY

Speech and Language Outcomes Following Structured Multidisciplinary Intervention in a Child with West Syndrome: A 2-Year Longitudinal Case

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Background: West Syndrome is an epileptic encephalopathy characterized by infantile spasms, abnormal EEG patterns, and developmental regression. Children frequently present with significant cognitive and communication impairments secondary to underlying structural brain abnormalities. Evidence documenting structured speech-language intervention outcomes remains limited.

Case Description: A 3.2-year-old male presented with delayed speech and language development. Perinatal history revealed hypoxia, neonatal hypoglycemia, and recurrent seizures. MRI demonstrated thinned corpus callosum with bilateral periventricular white matter changes suggestive of hypoxic sequelae. EEG showed abnormal spike-wave discharges. Developmental quotient was approximately 40%. Baseline speech evaluation revealed 1–2 word utterances, comprehension limited to simple one-step commands, impaired oro-motor skills (reduced sucking/blowing; absent tongue lateralization), limited consonant inventory (bilabials only), poor eye contact, and predominantly non-verbal communication.

Intervention: An 8-month structured, goal-based speech-language therapy program (October 2023–June 2024) was implemented in four progressive phases. Intervention targeted:

1. Pre-linguistic skills – joint attention, turn-taking, sitting tolerance, and social reciprocity. 2. Cognitive foundations – auditory-visual attention, memory (progressing from single-item recall to 2–3 items), eye–hand coordination. 3. Imitation and motor development – gross and fine motor imitation to support speech motor planning. 4. Oro-motor rehabilitation – structured blowing, sucking, tongue mobility and strengthening exercises. 5. Language development – receptive vocabulary expansion, sound-object association, sentence building, and structured expressive language tasks. 6. Functional communication training – promoting verbal mode over non-verbal behaviors through structured prompting and reinforcement. Parental counseling and home carryover activities were integrated throughout therapy.

Results: Re-evaluation at 5 years showed emergence of simple sentences, comprehension of complex sentences, complete vowel and consonant inventory, improved oro-motor control, better pragmatic skills (eye contact, greetings), and functional verbal communication.

Conclusion: This case demonstrates that structured, phased speech-language intervention can yield meaningful communicative gains in children with West Syndrome despite significant neurodevelopmental compromise.

Aerodynamic, Perceptual, and Acoustical analysis of Voice in Children with Down Syndrome

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Down syndrome is a genetic disorder caused by the presence of an extra copy of chromosome 21. The condition was first described in 1866 by the British physician John Langdon Down. In India, Down syndrome occurs in about 1 in 800-1150 live births, which means around 21,000 to 37,000 babies are born with this condition every year. Globally, it is the most common chromosomal disorder, occurring in about 1 in 1,000-1,100 live births. Risk factors include older maternal age, being carriers of the genetic translocation for Down syndrome, having had one child with Down syndrome. The signs and symptoms include speech and language problems, heart problems, problems with the digestive system, problems with the immune system, Sleep apnea, being overweight, spinal problems, Leukemia, etc. Down syndrome can sometimes be detected during pregnancy through prenatal screening and diagnostic tests. It can also be identified after birth by observing physical features and through genetic testing. They can be identified by their look - flat facial profile, upward-slanting eyes, a small nose with a flat bridge, a short neck, and low muscle tone (hypotonia). Down syndrome is usually associated with developmental delays, mild to moderate intellectual disability. The present study aims to analyze voice characteristics in children with Down syndrome using aerodynamic, perceptual, and acoustic measures.

A total of 20 male children aged 5 to 8 years were included in the present study. Out of which 10 children with Down syndrome and other 10 typically developing children with age and gender matched were participated. Aerodynamic assessment was conducted to measure the parameters such as maximum phonation duration. Perceptual voice analysis was carried out using standardized test i.e CAPE-V. Acoustic analysis was performed using PRAAT software to measure fundamental frequency, jitter, shimmer, and harmonic to noise ratio. Participants were asked to sit comfortably and phonate /a/, /i/, and /u/ as long as they can. Each sample was collected three times, out of which good sample were taken for analysis. The samples were recorded by using PRAAT software in quiet environment. After voice analysis, data were fed into the SPSS-20 software to check the significant difference. Mann-Whitney U test was administered and results revealed significant difference between the voice of Down syndrome and typically developing children on all the voice parameters. Perceptual

analysis showed poor voice quality in children with Down syndrome. MPD was also significantly reduced in children with Down syndrome. Mixed result shown by the different studies. These findings cannot be generalized due to small sample size and may be further studies are needed to explore the finding for clinical use.

Dosimetric comparison of Volumetric modulated arc therapy- Full arc, Anterior Half arc, Posterior Half arc, and IMRT techniques for the irradiation of esophageal carcinoma

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Aim: This study aimed to dosimetrically compare full arc (FA), anterior half arc (AHA), posterior half arc (PHA) VMAT, and IMRT for the irradiation of esophageal carcinoma (EC).

