SOMAIYA AYURVIHAR
K J Somaiya college of Physiotherapy

Somaiya TRUST

KJSPARC's 2nd International Physiotherapy Conference Proceedings 2025

Innovation and Beyond

KJSPARC's 2nd International

Physiotherapy Conference Proceedings, 2025

Innovation and Beyond

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About Us

Giving wings to your dreams

K J Somaiya College of Physiotherapy was established in the year 2002 by Somaiya trust.

A vast expanse of Forty Thousand square feet within 22.5 acre campus provides a perfect ambience for an aesthetically chartered Physiotherapy college building. Our campus is unique with open lawns marked with lush green ayurvedic garden located in close proximity with eastern express highway and the city centre.It offers various courses like Bachelor in Physiotherapy (BPT), Masters in Physiotherapy (MPT) & PhD in Physiotherapy. Founded with the objective of educating aspiring physiotherapists who would be well informed and equipped with requisite skills for managing clients e ciently.

About KJSPARC **(K J Somaiya Physiotherapy Academic & Research Conclave)**

KJSPARC born out of the need to connect the dots in between clinical, research, academic and evidence based physiotherapy. KJSPARC was conceptualized in November 2021.

01

To update physiotherapists about recent happenings in the world of Physiotherapy.

02

To provide a platform for Physiotherapists to present their research.

03

To conduct" hands on", clinical skills training workshops on advanced techniques pertaining to all fields of physiotherapy.

04

To envisage a changing Physiotherapy field in the COVID and the POST COVID era.

05

To expose students to the ideas of soft skills, ethics, administration, management, innovation, green energy, sustainable resources through seminars and workshops by eminent personalities in those fields.

About the Conference

KJSPARC's 2nd International Physiotherapy Conference Proceedings, 2025

Innovation and Beyond

On 21 & 22 Feb 2025

In Collaboration with

SOMAIYA INNOVATION AND IMPACT FESTIVAL

at Somaiya Vidyavihar University, Mumbai

Objectives:

- **Knowledge Advancement:** Facilitate the sharing of the latest advancements in physiotherapy through keynote presentations, workshops, and panel discussions, enhancing participants' understanding of innovative practices and emerging technologies.

- **Professional Networking**: Provide opportunities for participants to connect with leading experts, practitioners, and researchers, fostering collaboration and the exchange of ideas within the physiotherapy community.

- **Skill Development**: Offer hands-on workshops that equip attendees with practical skills and techniques that can be directly applied in clinical settings, enhancing patient care and rehabilitation outcomes.

- **Future Trends Exploration**: Discuss and analyze future trends in physiotherapy, focusing on how innovation can transform the profession and improve practical applications within the industry.

- **Cultural Engagement**: Incorporate cultural elements into the conference to enrich the experience, promoting a holistic approach to physiotherapy and its practices.

- **Inspiration for Implementation**: Inspire attendees to implement innovative solutions in their own practices by showcasing success stories and best practices from thought leaders in the field.

- **Collaboration Promotion**: Foster an environment that encourages collaboration among professionals to drive the industry forward and improve patient care through shared knowledge and innovative practices.

Committees of KJSPARC 2025

Patrons

Shri Samir Somaiya
Chancellor,
Somaiya Vidyavihar University

Dear Esteemed Guests,

Welcome to KJSPARC 2nd International Physiotherapy Conference Proceedings 2025 – Innovation and Beyond. This event is more than just a conference—it is a collective effort to envision and create the future of physiotherapy.

In the Mahabharata, it is mentioned that लाभानां श्रेय आरोग्यं - of all gains, health is of the greatest value. To be healthy and also when needed, to be cured. Practices of Yoga, Diet and Exercise are necessary for us to keep healthy. Physiotherapy helps us to get healthy and stay healthy.

Our theme, Innovation and Beyond, challenges us to think differently, explore uncharted territories, and harness the power of science and technology to improve patient outcomes. I also hope that we will explore areas of interdisciplinary collaboration, with science and also traditional knowledge systems to develop newer paradigms of staying healthy. The ideas exchanged here will not only enhance our practice but also inspire the next generation of physiotherapists.

A heartfelt thank you to our speakers, researchers, and participants for making this event possible. Your expertise and enthusiasm ensure that physiotherapy remains a dynamic and ever-evolving field.

May this conference ignite new ideas and lasting collaborations.

With best regards,

Shri Samir Somaiya Chancellor,
Somaiya Vidyavihar University

Patrons

Prof V N Rajasekharan Pillai
Vice-Chancellor,
Somaiya Vidyavihar University

Dear Colleagues and Delegates,

It is a privilege to welcome you to the International Physiotherapy Conference 2025 – Innovation and Beyond. This prestigious event serves as a platform for exchanging knowledge, exploring advancements, and fostering professional growth. I am glad to note that the organisors are bringing out the “Proceedings” of this conference.

With Innovation and Beyond as our theme, we aim to push the boundaries of physiotherapy by integrating cutting-edge research, technological advancements, and interdisciplinary collaboration. Together, we can shape the future of patient care and rehabilitation.

I extend my sincere appreciation to all the researchers, speakers, and attendees for their invaluable contributions. Your dedication to learning and innovation makes this event a beacon of progress in our field.

I extend my best wishes to the conference and congratulate the organisers for bringing out an impactful proceedings out of the Conference.

Best wishes,

Prof V N Rajasekharan Pillai Vice-Chancellor,
Somaiya Vidyavihar University

Patrons

Lt General H S Kahlon
Secretary,
Somaiya Trust

Dear Participants,

It is my great pleasure to welcome you to the KJSPARC 2nd International Physiotherapy Conference Proceedings 2025 – Innovation and Beyond here in the dynamic city of Mumbai. This gathering is a testament to the progress and possibilities within our profession, bringing together visionary minds, pioneering research, and transformative innovations.

The theme, Innovation and Beyond, embodies our pursuit of excellence and our readiness to embrace new frontiers in physiotherapy. Through collaboration, technology, and research, we continue to redefine patient care and professional practice.

I sincerely appreciate the contributions of our distinguished speakers, dedicated researchers, and enthusiastic attendees. Your passion and commitment are the driving forces behind the evolution of this field.
Wishing you an inspiring and intellectually enriching experience.

With best regards,

Lt General H S Kahlon Secretary, Somaiya Trust

Patrons

Dr Raghunath K Shevgaonkar
Provost,
Somaiya Vidyavihar

Dear Delegates and Friends,

I am delighted to welcome you to KJSPARC 2nd International Physiotherapy Conference 2025 – Innovation and Beyond, hosted in the vibrant city of Mumbai. This event represents a unique opportunity to connect, collaborate, and celebrate the remarkable strides in physiotherapy.

Innovation is the key to progress. The theme, Innovation and Beyond, encourages researchers to push past limits, adopt emerging technologies, and expand their horizons. Through exchange of ideas, the knowledge is multiplied. The conference will provide a platform for meaningful discussions and enhancement of domain knowledge. Somaiya being a multi-institutional organization, provides an opportunity to take up technology assisted, inter-disciplinary research that can drive impactful change in the profession.

My sincere thanks to all the speakers, organizers, and attendees for their dedication to their profession. I am confident that the conference will not only present current research but will open many new research directions.

Wishing you all a successful, enriching, and memorable experience.

With best regards,
Prof Raghunath K Shevgaonkar Provost, Somaiya Vidyavihar

Patrons

Dr Shweta Manwadkar (PT)
Principal and Professor,
K J Somaiya College of
Physiotherapy

Dear Friends,

It is an absolute privilege to host yet another grand conference by KJSPARC of K J Somaiya College of Physiotherapy! As the Principal of this esteemed institute, I am filled with immense joy and pride as we prepare to welcome our distinguished delegates, speakers, guests, and exhibitors.

The vision behind this conference is to bring together a diverse range of brilliant minds—both as speakers and participants—to foster learning, collaboration, and inspiration.

While reaching out to potential speakers who align with our theme, we were fortunate to connect with extraordinary yet humble individuals, passionate about their fields and eager to share their wisdom. Their enthusiasm has truly added to the spirit of this event.

I am incredibly proud of my team for their dedication and excellence in bringing this conference to life. Once the idea was set in motion, their unstoppable energy shaped it into the grand event it has become today.

I am deeply grateful for the unwavering support of our management and the invaluable resources this vibrant campus provides, allowing us to offer nothing but the best to all our attendees. I sincerely appreciate the trust each one of you has placed in us, and I hope that by the end of this conference, you will take away not just what you came for, but so much more.

Best wishes,

Dr Shweta Manwadkar (PT)
Principal and Professor,
K J Somaiya College of Physiotherapy

Key Note Speaker

Shiva Subramaniam
Co-founder Biomimicry Compass,
Guest Faculty, IIT Madras, Chennai,
India

Building Creative Confidence

If you were to ask a room full of people, “How many of you are creative?”, barely a few would raise their hands. Yet every person in that room has done something creative in their lives, be it cooking a meal or writing a letter or learning a new language or finding a new job. However, if you tell them this – that they all have been creative, they would likely dismiss the statement with some version of “That is not really creativity.”

Why? Because we believe that creativity is something rare, reserved for extraordinary feats. We believe that in order to be called ‘creative’ one should have created a sublime work of art or that one should have invented a rocket that can travel to the moon, land and return to earth, all on its own. And it is because of such beliefs and assumptions that most of us do not believe that we are creative. This is why we do not have creative confidence: due to a misconception that creativity is only about new and groundbreaking ideas. Therefore, we believe that we are not creative and we do not attempt new and di cult things in our life, thereby limiting our creative growth.