Patients and methods: Twenty-three patients with middle thoracic EC were retrospectively selected for this study. A Total of ninety-two plans - 23 FA, 23 AHA, 23 PHA VMAT, and 23 IMRT were generated for comparison. Planning target volume (PTV), conformity index (CI), homogeneity index (HI), and organ-at-risk volume and mean doses were compared. Normal tissue (Body-PTV) receiving V5 and V10 was also compared.

Results: After dosimetric comparison of three VMAT arcs and IMRT, it was found that the PHA arc was superior with improved PTV coverage, CI, HI, and OAR sparing compared to FA, AHA VMAT, and IMRT. The maximum dose to the spinal cord (25.5 Gy) was 9%, 3.1%, and 12% lower in PHA compared to FA (27.8 Gy), AHA (26.3 Gy), and IMRT (28.6 Gy). V30 and the mean dose to the heart were also lower in the PHA VMAT. V5, V10, and mean dose of total lung were significantly lower in PHA compared to FA, AHA, and IMRT (p-value<0.05). No significant difference was found for V20 total lung in IMRT and VMAT plans.

Conclusion: The posterior half arc was found superior compared to FA, AHA, and IMRT techniques, with improved PTV coverage, CI, and HI with reduced OAR doses. The reduction in lung and heart doses could reduce radiation-induced toxicity. Therefore, the posterior half arc technique can be considered a feasible arc technique for effectively treating middle thoracic esophageal carcinoma.

Geospatial Surveillance of Dementia and Modifiable Risk Factors in an Urban Indian Population: A Multidisciplinary GIS-Enabled Pilot Study

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Background: Dementia poses a rapidly growing public health challenge in low- and middle-income countries, where early identification of modifiable risk factors and targeted interventions remain limited. Geographic Information System (GIS)–based surveillance offers a novel approach for spatially mapping dementia risk and informing localized care strategies.

Methods: We conducted a multidisciplinary, community-engaged pilot cross-sectional study among 150 adults aged ≥40 years residing within a 2.5-km radius of AIIMS, New Delhi. Cognitive status was assessed using standardized clinical tools, including the Clinical Dementia Rating (CDR) scale. Twelve established dementia-related risk factors—vascular, lifestyle, psychosocial, and environmental—were evaluated through structured interviews, clinical measurements, and validated scales. Participants were geotagged using a custom GIS-enabled mobile application to enable spatial mapping of risk factor clustering.

Results: Cognitive impairment was identified in 38% (n=57) of participants, while dementia prevalence was 10% (n=15), ranging from mild to severe stages. A high burden of modifiable risk factors was observed: hypertension (69.3%), overweight/obesity (54.7%), diabetes (40%), depression (28%), hearing impairment (26.7%), alcohol use (15%; with 8% requiring addiction referral), and prior traumatic brain injury (23.3%). GIS mapping revealed spatial clustering of vascular and lifestyle risk factors in specific urban localities, alongside high exposure to ambient air pollution. Community-based engagement through Resident Welfare Associations facilitated awareness, early referrals, and linkage to care.

Conclusions: This study demonstrates the feasibility and translational value of GIS-based dementia surveillance in an urban Indian setting. Integrating geospatial analytics with clinical and community data enables identification of high-risk clusters, supports personalized care pathways, and informs data-driven public health planning. Scaled implementation of this model could strengthen dementia prevention, resource allocation, and policy formulation in India and similar low-resource urban contexts.

Development, validation and feasibility testing of an online Yoga program for patients with Hirayama disease: A three-month pilot trial

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Background: Hirayama Disease (HD), a rare flexion-induced myelopathy which results in unilateral or bilateral atrophy in the upper limbs, is typically managed with cervical collar therapy, surgery, and lifestyle modifications. Yoga-based interventions have shown promise in managing neurological disorders such as multiple sclerosis and cervical radiculopathy. Given the pathophysiology of HD, we hypothesised that yoga could benefit HD patients, especially those awaiting surgery or for whom surgery is contraindicated. However, a literature search revealed that no standardised online yoga protocol for HD currently exists.

Objectives: This study aimed to develop and validate an online yoga module for HD and test its feasibility in patients diagnosed with HD.

Methods: A tailored yoga program was developed by two yoga therapy experts and a neurosurgery consultant. The online module was validated by 10 yoga experts and 5 neurologists/neurosurgeons. It was implemented in 42 patients with HD to evaluate its safety and utility. Patients underwent supervised tele-yoga sessions for 3 months (each session for 60 minutes, 5 sessions/week). Outcomes included hand grip strength (via dynamometer), digit strength (via pinch meter), and finger dexterity (via Nine-Hole Peg Test), measured at baseline and after 3 months of yoga practice. Statistical analyses used paired t-tests (normally distributed data) and Wilcoxon signed-rank tests (non-normally distributed data).