Creative confidence is the belief that one is creative and putting that belief to work. Once we let go of the notion that creativity is only about out-of-the-box ideas and is the domain of a select few, a whole new world opens up before us. Creating small things becomes fun – painting a chair, re-arranging one’s room, making a new friend or learning a new skill. When we embrace this belief, we start enjoying solving problems – that we are solving anyway – with a smile, knowing that our creativity is already flowing.

The world is full of creative geniuses. They are all around us. To find one, just look in the mirror. Once we realize this, the true definition of creativity becomes crystal clear: creativity is bringing something new into existence, something that did not exist before. When we paint a chair, we have created a new chair. Creativity is in everything we do – and it is time that we recognize that.

Shiva Subramaniam
Co-founder Biomimicry Compass,
Guest Faculty, IIT Madras, Chennai, India

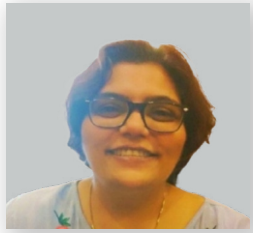
Advisors Committee

Dr Hutoxi writer (PT)

Dr Karen Pavri (PT)

Dr Arun Maiya

Dr Annamma Varghese



Dr Geeta Bhatt

Dr Shrimati Shetty

Managing & Organising Committee

Dr Shweta Manwadkar (PT)
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Dr Mugdha Oberoi (PT)
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Dr Yogini Dhanke (PT)

Mr Mahaveer Devannavar

Mr Raghavendra Nayak

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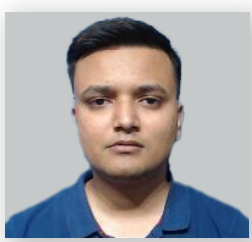
Ms Firoza ansar



Mr Parth Vitekar

Mr Deepak Pawar

Mr Ayush Ramani

Innovation Arena/ Workshop

Dr Sneha Ganu (PT)

Dr Swati Nerkar (PT)

Dr Siddhi Ghodge (PT)

Dr Tejal Pardeshi (PT)

Dr Manali Yadav (PT)

Dr Sandesh Sakpal (PT)

Program Management Committee

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Mr Santosh Hegishte

Mr Rahul Sable

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Mr Vishal Kadam

Mr Ashok Ghaytadak

Mr Babasaheb Hiwale

Mr Bipin Kamble

International Collaboration

مستشفى ثومبي للعلاج الطبيعي وإعادة التأهيل
THUMBAY PHYSICAL THERAPY AND REHABILITATION HOSPITAL

جامعة الخليج الطبية
GULF MEDICAL UNIVERSITY
ACADEMIC HEALTH CENTER

National Collaboration

riidl

SOMAIYA INNOVATION AND IMPACT FESTIVAL

Darwin

Programme Schedule

KJSPARC's
2nd International Physiotherapy Conference 2025,
Themed "Innovation and Beyond"
21st & 22nd February 2025

Venue: Somaiya Vidyavihar University, Vidyanagar, Vidya Vihar East, Vidyavihar, Mumbai, Maharashtra 400077
Google Maps Link: Sakarben Karamshi Somaiya Sabhagruha Bhaskaracharya Building| Gargi Plaza| K J Somaiya Institute of Management

CONFERENCE PROGRAMME

Day 1: 21st Feb 2025 Friday,
Registration: 9:30 AM -12:00 PM
Sakarben Karamshi Somaiya Sabhagruha, K J Somaiya College of Engineering

Day 1: 21st Feb 2025 Friday: Sakarben Karamshi Somaiya Sabhagruha, K J Somaiya College of Engineering

Sr. No.	Event	Time
1.	Somaiya Innovation Impact Festival Inauguration	10:00 AM -1:00 PM

Day 1: 21st Feb 2025 Friday: Concurrent Session Hall A-120 A, Bhaskaracharya Building

Sr. No.	Event	Time
1.	Paper Presentation, Category: Postgraduate Group 1	10:00 AM-1:00 PM

Day 1: 21st Feb 2025 Friday: Concurrent Session Hall B-120 B, Bhaskaracharya Building

Sr. No.	Event	Time
1.	Paper Presentation, Category: Postgraduate Group 2	10:00 AM-1:00 PM

Day 1: 21st Feb 2025 Friday: Concurrent Session Hall C-517, Bhaskaracharya Building

Sr. No.	Event	Time
1.	Paper Presentation, Category: Postgraduate Group 3	10:00 AM-1:00 PM

Programme Schedule

Day 1: 21st Feb 2025 Friday **12:30 PM -1:45 PM,** **Quadrangle, K J Somaiya College of Engineering**
LUNCH

Day 1: 21st Feb 2025 Friday: Sakarben Karamshi Somaiya Sabhagruha, K J Somaiya College of Engineering		
Sr. No.	**Event**	**Time**
1.	Inauguration KJSPARC's 2nd International Physiotherapy Conference 2025	2:00 PM -2:45 PM

Day 1: 21st Feb 2025 Friday: Sakarben Karamshi Somaiya Sabhagruha, K J Somaiya College of Engineering				
Sr. No.	**Speaker**	**Topic**	**Session Chair**	**Time**
2.	**Dr R. Harihara Prakash** Principal & Director, KM Patel Institute of Physiotherapy, Bhaikaka University, Anand, India	Digitalisation in Health Professions Education	Dr Khyati Kothary (PT)	2:50 PM (30 mins)
3.	**Dr Supreet Bajwa** Hip & Knee Specialist Wockhardt Hospitals, Mumbai Central, Mumbai, India	Hip and Knee Arthroplasty in India: Advances in Techniques and Rehabilitation Strategies	Dr Annamma Varghese (PT)	3:25 PM (30 mins)
4.	**Dr Meruna Bose** Associate Professor, Department of Physiotherapy, College of Health Sciences, Gulf Medical University, United Arab Emirates	Innovations and Latest Trends in Rehabilitating People with Parkinson's Disease	Dr Isha Tajane (PT)	4:00 PM (30 mins)
5.	**Dr Bhavana Gadhavi** Dean and Principal, Faculty of Physiotherapy, Parul University, Vadodara, India	Revolutionizing Healthcare: The Future of Ergonomic Innovation	Dr Annamma Varghese (PT)	4:35 PM (30 mins)
6.	**Dr Veena Kiran Nambiar** Professor, Ramaiah College of Physiotherapy, Ramaiah University of Applied Sciences, Bangalore, India	Onsite Cardiac Rehabilitation: Integrating Technology for Optimal Results	Dr Kiran Pawar (PT)	5:10 PM (30 mins)

Programme Schedule

7.	**Prof. Shweta Manwadkar** Professor & Principal, K J Somaiya College of Physiotherapy, Mumbai, India	Mindfulness and Physiotherapy: Integrating Science and Compassionate Care	Dr Kiran Pawar (PT)	5:45 PM (30 mins)
8.	**Dr. Hari Babu K. V.** Professor and Principal, School of Physiotherapy, P. P Savani University, Surat, India	Improving Performance and Engagement through 3D Learning in Physiotherapy		6:20 PM (15 mins)

Day 1: 21st Feb 2025 Friday: Concurrent Session Hall A-120 A, Bhaskaracharya Building		
1.	Paper Presentation, Category: Professional	3:00 PM-5:30 PM

Day 1: 21st Feb 2025 Friday: Concurrent Session Hall B-120 B, Bhaskaracharya Building		
1.	Paper Presentation, Category: Undergraduate	4:00 PM-5:30 PM

Day 1: 21st Feb 2025 Friday: Concurrent Session Physiotherapy Hive, Gargi Plaza		
1.	Innovation Presentation, Category: Jr Prototype	5:00 PM
2.	Innovation Presentation, Category: Sr Prototype	5:00 PM
3.	Innovation Presentation, Category: Conceptual	5:00 PM

Day 1: 21st Feb 2025 Friday, 2:00 PM -6:00 PM : Innovation and Impact Showcase in Collaboration with Somaiya Innovation and Impact Festival at GARGI PLAZA/ ART HIVE	
1.	Physiotherapy
2.	Sustainable Fashion and Lifestyle
3.	Startups
4.	Fablabs/ Maker Space
5.	Wellness
6.	Art and Design
7.	AR/ VR & AI
8.	Mumbai

Programme Schedule

Day 1: 21st Feb 2025 Friday, 2:00 PM -6:00 PM: Gaming Immersions in Collaboration with Somaiya Innovation and Impact Festival at Flagpole Area/ 225, Aryabhatta Building, K J Somaiya College of Engineering	
1.	Drone Obstacle Hive
2.	VR Gaming Hive

Day 1: 21st Feb 2025 Friday, 2:00 PM -9:00 PM: Performances and Leisure in Collaboration with Somaiya Innovation and Impact Festival at GARGI PLAZA/ ART HIVE	
1.	Reading Nooks
2.	Hammock
3.	Fun Viewings
4.	Board Games Corner
5.	Open Mic
6.	Sustainable Fashion and Lifestyle Fashion Show

Day 2: 22nd Feb 2025 Saturday **8:00 AM -9:00 AM** **Quadrangle, K J Somaiya College of Engineering**
BREAKFAST

Day 2: 22nd Feb 2025 Saturday: Sakarben Karamshi Somaiya Sabhagruha, K J Somaiya College of Engineering

Sr. No.	**Speaker**	**Topic**	**Session Chair**	**Time**
1.	**Shiva Subramaniam** Co-founder Biomimicry Compass, Guest Faculty, IIT Madras, Chennai, India	Keynote Building Creative Confidence: Stepping into the world of possibilities	Prof. Shweta Manwadkar	9:30 AM (40 mins)
2	.**Dr Priyanshu Rathod** Professor and Dean, RK University, Rajkot, India	From Ideas to Impact: Turning Innovations into Successful Startups for Physiotherapists	Dr Priti Mehendale (PT)	10:15 AM (30 mins)
3.	**Mr Subodh Gajare** Ass. VP (Innovation), Senior Principal -AI & Digitization, CISCO R&D, Banglore, India	Reimagining Physiotherapy with AI	Dr Pothiraj Pitchai (PT)	10:50 AM (30 mins)