Results: The finalised module was safe, feasible via tele-rehabilitation, and well-tolerated. Thirty-three of the 42 patients had completed assessments at 3-month follow-up, which we included in the analysis. Significant improvements occurred in most parameters: handgrip (both hands), tip pinch (both hands), key pinch (both hands), right palmar pinch, and right Nine-Hole Peg Test with $p < 0.05$. No significant changes were noted for the left palmar pinch and the left Nine-Hole Peg Test.

Conclusion: The validated yoga module offers a complementary approach to HD management, benefiting patients awaiting or unable to undergo surgery. The findings

suggest that yoga can address functional deficits in patients with HD, providing a safe and feasible intervention. Larger controlled trials with inclusion of symptomatic and quality-of-life outcomes are warranted.

POSTER- PHYSIOTHERAPY

S. No.	Name	Topic	College
1	Anshika Dharwal	AI – Driven Rehabilitation in Geriatrics	Abhilashi University
2	Gausiya Patel	Academic stress, social media addiction and time management among undergraduate students.	Parul University
3	Vansh Patel	Comparative Analysis of Postural Awareness and Musculoskeletal Discomfort in Formal vs. Informal Study Environments among the university students	Parul University
4	Sania Bhakta	Association of Physical activity level and Functional competence with Lifestyle factors among Physiotherapy Students	Parul University
5	Samruddhi Khaire	Comparison of Cervicogenic Headache in Students With and Without Pectoralis Minor Tightness	Parul University
6	Vaishnavi Deshpande	Digital vs Physical Fatigue: Impact on Musculoskeletal Strain and Ergonomics in Young Adults.	Parul University
7	Sehrish Shaikh	Stress, Menstrual Distress & Health-Related Quality of Life in College Students with PCOD	Parul University
8	Kumari Varsha	Multidisciplinary neurorehabilitation for traumatic brain injury: from ICU to community reintegration	

9	Mehak Tafseer	Effects of pre -operative rehabilitation on post operative functional outcomes in patients with gastrointestinal cancer	Aligarh Muslim University
10	Abida Ahmed	Comparing Sensorimotor Adaptability Training and Post-Flight Vestibular Rehabilitation Outcomes in Long-Duration ISS Astronauts	Aligarh Muslim University
11	Omama Shahzad	"Effect of IMT plus Pulmonary Rehabilitation vs standard Pulmonary Rehabilitation alone on exercise capacity and dyspnea in moderate-severe COPD	Aligarh Muslim University
12	Taniya Chechi	Effectiveness of Physiotherapy in Systemic Complications of Chronic Kidney Disease Stage 5: A Case Study	Sharda University
13	Monisha Bhakat	Dual-Task Interference in Geriatric Populations with Early-Stage Dementia: How physical therapy can delay cognitive decline	Sharda University
14	Kulsoom Shaikh	Comparative efficacy of aerobic training versus high intensity interval training on cardio-metabolic health in women with polycystic ovary syndrome	Aligarh Muslim University
15	Fasahat Zaidi	Artificial intelligence - enabled telerehabilitation : recent developments in remote patient care	Aligarh Muslim University
16	Jannat	Correlation between thoracic kyphosis and respiratory	Aligarh Muslim University

		endurance in young females	
17	Amina Khursheed	Association between lower limb alignment and low back pain	Aligarh Muslim University
18	Ahmadi Fatima	Diaphragmatic electrical stimulation for ventilator dependent patient	Aligarh Muslim University
19	Helal Rashid	Virtual reality for balance training in elderly stroke survivors	Aligarh Muslim University
20	Navpreet Kaur	Current scenario of preferred approach in stroke rehabilitation among PTs in Punjab	All Saints Institute
21	Gurleen Kaur	Rehabilitation of PIVD : A Literature Review	
22	Gunneet Kaur Makkar	Prevalence of Menstrual Distress Among The Females Of Physiotherapy Students	All Saints Institute
23	Pavneet Kaur	Musculoskeletal complications of diabetes mellitus	All Saints Institute
24	Umrah Khan	CIMT with sensory re-education in recurrent stroke: a multidisciplinary approach".	KMC College, Meerut
25	Praful Dinesh Bhoyar	MCCFS NeuroMind: An AI-Driven Multidisciplinary System for Adaptive Cognitive Assessment and Rehabilitation	Lovely Professional University
26	Arpan Sahota	Relationship between learning style and academic performance in Ludhiana physiotherapy students	All Saints Institute
27	Nishi Yadav	Prevalence of Hamstring and Cervical Muscle Tightness In Medical Student With Cervicogenic Headache	All Saints Institute