Programme Schedule

4.	**Dr John Solomon** Associate Dean & Additional Professor, Department of Physiotherapy, Manipal College of Allied Health Sciences, Manipal, India	Future of Recovery: VR, AR and Robotics in Neurorehabilitation	Dr Rupali Shevalkar (PT)	11:25 AM (30 mins)

Day 2: 22nd Feb 2025 Saturday: Sakarben Karamshi Somaiya Sabhagruha, K J Somaiya College of Engineering

Sr. No.	Speaker	Topic	Session Chair	Time
5.	**Dr Ramesh Debur** Associate professor, Ramaiah College of Physiotherapy, Ramaiah University of Applied Sciences, Bangalore, India	Data Driven Physiotherapy, Is This the Future Paradigm?	Dr Geeta Bhatt	12:00 PM (30 mins)
6.	**Brig. CN Satish** Commandant, Artificial Limb Centre, Pune,India	Rehabilitation of Amputees- What Does the Future Hold?	Dr Mayur Revadkar (PT)	12:35 PM (30 mins)

Day 2: 22 Feb 2025 Saturday 1:00 PM -2:15 PM Quadrangle, K J Somaiya College of Engineering

LUNCH

Day 2: 22 Feb 2025 Saturday: Sakarben Karamshi Somaiya Sabhagruha, K J Somaiya College of Engineering

Sr. No.	Speaker	Topic	Session Chair	Time
7.	**Dr Arun Maiya** Dean Manipal College of Health Professions, MAHE, Department of Physiotherapy, Chief: Center for Podiatry & Diabetic Foot Care & Research, Manipal, India.	Innovation in medical device research	Dr Khyati Kothary (PT)	2:30 PM (30 mins)
8.	**Panel Discussion** Panelists Shri Samir Somaiya Shiva Subramaniam Mr Subodh Gajare Dr Priyanshu Rathod	Balancing Innovation with Responsibilities. Moderators Dr Mugdha Oberoi Dr Prachi Sarvaiya (PT)		3:05 PM (50 mins)

Programme Schedule

9.	**Dr Alopa Madane (PT)** Co-founder and Chief therapist, Mon Ami Pet Care Clinic, Pune, India	"PAW"sitive Rehab-Prospects of Small Animal Physiotherapy	Dr Hina Jain (PT)	4:00 PM (30 mins)
10.	**Mr Ferdinand Rodricks** Proprietor at Ferro Equip, Mumbai, India **Dr Nasheed Khan** Senior Physiotherapist Ferro Equip, Mumbai, India	Mobility Devices and Accessible Transport	Dr Priti Agni (PT)	4:35 PM (30 mins)
11.	**Mr Urmil Shah** Founder at 19 Insoles, Mumbai, India	Revolutionizing Foot Health: The Role of Insoles in Pain Relief and Performance		5:10 PM (15 mins)
12.	**Mr Vikram Gunjal** **Mr Munush Vij** Co-Founder UpUrFit **Dr Aishwarya G Nigam** Head of Physiotherapy UpUrFit	Enhanced Activation & Recovery Using Topical Solutions: A New Category in Sports & Fitness		5:35 PM (15 mins)

Day 2: 22 Feb 2025 Saturday: Sakarben Karamshi Somaiya Sabhagruha, K J Somaiya College of Engineering		
Sr. No.	**Event**	**Time**
13.	Book Launch	5: 55 PM (15 mins)
14.	Valedictory	6:15 PM

Day 2: 22 Feb 2025 `Saturday: Concurrent Session, 4th Floor, MDP Room-411, K J Somaiya Institute of Management		
1.	Student Forum Activity-Cerebral Tsunami (Debate)	10:30 AM - 1:30 PM
2.	Student Forum Activity-Quiztopia (Quiz)	
3.	Student Forum Activity-See The Unseen-Mental Health Saga (Reel Making)	
4.	Student Forum Activity-Physioflix Cinematic Storytelling (Movie Making)	

Programme Schedule

Day 2: 22 Feb 2025 Saturday, 2:00 PM -6:00 PM: Innovation and Impact Showcase in Collaboration with Somaiya Innovation and Impact Festival at GARGI PLAZA/ ART HIVE	
1.	Physiotherapy
2.	Sustainable Fashion and Lifestyle
3.	Startups
4.	Fablabs/ Maker Space
5.	Wellness
6.	Art and Design
7.	AR/ VR & AI
8.	Mumbai
9.	Museum on Wheels by CSMVS

Day 2: 22 Feb 2025 Saturday, 2:00 PM -6:00 PM: Gaming Immersions in Collaboration with Somaiya Innovation and Impact Festival at Flagpole Area/ 225, Aryabhatta Building, K J Somaiya College of Engineering	
1.	Drone Obstacle Hive
2.	VR Gaming Hive

Day 2: 22 Feb 2025 Saturday, 2:00 PM -9:00 PM: Performances and Leisure in Collaboration with Somaiya Innovation and Impact Festival at GARGI PLAZA/ ART HIVE	
1.	Reading Nooks
2.	Hammock
3.	Fun Viewings
4.	Board Games Corner
5.	Open Mic

Programme Schedule

International Speakers (Online)		
Sr. No.	**Speaker**	**Topic**
1.	**Syed Mohamed Rashid Buhari** Physiotherapy Specialist Hamad Medical Corporation, Qatar	Enhancing Technology to Prevent Fall in Elderly (Online)
2.	**Dr. Pankhuri Kamlakar Vairagade (PT)** Senior Specialist Physiotherapist Epsom and St Helier University Hospitals NHS Foundation Trust, London	Safe and Effective Use of Sara Stedy and Hoists in Patient Handling (Online)

Thank You

Concept note for Pre Conference workshops

Sr no.	Workshop Title	Resource Person	Detailed Objectives
1	Grant Writing Skills for Funded Research	**Dr. Sasikumar N Menon** Director, Institute of Advanced Research in Interdisciplinary Sciences, Sion, Mumbai.	1. Develop grant writing skills 2. Strategically apply for funding 3. Develop the culture of collaboration
		Prof. Sunita Shailajan Freelance Technical expert and Research Project Mentor, Dean Research (former), Ruia college	
2	Care for Hemophilia: From Basics to Beyond	**Dr. Shrimati Shetty,** Director Hematology Laboratory and Clinical Research, K J Somaiya Hospital and Research Center	Hematology Perspective on Hemophilia and Patient Care
		Dr. Chandrakant Shetty, Professor and Head Department of Radiology, K J Somaiya Hospital and Research Center	Radiology Perspective - Ultrasound Imaging for Joint Health Evaluation
		Dr. S. Mohanty Professor in Orthopedics, Hon. Consultant Arthroplasty Surgeon, K J Somaiya Hospital and Research Center	Orthopedic Approach to Hemophilia Management
		Dr. Shrinath Kshirsagar, Clincial Trail and Research Unit, K J Somaiya Hospital and Research Center	Management of Hemophilia
		Dr. Priti Mehendale (PT), Professor and Head of Kinesiotherapy, K J Somaiya College of Physiotherapy	Physiotherapy Evalution and Management with HJHS (Hemophilia Joint Health Score) and Evidence Based Approaches
		Dr. Prachi Sarvaiya (PT), Assistant Professor Department of Musculoskeletal Physiotherapy, K J Somaiya College of Physiotherapy	Physiotherapy Evalution and Management with HJHS (Hemophilia Joint Health Score) and Evidence Based Approaches

3	Exergaming in Physical Therapy: Transforming Balance Rehabilitation	**Dr Mugdha Oberoi (PT)** PhD, MPTh,PGDEGMA Neurosciences, Kinesio Taping & Dry Needling Practitioner, Assistant Professor KJSCPT,	1. Understand the Science of Balance. 2. Explore Exergaming in Physical Therapy 3. Target Balance and Coordination. 4. Integrate Exergaming into Practice 5. Review Evidence-Based Benefits 6. Hands-on session in using exergaming system
4	Advancing Pain Science: Protectometer Insights and Immune System Interactions	**Dr. Prakkash Sharoff (PT)** Director - PHYSIOHEALTH Pain Management & Performance Enhancement	1.Protectometer - Your Personal Pain Formula 2.DIM's & SIM's to Understand & Treat Pain 3. Immune System - The new player in Pain
5	Academic Writing and Research Tool ESBCO	**Gaurav Vinayak Date** Customer Training Specialist - EIS IEEE – Goa, Rest of Maharashtra, Andaman & Nicobar, Mumbai Region, Gujarat EBSCO – Goa & Rest of Maharashtra, Mumbai Region, Gujarat	1. To enhance understanding of academic writing principles. 2. To familiarize participants with the advanced features of EBSCOhost for research and publication. 3. To provide insights into improving manuscript quality and addressing publication challenges, and reason for publication rejections.
6	Evidence based Lymphedema Management: Translating Research into Practice	**Dr. Siddhi Ghodge (PT)** MPTh, PhD scholar, FAIMER M-FIILIPE Certified lymphedema therapist Practicing lymphedema management since past 7 years. Assistant Professor K J Somaiya College of physiotherapy	1. Understanding the current trends in lymphedema management 2. Critically evaluate the current research 3. Identify and implement the best practices in lymphedema
7	Brain Gym: Unlocking Cognition and Empowering Learning Pathways	**Dr. Sandesh Sakpal (PT)** MPT, MA Yogashashtra, Ph.D Scholar, Internationally licensed Brain Gym Movement Facilitator Assistant Professor K J Somaiya College of Physiotherapy	1.Understanding cognition and its Impairments 2. Introduction to concept of brain gym exercises 3. Review and evidence on Brain Gym Exercises 4. Demonstration and practical application, integration in life

Speakers

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Panel Discussion Panelists

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Sr. No. - 1 Code - C1P1

Title: Exploring Proprioceptive Imbalance in Unilateral Radiating Neck Pain- A comparative study.

Authors: 1. Dr. Moksha Shah and 2. Dr. Medha Deo
Affiliation:1. PG Student SIA College of Physiotherapy 2. Principal, Terna Physiotherapy College

Abstract:
Background: Proprioception, the sense of joint position and movement, is crucial for neuromuscular control. Unilateral radiating neck pain (URNP) can impair proprioception in the upper limb, disrupting functional movement and stability. This study evaluates the proprioceptive accuracy of the shoulder and elbow joints in individuals with URNP, comparing affected and unaffected sides.

Objectives: To compare proprioception of shoulder and elbow joints between the affected and unaffected sides in individuals with URNP and explore differences across specific joint angles.

Methodology: This observational, comparative study included 52 participants with URNP (ages 20-52, VAS pain scale 4-7, sub-acute stage). Joint position sense (JPS) of the shoulder (55°, 90°, 125°) and elbow (40°, 95°, 120°) was assessed using an inclinometer and standardised testing procedures under blindfolded conditions. Absolute errors were calculated and analysed using non-parametric tests.

Results: Significant proprioceptive deficits were observed in the affected side for both the shoulder and elbow ($p < 0.0001$). The shoulder exhibited greater deficits at 125°, followed by 55° and 90°. The elbow showed maximum impairment at 95°, followed by 120° and 40°. No statistically significant differences were found between dominant and non-dominant limbs.

Conclusion: URNP significantly affects proprioception, with higher deficits in the shoulder compared to the elbow. These insights underscore the necessity of proprioceptive rehabilitation strategies to enhance neuromuscular control, optimise functional recovery, and mitigate the risk of recurrent injury.

Keywords: Proprioception, unilateral radiating neck pain, joint position sense,

Sr. No. - 2 Code - C1P10

Title: Correlation of Pulmonary function With neck pain , disability and deep cervical flexor muscle strength in individuals with mechanical Neck pain

Authors: 1 Bhavana Mohota and 2. Dr sanket Mungikar Affiliation: 1. PG Student K J Somaiya College of Physiotherapy 2. Associate Professor, MGM Institute of Physiotherapy

Abstract:
Background: Neck pain is a common condition affecting around 70% of people, with women accounting for 43% and men for 30%. Known as mechanical neck pain, it involves discomfort from the superior nuchal line to the first thoracic spinous process. Chronic neck pain can result from strained muscles, repetitive motions, poor posture, improper workstations, genetic factors, and weak cervical muscles. The deep cervical flexors (DCF) are key for posture control, and their weakness, along with hypertrophy of superficial neck muscles, can worsen pain. Neck pain can also impact breathing, either by increasing respiratory drive or through medications that hinder breathing.

Objective: To find out relation between pulmonary function and neck pain, deep cervical flexor muscle strength and disability in individuals with mechanical neck pain.

Material and Methods: An observational study is done with convenient sampling between male and females of age group 20 to 55 years by using tools such as NPRS, pressure biofeedback, spirometer, Neck disability index, consent form and data collection Sheet. Total sample size is 57.

Result: correlation was done and we found out that individuals having mechanical neck pain have altered pulmonary function that affects their deep cervical flexors muscle strength and neck disability.

Conclusion: Present study shows that individuals having neck pain have altered pulmonary functions. This study concluded that pulmonary functions (FEV1, FVC, FEV1/FVC, PEF, VC) have a direct effect on deep cervical flexor muscle strength and neck disability.

Keywords
Neck Pain, Pulmonary Functions, Spirometer

Sr. No. - 3 Code - C1P11

Title: Knowledge and Practice about the Preventive measures of Text Neck Syndrome in Young adults: Providing a Digital well-being Solution

Authors: 1. Vidhi Doshi 2. Dr Nilima Bedekar,
Affiliation: 1. PG Student, K J Somaiya College of Physiotherapy 2. Professor, Sancheti Institute College of Physiotherapy

Abstract:
Background: Mobile phones have become an integral part of our lives and its global usage rise has led to significant health concerns, including “Text Neck,” a condition characterized by cervical spinal degeneration caused by prolonged forward head flexion while using mobile devices. Despite its prevalence, awareness of Text Neck syndrome and its preventive strategies remains limited among young adults.

Objectives: The study aims to assess people’s awareness of Text Neck syndrome, evaluate their knowledge of preventive measures, and understand whether they actively practice these measures. By examining these aspects, the study seeks to gain a comprehensive understanding of how well individuals recognize the condition and whether they take the necessary steps to prevent it.

Method: A cross-sectional study was conducted using convenience sampling. Data were collected through a self-structured, face-validated questionnaire consisting of 20 questions circulated via Google Forms. The inclusion criteria comprised males and females aged 18–30 years who use smartphones for a minimum of 2 hours daily. Participants from medical backgrounds or those with congenital cervical problems, cervical fractures, or other cervical spine injuries were excluded. Data were analyzed descriptively.

Results: A total of 243 participants were surveyed. Among them, 27.6% were aware of Text Neck syndrome, and 37.6% had knowledge of correct posture while using smartphones. While 45.3% reported using both hands for texting and holding phones, 56% did not use supportive devices to hold their phones. Additionally, 55% performed neck stretches and exercises occasionally, 74% did not use apps to limit phone usage, and 68.7% expressed the need for healthcare expert advice on Text Neck syndrome.

Conclusion: Young adults have limited knowledge of Text Neck syndrome and its prevention. This study highlights a significant awareness gap. To address this, we propose integrating digital well-being features in mobile phones to monitor screen time, remind users to correct posture and take breaks, and promote exercises. Combined with educational and healthcare interventions, these solutions can help reduce the risks of Text Neck syndrome.

Keywords: Text Neck, cervical spine, smartphone usage, posture, awareness, prevention

Sr. No. - 4 Code - C1P12

Title: Enhancing Functional Recovery Post-Total Knee Replacement Using Early Proprioceptive Training on Gait, Muscle Strength, and Pain.

Authors: 1. Dr. Anjali V. Nawkhare, 2.Dr. Pratik Phansopkar
Affiliation: 1. PG Student, Ravi Nair Physiotherapy College Wardha 2. Professor and HOD, School of Physiotherapy, Bharati Vidaypeeth, Sangli

Abstract:
Background: Osteoarthritis (OA) often results in total knee replacement (TKR), but post-TKR recovery faces challenges like reduced proprioception, muscle weakness, and limited mobility. Structured rehabilitation incorporating proprioceptive training and Combined kinematic chain exercises (CCE) is essential for improving balance, strength, mobility, gait and overall recovery, ultimately enhancing the patient's quality of life and functional independence.

Objective: To evaluate the effectiveness of combining early proprioceptive training with CCE in improving recovery outcomes post-TKR.

Method: This case report describes a 68-year-old TKR patient with grade 3 knee OA who underwent TKR, an eight-week structured physiotherapy program incorporating CCE & early proprioceptive training. The intervention focused on reducing pain, improving ROM, muscle strength, and early gait training. Outcomes were evaluated pre- and post-intervention using the Numerical Pain Rating Scale (NPRS), knee ROM, muscle strength assessment, Timed Up and Go test, and gait analysis (using Xsens), demonstrating significant recovery improvements.

Result: The intervention resulted in significant improvements: pain reduction (NPRS from 8/10 to 2/10), increased knee ROM (flexion improved from 0–50° to 0– 128°), enhanced muscle strength (from 2+/5 to 4/5), and improved mobility (Timed Up and Go test reduced from 27 to 15 seconds). Gait evaluation using Xsens showed notable motion, stability and alignment improvements.

Conclusion: This case study emphasizes the benefits & effectiveness of a structured physical therapy program combining early proprioceptive training and CCE in post-TKR recovery. It significantly enhances pain relief, knee range of motion, muscle strength, balance & gait, promoting functional independence and improved quality of life. Xsens technology supports gait evaluation and rehabilitation, optimising recovery outcomes for TKR patients.

Keywords
Rehabilitation, knee joint, balance training, Xsens, total knee replacement.

Sr. No. - 5 Code - C1P13

Title: The Effect of Physiotherapy Rehabilitation on Abdominal Core Muscle Strength and Pain Reduction in a Patient with Knee Osteoarthritis

Authors: 1.Dr. Nikita Pravin Bhusari 2. Dr. Subrat Samal
Affiliation: 1. PG Student, Ravi Nair Physiotherapy College, Wardha 2. Professor, Ravi Nair Physiotherapy College, Wardha

Abstract:
Background :Osteoarthritis (OA) is one of the most prevalent musculoskeletal conditions among the elderly. The condition of knee osteoarthritis (OA) results in joint pain, stiffness, and decreased function of the knee joint. Studies have shown that the management of condition is limited to the impaired area, but can lead to further secondary impairments in other joints or structures. Knee OA affects abdominal core muscles through altered biomechanics and compensatory posture, weakening them over time. This paper addresses rehabilitation strategies for adults with osteoarthritis of the knee, particularly focusing on the core muscle strengthening.

Objective: To implement a structured physiotherapy rehabilitation program targeting core muscle strengthening and pain management.

Method: A 63-year-old female with right knee pain, stiffness, & di culty walking experienced limited daily activities due to her symptoms. She underwent a 6- week rehabilitation program focusing on core strengthening and conventional exercises. Outcomes, including the Numerical Pain Rating Scale (NPRS), WOMAC Index, & muscle strength via pressure biofeedback unit, were assessed pre- and post-rehabilitation.