28	Nishat	Prevalence of internet addiction among physiotherapy students	All Saints Institute
29	Jatin Malhotra	Association of quadriceps angle with risk of lower limb Injuries in bhangra dancers	All Saints Institute
30	Mohd Yasir	Frailty syndrome and reversal through exercise	Aligarh Muslim University
31	Chandan Kumar	Comparison of retro walking on treadmill versus jack knife stretching on hamstrings extensibility among physiotherapy students	All Saints Institute
32	Jai Singh Rehal	Challenges faced by physiotherapy students during clinical training	All Saints Institute
33	Khushman Kathuria	Emotional exhaustion Burnout and perceived stress in physiotherapy Students	All Saints Institute
34	Puneet Bansal	Prevalence of musculoskelton disorder among post menopausal women	All Saints Institute
35	Sukhchain Singh	Work related musculoskeletal disorder among computerized numerical control machine operator	All Saints Institute
36	Gungun Prajapati	An AI-driven wearable platform for real-time biomechanical feedback and rehabilitation monitoring	Lovely Professional University
37	Janice Helen Jacob	Redefining Geriatric Fall Protection: A Multidisciplinary Clinical Model Integrating Shear-	Dr. M.G.R Educational and Research Inst, Chennai

		Thickening Fluids (STF) and Targeted Exercise Therapy	
38	Mohd Zaid Siddiqui	PT care pathway of frozen shoulder- The shoulder that refused to move… until Physio stepped in	Era University
39	Maaz Akram	Love hurts…Even in the Spine.. Understanding kissing spine Syndrome	Era University
40	Simrandeep Kaur	A comparative analysis of myofascial release and integrated neuromuscular inhibition on upper trapezius function and cervical mobility in neck pain patients	All Saints Institute
41	Shriya Kapoor	Alterations in pulmonary functions among healthy young adults with and without using surgical mask during treadmill based exercise protocol	All Saints Institute

POSTER- SPEECH AND LANGUAGE PATHOLOGY

S. No.	Name	Topic	College
1	Amit Yadav (Student-B. ASLP)	Beyond Surgical Repair in Bilateral Cleft Lip and Complete Cleft Palate: Persistent Speech and Resonance Disorders in Adulthood – A Case Study	Composite Regional Centre, Lucknow
2	Saumya Singh (Student-B. ASLP)	Post-Stroke Global Aphasia with Dysphagia in an Elderly Female: A Case Report on Assessment and Management	Composite Regional Centre, Lucknow

POSTER- DIETETICS AND NUTRITION

S. No.	Name	Topic	UG/PG/ Ph.D Scholar
1.	Sania Malik	Nutritional and Dietary Assessment among Women in Urban Slum Clusters of Delhi	B.Sc. Hons. Home Science(Food And Nutrition), Lady Irwin College, Delhi
2.	Anshita Chug	Consumption pattern of Nutraceuticals among Adults living in Delhi	B.Sc. (Hons.) Home Science (Pursuing) Lady Irwin College
3.	Tripti Bhardwaj	Readiness Of Phc Facilities For Implementing An Algorithm-Based Approach For Women's Nutritional Care	B.Sc. (Hons.) Home Science (Pursuing) Lady Irwin College,
4.	Mahajbeen Fatma	Anti diabetic Property of Bunium persicum seeds role model of diabetic rats	Faculty, Department of Food and Nutrition, Era University, Lucknow
5.	Monira Bano	Role of Nutrition in Managing Chronic Kidney Disease Among Geriatric Populations: An Evidence-Based Clinical Framework	Ph.D Scholar, Department of Food and Nutrition, Era University, Lucknow
6.	Ms. Sonu Yadav	Role of High-Protein Diets in Post-Surgical Recovery	M.Sc. Student, MRIIRS
7.	Nirlap Kour	Development of functional Guava Fermented Juice via Early Intervention Strategies for Diabetes Mellitus".	Ph.D Scholar, Chandigarh University

8.	Priya priya	To Study the pattern of zero calorie artificially sweetened sodas consumption and its prevalence along with self reported motivating factors among adults in Delhi NCR : A Public Health Paradigm.	B.Sc. Hons. Home Science(Food And Nutrition), Lady Irwin College
9.	Genung Talong	Dietary Patterns, Phyiscal Activity and Behavioural patterns among college going girls with PCOS.	B.Sc. Hons. Home Science(Food And Nutrition), Lady Irwin College

POSTER- OCCUPATIONAL THERAPY

S. No.	Name	Topic	College
1	Sonali Tomar (BOT Student)	Empowering function, enhancing life: occupational therapy role in advance healthcare	Santosh College, Ghaziabad
2	Mohd Ammar Ali (Student-BOT)	Early Relational Health Interventions in NICU: An Evidence-Based Multidisciplinary Approach	Jamia Hamdard

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