Result: The patient's pain score on the NPRS decreased from 6/10 to 4/10 after 6 weeks. The WOMAC score improved from 58/96 to 45/96. Core muscle strength, measured by the Pressure Biofeedback Unit, increased from 40 mmHg to 55 mmHg over the rehabilitation period.

Conclusion: This report explores the effectiveness of physiotherapy rehabilitation in reducing pain and restoring core muscle strength in knee osteoarthritis (OA) patients. Exercise therapy has shown significant benefits in pain relief and abdominal core muscle strength. Incorporating core strengthening into rehabilitation can enhance these outcomes. This case report concludes that physiotherapy is beneficial for managing knee OA.

Keywords
Knee osteoarthritis, pain, abdominal core muscles, pressureBiofeedback Unit (PBU).

Sr. No. - 6 Code - C1P14

Title: Effect Of MBCT (Mindfulness Based Cognitive Therapy) With standard physiotherapy care versus standard Physiotherapy Care alone on chronic low back pain with alexithymia-an experimental study

Authors: 1. Heena Advani 2. Dr. Sneha Ganu (PT)
Affiliation: 1. PG Student, K J Somaiya College of Physiotherapy 2. Associate Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: Chronic pain has multidimensional nature in addition to the nociceptive and psychological aspects , it also includes emotional and cognitive spheres. Alexithymic individuals are those that have significant di culty in describing their emotions, di culty understanding emotions and external oriented thinking usually facing more difficulty in the first two.

Aim & Objectives: To study and compare the effect of MBCT along with standard physiotherapy care versus standard physiotherapy care alone on CLBP with alexithymia using Toronto Alexithymia scale(TAS 20) and disability using Modified Oswestry Disability Index (MODI).

Materials & Methodology: Participants with chronic low back pain in the age group of 18-50 years who understand English and have a TAS score of more than 52 were recruited and randomly assigned to two groups of MBCT with Standard physiotherapy and Standard physiotherapy over a period of four weeks.

Result: Post-intervention mean value of TAS 20 was lower in the MBCT group showing statistical significance p=0.036. However, post-intervention MODI values were similar in both the group showing no statistical significance

Conclusion & Clinical Implication: MBCT Along with Standard Physiotherapy care reduces alexithymia as compared to Standard Physiotherapy care alone. Integrating MBCT with conventional physiotherapy can improve coping mechanisms thereby improving adherence to treatment and disability due to standard physiotherapy care.

Keywords: MBCT,Alexithymia,Chronic Low Back Pain,Physiotherapy

Sr. No. - 7 Code - C1P15

Title: Correlation Between Agility and Dynamic Balance in Recreational Squash Players: A Cross-Sectional Analytical Study

Authors: 1. Spandita Satyen Deokule 2. Dr. Priti Mehendale (PT)
Affiliation: 1. PG Student, K J Somaiya College of Physiotherapy 2. Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: Squash is a high-intensity racquet sport played in a four-walled court, demanding agility, balance, strength, endurance, and strategic thinking. Originating from 18th-century London prisons, it has evolved into a globally recognized sport and will be included in the 2028 Olympics. The game requires rapid directional changes, lunging movements, and dynamic balance to enhance performance and prevent injuries. Balance training improves stability, reduces joint stress, and enhances coordination, ultimately benefiting agility. Squash also promotes cardiovascular fitness, mental well-being, and social engagement. This study aims to explore the relationship between agility and dynamic balance in recreational squash players to optimize training strategies.

Aim
To study the correlation between agility and dynamic balance in recreational squash players aged 20-50 years.
Objectives
1. To assess agility using the T-test in recreational squash players aged 20-50 years.
2. To evaluate dynamic balance using the Y Balance Test for the lower quadrant
3. To analyze the correlation between agility and dynamic balance in recreational squash players aged 20-50 years.

Materials & Methods: This cross-sectional analytical study involved 84 recreational squash players. Participants were recruited from sports clubs and communities using sequential sampling. Agility was measured via the T-test, while dynamic balance was evaluated using the Y Balance Test for the lower quadrant.

Result: Total of 20 participants were taken. Pearson test showed weak negative correlation between the modified agility T-test and YBT-LQ composite score($p>0.05$)

Conclusion: There is a correlation between agility and dynamic balance, making balance a crucial component of fitness for squash players. Given the sport's demands for rapid directional changes, quick reflexes, and precise footwork, physical therapists, coaches, and trainers should incorporate balance training exercises into training routines to enhance dynamic balance, improve agility, and optimize overall performance on the court.

Keywords: Recreational Squash Players, Agility, Dynamic Balance, Injury Prevention

Sr. No. - 8 Code - C1P2

Title: Assessment of functional performance and flexibility among adolescent kickboxers; a cross sectional study.
Authors: 1. Aditi Rakesh Jain 2. Dr. Anjali Puntambekar 3. Dr. Asmita Karajgi Affiliation: 1. PG Student SIA College of Physiotherapy 2. Professor and HOD, SIA College of Physiotherapy 3. Principal, SIA College of Physiotherapy

Abstract:
Background: Kickboxing is a relatively new sport event,which is described as a stand-up combat sport based on kicking and punching,which takes place in a ring. The traditional martial arts, like the techniques from karate, Thai kickboxing, taekwondo, and Kung Fu are the origin of this game. Kickboxing requires strength, flexibility, stamina, fitness, and mental agility. Flexibility and strength of lower quarter form a prerequisite of good performance. This study was undertaken to get better insight into the assessment of lower limb power, strength, stability, and flexibility among adolescent Kickboxers.

Aim
To assess functional performance and flexibility levels among adolescent kickboxers.

Objectives
To assess functional performance using the Triple Hop Distance Test; To assess flexibility using the Sit and Reach Test.

Method
A cross-sectional observational study was conducted among 50 kick boxers aged 15 to 18 years old from different training centers, in and around Dombivli. The functional performance was assessed based on the Triple Hop Distance (THD) test and flexibility was assessed based on the Sit and Reach test (SRT) results.

Results: The SRT showed that the participants with more experience had a tendency to be more flexible than participants with comparatively less experience. The THD showed that out of the 50 participants, only 15 of them covered the normative distance with both lower limbs. The rest of them either covered reduced distance with one or both lower limbs.

Conclusion: The study concluded that the functional performance levels among the adolescent kick boxers were low and so were the levels of flexibility among them.

Keywords: Sit and reach test; triple hop distance test; kick boxers; functional performance; flexibility; hamstrings.

Sr. No. - 9 Code - C1P3

Title: Assessment of Pain, Quality of Life, Kinesiophobia & Functional Impairments in Patients with Haemophilia: An Observational Study

Authors: 1. Dr. Prachi kantela 2. Dr. Hina Jain

Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Associate Professor, K J Somaiya College of Physiotherapy

Abstract:

Background: Haemophilia is a genetic haemorrhagic disorder characterized by defects in clotting factors VIII or IX, leading to recurrent joint bleeds, pain, and musculoskeletal impairments. These complications severely affect patients' functional independence and quality of life (QoL). Despite significant advancements in haemophilia management, limited studies focus on the role of pain, kinesiophobia, and functional impairments in the Indian haemophilia population. This observational study seeks to provide a comprehensive assessment using standardized outcome measures

Objective. To evaluate pain, QoL, kinesiophobia, and functional impairments in patients with haemophilia.

1. To assess pain using the Nordic Musculoskeletal Questionnaire.
2. To measure QoL using SF-12.
3. To evaluate kinesiophobia using the Tampa Scale of Kinesiophobia.
4. To assess functional impairments using the Functional Independence Score in Haemophilia (FISH).

Method

This observational study was conducted on 30 haemophilic patients aged 18–50 years. Participants meeting inclusion criteria provided informed consent and completed standardized
questionnaires via telephone or Google Forms. Data were analysed using descriptive statistics, and results were represented through charts and tables.

Result

The study revealed that 50% of patients had knee joint impairments and 43.33% experienced elbow pain. All participants showed moderate levels of kinesiophobia and decreased QoL, as per the SF-12. Functional impairments varied, with only 15% fully independent in activities.

Conclusion

The study highlights significant musculoskeletal impairments, pain, and kinesiophobia contributing to reduced QoL in haemophilic patients. The Nordic Musculoskeletal Questionnaire, Tampa Scale, SF-12, and FISH were effective tools in assessing these domains, emphasizing the need for tailored interventions to improve patient outcomes .

Keywords: Haemophilia, Pain, Quality of Life, Kinesiophobia, Functional Impairment

Sr. No. - 10 Code - C1P4

Title: Immediate effect of Myofascial Decompression versus Self Myofascial release on agility & power in semi-professional Football players with hamstring tightness- a single blinded Randomized Controlled Trial

Authors: 1. Dr. Snehal Jain 2. Dr. Rupali Shevalkar
Affiliation: 1. PG Student K J Somaiya College of Physiotherapy 2. Associate Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: Football, a widely popular sport, has a high youth participation rate but faces frequent hamstring injuries, accounting for 10% of all field-sport injuries, significantly impacting performance. Techniques like self-myofascial release (SMR) improve range of motion, agility, and injury prevention. Myofascial Decompression (MFD), derived from cupping therapy, uses decompression forces to address soft tissue and mobility issues. MFD is a novel technique with limited research on its effects on agility and power.

Aim and Objectives: This study aimed to compare the immediate effects of MFD and SMR on agility and power in semi-professional football players with hamstring tightness using the Illinois Agility Test and Vertical Jump Test, respectively.

Methodology: A single-blinded Randomized Controlled Trial was conducted on 100 semi- professional football players aged 18–25 years with a minimum of 3 years of experience and hamstring tightness. Players with recent surgeries, injuries, or medical conditions were excluded. Subjects were randomly allocated via SNOOSE into two groups: MFD and SMR. Pre- and post-treatment assessments were conducted using agility and jump tests. Statistical analysis was performed.

Results: Data from 17 athletes [8 males (20.6± years, 184.9±cm, 90.8±kg) and 9 females (20.5±years, 167.1±cm, 62.7±kg)] were analyzed. The Illinois Agility Test showed a significant decrease in test time for the MFD group immediately post-treatment ($p = 0.033$), indicating MFD's impact on agility. However, no considerable differences were observed in vertical jump height, suggesting limited effects on muscle power.

Conclusion: Both MFD and SMR demonstrated acute benefits in improving agility after a single treatment. However, data on muscle power effects remain inconclusive. This study contributes scientifically to limited research on myofascial release techniques and their direct effects on muscle agility and power.

Keyword: sagility, power, myofascial decompression

Sr. No. - 11 Code - C1P5

Title: Effectiveness of Passive Neural Mobilization in Patients with Chronic Radicular Low Back Pain—A Randomized Controlled Trial

Authors: 1. Sailee Pomendkar 2. Dr. Sudarshini Gaikwad
Affiliation: 1. PG Student of SIA College of Physiotherapy 2. Assistant Professor, Navyuva Institute of Physiotherapy, Bhandara

Abstract:
Background: Around eighty percent of the population is likely to develop persistent low backache (CLBP) at some point in their lives, which has an enormous detrimental effect on routine and the level of life. One of the most frequent complaints that a spine surgeon evaluates is lumbar radiculopathy. Age is a major risk factor since it develops as a result of the spinal column's degenerative process. Men are usually impacted in their 40s, while women are affected in their 50s and 60s. There are more men than women in the general population. Lumbar radiculopathy is primarily caused by degenerative spondyloarthropathies.

Objectives: The purpose of this study was to evaluate how e ciently lumbar stabilization exercises and passive neural mobilization complement each other to alleviate pain and functional disability in patients with chronic radicular low back pain.

Method: Twenty-seven participants with chronic radicular low back pain, ages 18 to 75 years old, were included in a randomized controlled trial. Two groups of participants were formed: the experimental group (neural mobilization with lumbar stabilization) and the control group (lumbar stabilization only). Over a span of eight weeks, each group had sixteen treatment sessions. Disabilities and pain were evaluated both prior to and following the intervention using the Oswestry Disability Index (ODI) and Visual Analogue Scale (VAS).

Results: Pain and disability levels significantly improved for both groups. Contrary to the control group, the experimental group revealed better outcomes, such as decreased pain intensity and improved functional status.

Conclusion: Passive Neural Mobilization is effective to reduce low back pain in patients with Chronic Radicular Low Back Pain.

Key Words: Passive Neural Mobilization, Low Back Pain

Sr. No. - 12 Code - C1P7

Title: Scoping Review on Shoulder Proprioception in Diabetes Mellitus

Authors: 1. Sabiha Begam 2. Dr. Mamta Shetty (PT) Affiliation: 1. PG Student, MGM School of Physiotherapy, Navi Mumbai 2. Associate Professor, MGM School of Physiotherapy, Navi Mumbai

Abstract:

Background: Type 2 Diabetes Mellitus (T2DM) is a persistent metabolic disease that leads to numerous complications, with its effects extending to several systems in the body,particularly the musculoskeletal system. While the impact of T2DM on lower- limb proprioception and balance is well-documented, limited research exists on its effects on shoulder proprioception, despite the shoulder's vital role in upper- limb functionality. Proprioceptive deficits in T2DM are exacerbated by chronic hyperglycemia-induced peripheral neuropathy, potentially impairing joint stability and increasing the risk of musculoskeletal injuries.

Aim & Objectives

This scoping review aimed to:

1. Explore the scope of research on shoulder proprioception in individuals with T2DM.
2. Identify relationships between glycemic control (HbA1c levels) and shoulder proprioception.
3. Highlight the clinical implications of shoulder proprioceptive deficits and suggest future research directions.

Method: Using the PRISMAScR checklist, a comprehensive search across multiple databases (e.g., PubMed, Scopus) identified studies published between 2014 and 2024 focusing on shoulder proprioception in individuals with DM. After screening, 25 studies met inclusion criteria. Data extraction and quality appraisal followed standardized protocols, with narrative synthesis summarizing findings due to heterogeneity in study designs and outcome measures.

Results

The review revealed significant shoulder proprioceptive deficits in individuals with T2DM, often linked to poor glycemic control. Elevated HbA1c levels correlated with impaired joint position sense (JPS), affecting movements critical for daily activities. These findings underline the interplay between diabetic neuropathy and proprioceptive feedback mechanisms.

Conclusion

Shoulder proprioception is notably impaired in T2DM, with deficits contributing to functional limitations and increased injury risk. Interventions focusing on proprioceptive training and glycemic control are essential for mitigating these impairments. Future research should address underlying mechanisms and develop targeted strategies to improve shoulder proprioception in individuals with diabetes mellitus.

Keywords: Diabetes mellitus, shoulder proprioception, glycemic control (HbA1C)

Sr. No. - 13 Code - C1P8

Title: Correlation between waist hip ratio and hamstring flexibility in healthy individuals 18-35 years of age.

Authors: 1. Kirta Melwani 2. Dr. Swati Nerkar (PT)
Affiliation: 1. PG Student K J Somaiya College of Physiotherapy 2. Assistant Professor, K J Somaiya College of Physiotherapy

Abstract:
Background : Flexibility is the ability of a joint or series of joints to move through an unrestricted, pain free range of motion. A higher risk of muscle injury, decreased lumbar lordosis, and low-back pain were reported to be associated with reduced flexibility of hamstrings. The YMCA sit and reach test is a field test used to measure hamstring and low back flexibility. In obese individuals, flexibility is progressively diminished, and accumulation of fat around the abdomen is a more important risk factor than around the hips. The waist-hip ratio is an indicator of this type of body-fat distribution.

Objectives : To assess the waist and hip circumference, then calculate waist hip ratio. To assess hamstring flexibility using YMCA sit and reach test and then to correlate waist hip ratio with hamstring flexibility.

Method: 100 asymptomatic individuals between the age group of 18 to 35 years of age were recruited for the study using convenient sampling. Hamstring flexibility was assesed using YMCA Sit and Reach Test and Waist Hip Ratio was calculated with tape measure. Data was analysed using statistical analysis.

Result : Data and statistical analysis (spearman's rank coe cient) showed that waist hip ratio and hamstring flexibility were found to have no significant relationship in the studied population as indicated by the correlation values [P value = 0.1088 (>0.05) ; r value = +0.1614]

Conclusion : Data analysis showed non significant correlation between waist hip ratio and hamstring flexibility in the given study population .

Keywords: waist hip ratio, hamstrings, flexibility, YMCA sit and reach test.

Sr. No. - 14 Code - C1P9

Title:Effect of talonavicular mobilization with intrinsic muscle exercises on dynamic balance and navicular drop height in young adults with pes Planus

Authors: 1. Meghana Khadilkar , 2. Rutuja Shardul, 3. Mrunmayee Mande Affiliation: PG Student K J Somaiya College of Physiotherapy 2. PG Student, Dr. Ulhas Patil College of Physiotherapy 3. Professor, MVP's College of Physiotherapy, Nashik

Abstract:
Background: Pes planus, or flat feet, affects foot biomechanics, leading to issues like increased navicular drop and impaired dynamic balance. Talonavicular joint mobilization and intrinsic
muscle exercises may improve foot function. This study explores the combined effect of these interventions on navicular drop and dynamic balance in young adults with pes planus.

Aim: To evaluate the effect of talonavicular mobilization along with intrinsic muscle exercises on dynamic balance and navicular drop height in young adults with pes planus.

Objectives: To determine whether the combination of talonavicular mobilization and intrinsic foot exercises improves dynamic balance and reduces navicular drop height.

Material & Methods: 30 participants aged 18–30 with pes planus (navicular drop test positive) were selected. Participants were excluded if they had recent lower limb injuries, congenital deformities, or neurological/pathologicaL issues. The intervention included talonavicular mobilization (20 repetitions, 3 sets, 2–5 times a week for 3 weeks) and five intrinsic foot exercises (towel curls, short foot exercises, toe extension, marble pickup, toe spread-out). These exercises progressed from non-weight-bearing to weight-bearing.

Result: Post-intervention, the mean Y-Balance Test score significantly increased from 71.2 to 78.75 ($p<0.0001$), and navicular drop height reduced from 11.60 to 9.07 ($p<0.0001$), both statistically significant.

Conclusion: Talonavicular mobilization along with intrinsic muscle exercises effectively reduced navicular drop height and improved dynamic balance in young adults with pes planus.

Keywords: Pes Planus, Talonavicular Mobilisation, Dynamic Balance, Intrinsic Muscle Exercise, Navicular Drop Test.

Sr. No. - 15 Code - C1P16

Title: Comparison between the Immediate Effects of Autogenic and Reciprocal Inhibition Techniques on Pain Relief in Participants with Nonspecific Low Back Pain using Visual Analog Scale.

Authors: 1. Vaishnavee Pradeep Sawant 2. Dr.Snehal Ghodey (PT)
Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Principal, MAEER's College of Physiotherapy

Abstract:
Background: This study compares autogenic training and reciprocal inhibition methods for fast pain relief in nonspecific low back pain (NSLBP) patients. It evaluates effectiveness using pain assessment tools, potentially improving clinical management and patient satisfaction.

Aim and Objective: To compare the immediate effects of autogenic and reciprocal inhibition techniques on nonspecific lower back pain (NSLBP)using visual analogue scale.

Method: An experimental study involving 28 participants was randomly assigned to either Autogenic Inhibition (group 1) or Reciprocal Inhibition (group 2). Each group received one session (five repetitions) of the respective technique along with conventional therapy. Pain levels were measured using a Visual Analog Scale before and after the interventions. Data Analysis with Descriptive statistics (mean, standard deviation), Mann-Whitney test for between-group comparisons, and Wilcoxon matched-pairs test for within-group changes.

Results: Both Autogenic and Reciprocal Inhibition techniques led to significant reductions in pain levels immediately following the interventions. In the Autogenic Inhibition group, pain decreased significantly from pre-intervention levels ($p < 0.05$). In the Reciprocal Inhibition group, pain also significantly decreased following the intervention ($p < 0.05$). There were no significant differences in the immediate effects on pain relief between the Autogenic and Reciprocal Inhibition groups ($p > 0.05$)

Conclusion: Both Autogenic and Reciprocal Inhibition techniques demonstrated significant immediate pain relief effects in individuals with nonspecific low back pain. No significant difference was found between the two techniques. These findings suggest both techniques are effective for rapid pain relief in NSLBP and could be considered as complementary options in clinical practice.

Keywords: Nonspecific Low Back Pain, MET, Autogenic inhibition technique, Reciprocalinhibition techniques

Sr. No. - 16 Code - C2P1

Title: Efficacy of Otago Exercise Program on balance and gait in individuals with Parkinson's disease – a scoping review

Authors: 1. Dr. Dhwani B Parekh (PT) 2. Dr. Shrutika Parab (PT) 3. Dr. Amrita Ghosh (PT) 4. Dr. Aamreen Ryain (PT)
Affiliation: 1. PG Student, MGM School of Physiotherapy 2. Associate Professor, MGM School of Physiotherapy 3. Associate Professor, MGM School of Physiotherapy 4. Assistant Professor, MGM School of Physiotherapy

Abstract:
Background: The prevalence of Parkinson's disease (PD) is 70/100,000 people in India. It is a progressive neurological disorder characterized by motor impairments that lead to an increased risk of falls and majorly impact functional mobility and quality of life. Otago Exercise Program (OEP) is a fall prevention program consisting of strength, and balance exercises and a walking program. It has recently drawn interest for its potential to help people with PD improve their balance and gait.

Aims and Objectives
This scoping review aims to explore the effects of OEP on balance and gait in individuals with Parkinson's disease.

Method
This study was conducted according to the PRISMA—ScR guidelines. Databases searched for review were Google Scholar, PubMed, CINAHL, and Cochrane using the keywords "Parkinson's disease", "Otago exercise program", and "Balance".
Studies on the effect of OEP on functional outcomes in individuals with PD were included. Methodological quality was assessed using PEDro scale, and the risk of bias was assessed using the Cochrane risk of bias tool.

Result
This review includes five articles. The mean age of subjects across all studies was 62.9 ± 3.49 years across variable Hoehn and Yahr stages from 1 to 4. Three studies focused on balance using outcome measures TUG test, FAB scale, and BBS, showing a significant difference ($p<0.00$). The methodological quality of one study was poor, and 2 studies were good according to the PEDro scale. Two studies focusing on gait showed significant improvement ($p<0.001$) with methodological quality for one study being fair and other being good.

Conclusion
The OEP is an affordable and flexible strategy that demonstrates substantial benefits for improving gait and balance issues in patients with PD. Further research with high methodological quality, larger sample sizes, and long-term follow-up is recommended to confirm and extend these findings.

Keywords
Otago exercise, Parkinson's disease, Balance, Gait

Sr. No. - 17 Code - C2P2

Title: Indian Guidelines of hip surveillance in Cerebral palsy: Awareness, knowledge and practice amongst physiotherapists.

Authors: 1. Dr.Urja Jitesh Shah (PT), 2. Dr.Twinkle Kundnani(PT) Affiliation: 1. PG Student K J Somaiya College of Physiotherapy 2. Associate Professor, Sancheti Institute College of Physiotherapy

Abstract:

Background: Cerebral palsy is a group of nonprogressive disorders affecting the development of movement and posture in the fetal or infant brain. In CP due to delayed motor development and decreased weight bearing on the joints, causes progressive hip displacement, which often goes unnoticed until the hip is dislocated. Thus, Hip surveillance-process to identify children “at risk” and monitor early signs of hip displacement through systematic screening. In children with CP, hip displacement is the 2nd most common musculoskeletal deformity with an incidence of 35% and in every 1 in 3 children develop hip displacement leading to pain, loss of function, inability to sit, stand or walk, reducing QOL and increases burden of care. Early identification by physiotherapists, prevents progression of pathologies and reduces no. of surgeries.

Aim and Objectives

Physical therapists play a crucial role in the implementation of hip surveillance for cerebral palsy. With the rising incidence of displacement and lack of hip screening, we aim to assess the awareness, knowledge, and practice of Indian physiotherapists regarding Indian guidelines of hip surveillance for children with CP and identify barriers to clinical implementation.

Method

A cross-sectional study involving 114 physiotherapists were included. A self-designed validated questionnaire was circulated among the participants. Data analysed by descriptive statistics.

Result

Out of 114 participants, 91% encountered hip pathologies while treating CP children, 66% were aware of ‘hip surveillance’ whereas only 46% knew about National guidelines. 70% showed the importance of regular surveillance while only 39% reported practising surveillance according to National guidelines.

Conclusion

Clinically practising physiotherapists understand the importance of preventing hip pathologies through timely surveillance. However, there’s a lack of knowledge about national surveillance guidelines affecting the implementation in clinical practice to monitor hip regularly. At a societal level, we can create awareness of hip surveillance, thereby decreasing practice variation and improving the quality of care delivered.

Keywords

Hip, Hip surveillance, National guidelines, Cerebral palsy, Hip displacement, GMFCS levels

Sr. No. - 18 Code - C2P3

Title: Exploring the effect of keeogo exoskeletal combing with conventional physiotherapy in acute stroke patient: A Case Report

Authors: 1. Dr. Nikita Zanwar 2. Dr. Subrat Samal, 3. Dr. Shruti Deshpande, 4. Dr. Mansi Subhedar Affiliation: 1. PG student, Ravi Nair Physiotherapy College 2. Professor, Ravi Nair Physiotherapy College 3. Assistant Professor, Ravi Nair Physiotherapy College 4. Assistant Professor, Ravi Nair Physiotherapy College

Abstract:
Background: Stroke is a leading cause of long-term disability worldwide, often resulting in impaired motor function, quality of life, and significant challenges to rehabilitation. Recent advancements in rehabilitation technologies, such as exoskeletal therapy, have significantly enhanced motor recovery when combined with conventional physiotherapy. This case report explores the combined effect of exoskeletal therapy and traditional physiotherapy in an acute stroke patient.

Aim
To evaluate the effectiveness of combining Keeogo exoskeletal with conventional physiotherapy in enhancing motor recovery and functional outcomes in an acute stroke patient.

Objectives
To assess the impact of exoskeletal therapy on motor function and strength in a patient with acute stroke.
To evaluate improvements in functional mobility and independence using combined rehabilitation approaches.
To compare pre- and post-intervention outcomes through standardized assessment tools such as the Functional independence measure, Modified Ashworth scale (MAS), 30 sec sit-to-stand test, and Tinetti assessment tool
To explore the feasibility and patient compliance with the integration of exoskeletal technology in stroke rehabilitation.

Method
A single case study was implemented to evaluate the effect of combining keeogo exoskeletal therapy with conventional physiotherapy in acute stroke patients. Consent was taken.

Result
Significant improvements were observed in motor recovery and functional independence in the patient from 70/126 to 100/126, Reduced in spasticity from 3 to 1+ according to the modified Ashworth scale, In 30 sec sit to stand test patient performed 6 repetitions after the treatment 12 sit to stand was performed enhanced lower limb strength and endurance, Balance and Gait also improved by Tinetti Assessment tool.

Conclusion
Combining Keeogo exoskeletal therapy with conventional physiotherapy demonstrated potential in accelerating recovery and functional gains in acute stroke rehabilitation.

Keywords: Stroke rehabilitation, exoskeletal therapy, conventional physiotherapy, motor recovery, functional outcomes.

Sr. No. - 19 Code - C3P1

Title: Respiratory complaints and assessment of Lung function using Peak Expiratory Flow Rate (PEFR) in Veterinary Doctors and Technicians.

Authors: 1. Bhargavi Bhat. 2. Ankita Shejwadkar 3. Dr. Asmita Karajgi Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Assistant Professor, SIA College of Physiotherapy 3. Principal, SIA College of Physiotherapy

Abstract:
Background: The veterinary doctors & technicians have daily exposure to pet animals as part of their occupation. A study done in the year 2021 showed that airway diseases were most frequently reported in veterinary doctors with COPD & asthma with 29% of the cohort having spirometric obstruction. Veterinary doctors and technicians are at a high risk of developing respiratory diseases. Study done in the year 2019 on the pet owners showed that there is a significant reduction in PEFR values in them as compared to those not having pets. It is thus imperative to evaluate their lung function & thereby help in identification of any risk for respiratory disorders. Hence, this study aimed to assess respiratory complaints & lung function in veterinary doctors and technicians of age 25-45.

Aim and Objectives: To evaluate lung function using PEFR among veterinary doctors and technicians of age 25 to 45 years.

Method
Data was collected from veterinary clinics in the vicinity. Study was conducted on 50 veterinary doctors & technicians of age group 25 to 45. Respiratory complaints & knowledge of respiratory diseases was assessed using self-derived & validated questionnaire. Assessment of lung function was done using PEFR. The observed values of PEFR of each participant was compared with predicted values which were calculated using formula.

Result: The mean age of participants in study was 31.1± 5.700018 years. Rhinitis, sinusitis and breathlessness were the most common respiratory complaints in the veterinary population with awareness among 62% of the study population about respiratory problems. Mean observed PEFR was 451.08±120.7 litre/min & predicted PEFR had a mean value of 446.2±96 litre/min which showed non-significant differences statistically.

Conclusion: The study concludes that Rhinitis, sinusitis and breathlessness are most common respiratory complaints & lung function is not affected in veterinary doctors & technicians.

Keywords:
Peak Expiratory Flow Rate, PEFR, Lung Function, Veterinary doctors, Veterinary technicians.

Sr. No. - 20 Code - C3P10

Title: Association between Chest Expansion and Pulmonary Function Testing in healthy children in 8 – 15 years of age group.

Authors: 1. Bhavika Dungarwal, 2. Dr. Aditi Soman, 3. Yash Chaudhary Affiliation: 1. PG Student, DES Brijlal Jindal College of Physiotherapy 2. Associate Professor, DES Brijlal Jindal College of Physiotherapy 3. Clinical Therapist, Iphysio and Healyos

Abstract:
Background: Pulmonary function test (PFT) is a gold standard outcome measure used to assess lung volumes and capacities. It has limitations as it is effort dependent, needs good cognition and sophisticated equipment, time consuming, higher cost. Whereas, Chest Expansion assessment (CE) by inelastic inch tape, is an easy to perform bedside tool. If correlation of these is found, it will lead to easier, cost-effective diagnosis, easier monitoring and management of children suffering from respiratory impairment due to any reason. As literature pool lacks evidence about correlation of chest expansion and pulmonary function test in adolescent age group, this study aims to correlate between chest expansion and PFT in healthy children in 8-15 years of age group

Aim and Objectives: To correlate between chest expansion and pulmonary function test in healthy children in 8-15 years of age group.

Method
In this cross-sectional study in which 85 adolescents between 8 to 15 years of age with boys and girls having normal BMI were recruited. Chest expansion as measured by inch tape at the end of maximal exhalation and inhalation with participants in sitting position. The same participants performed PFT according to guidelines given by American Thoracic Society and European Respiratory Society. Values of FEV1, FVC, FEV1/FVC & MVV were recorded and the data was analyzed to find correlation between various parameters of PFT and CE at three levels i.e. at 2nd, 4th, 6th intercostal spaces.

Result
Out of 85 participants (40 Girls & 45 Boys) forced vital capacity, forced expiratory volume in one second, maximal voluntary ventilation shows a positive correlation with chest expansion on all the three levels i.e., 2nd, 4th, 6th intercostal space with p value of <0.01 but, FEV1/FVC ratio shows negative correlation with chest expansion on all the three levels (2nd, 4th, 6th ICS) with p value of 0.160, 0.100, 0.167 respectively.

Conclusion
A significant association is found between chest expansion and Pulmonary function testing (FEV1,FVC, MVV) in healthy children in 8 – 15 years of age group.

Keywords: Adolescent between 8-15 years, chest expansion, lung volume and capacities, PFT.

Sr. No. - 21 Code - C3P11

Title: Assessment of Respiratory parameters in Flute playing and Non Flute playing School children in the age group of 10-15 years: A Comparative Study.

Authors: 1. Tanvi Tote, 2. Sneha Waydande, 3. Dr Aditi Soman Affiliation: 1. PG Student, DES Brijlal Jindal College of Physiotherapy 2. Clinical Therapist, Wockhardt Hospital 3. Associate Professor, DES Brijlal Jindal College of Physiotherapy

Abstract:
Background: Children playing wind instruments, especially the flute, may experience respiratory overload due to the high pressure required for performance. This strain can affect respiratory function. Flutists learn to control both active and passive forces to manage airflow during play. While playing low-pressure instruments, inspiratory muscles counterbalance the expiratory forces. This study aims to assess the impact of flute playing on respiratory parameters such as ventilatory function (PEFR), chest expansion, respiratory muscle strength (using micro RPM), and breath hold time in children aged 10-15, comparing flute players and non-players.

Aim & Objective: To assess respiratory parameters in flute playing and non- flute playing school children in the age group of 10 - 15 years..

Method: It is a comparative study in which 90 school children in the age group of 10-15 years will be categorised into two groups i.e one of flute playing case group (n=42) also with 1-3 years of playing experience and the other of non flute playing control group (n= 45) .Both the groups are assessed for MIP(maximal inspiratory pressure) and MEP(maximal expiratory pressure)with MICRO RPM, chest expansion , PEFR and breath hold time.

Result: Out of 87 participants (56 boys and 31 girls) MIP and MEP, chest expansion, peak expiratory flow rate, breath hold time with p value <0.0001 shows an extremely significant difference between case and control group.

Conclusion: The flute playing children have significantly higher respiratory parameters like MIP, MEP , chest expansion , PEFR and breath hold time when compared to non flute playing children, which further implies that flute playing can be given in a form of respiratory muscle training .

Keywords: Flute , School children in the age of 10-15 yearsBreath hold time, MIP and MEP , Respiratory muscle strength, PEFR .

Sr. No. - 22 Code - C3P12

Title: Awareness Of Basic Life Support Amongst Fitness Trainers In Pune

Authors: 1. Sejal Doshi and 2. Dr. Harshada Sonawane
Affiliation: 1. PG student at KJ Somaiya College of Physiotherapy 2. Professor, DES Brijlal Jindal College of Physiotherapy

Abstract:
Background: BLS is recognition of signs , CPR and use of AED. Recently sudden cardiac death & myocardial infarction in asymptomatic individuals have been increased dramatically during or after vigorous activity. Survival rate could increase if fitness trainers are well versed with Basic life support techniques and can properly deliver it till the patient reaches the medical facility.

Objective: To assess awareness about BLS amongst fitness trainers using a self developed questionnaire.

Method: Questionnaire was developed and tested for face validity, construct validity and content validity. 84 fitness trainers from different fitness clubs were interviewed using this questionnaire. Analysis of collected data was done.

Result: Following were responses of Fitness trainers: 87.2% -health screening important before starting exercise program. 40.7% - encountered person collapsing during/after workout.30.2% -felt well equipped to respond to medical emergency.89.5% -considered monitoring HR,BP .93% -felt responsible to be prepared for medical emergencies 94.2% - BLS can be done anywhere whenever and wherever required.82.6% received knowledge of BLS during their training course.The Average score of questions about knowledge of BLS -59.4%. 46.5% -reasons for lack of BLS Awareness and knowledge is non- availability of professional training, Lack of interest, Busy curriculum. 68.6% graded themselves as good for their knowledge of BLS.

Conclusion: 82.6% - have received proper information about BLS but only 4.65% had received BLS certification in the past which is not updated. 29.1% knew the correct sequence of delivering BLS. 38.4% -correct rate of CPR.Based on the questions of knowledge, Average knowledge of Basic Life Support is 59.44%.

Keywords: Basic Life support, Fitness trainers

Sr. No. - 23 Code - C3P2

Title: Exploring Kinesiophobia and Its Correlation with Functional Capacity, Psychological factors, and Hospital Stay in Adult Patients Post Open-Heart Surgery: A Mixed-Method Study.

Authors: 1. Aditi Nile 2. Mariya Jiandani
Affiliation: 1. PG Student, Seth GSMC and KEMH 2. Additional Professor, Seth GSMC and KEMH

Abstract:
Background:
Cardiovascular diseases are the leading cause of death globally, with India bearing a high burden. Open-heart surgeries, including coronary artery bypass grafting (CABG) and valve repair, are critical interventions. Postoperative complications, such as pain, reduced mobility, and diminished functional capacity, delay recovery. Kinesiophobia, an excessive fear of movement due to pain or fear of re-injury, is a significant barrier to physical activity, impacting rehabilitation, functional recovery, and quality of life. This study aimed to explore the correlation between Kinesiophobia and factors such as physical capacity, socio-demographic details, and hospital stay in adult patients post-open-heart surgery. A secondary objective was to investigate patients' experiences with high Kinesiophobia through qualitative analysis.

Aim and Objective: To study kinesiophobia and Its Correlation with Functional Capacity, Psychological factors, and Hospital Stay in Adult Patients Post Open-Heart Surgery

Method: A mixed-method design was employed. The quantitative component included 183 adult patients who completed the Tampa Scale of Kinesiophobia (TSK-SV Heart), Hospital Anxiety and Depression Scale (HADS), and a 6-minute walk test (6MWD). Semi-structured interviews were conducted for qualitative insights only for participants with a kinesiophobia score of more than 37. Data were analyzed using SPSS (Version 20) and thematic analysis.

Result: Kinesiophobia scores in this population were lower than those reported in existing literature. Kinesiophobia showed significant positive correlations with age, hospital stay, anxiety, depression, and negative correlations with education level and 6MWD. Themes from qualitative analysis included fear of movement, physical weakness, functional limitations, and the need for better healthcare communication and psychological support.

Conclusion: Kinesiophobia is a critical barrier to recovery in post-open-heart surgery patients and is influenced by physical, psychological, and social factors. Tailored psychological intervention, enhanced communication, and individualized rehabilitation strategies are essential to reduce Kinesiophobia and improve recovery outcomes.

Keywords: Kinesiophobia, Functional Capacity, Cardiac Rehabilitation, Psychological Support, Open-Heart Surgery

Sr. No. - 24 Code - C3P3

Title: Effect Of Alternate Nostril Breathing on Subjective Sleep Measure in Patients with Postoperative Open-heart Surgery: A Randomized Controlled Trial

Authors: 1. Dr. Akshata Mane, 2. Dr. Santosh Dobhal
Affiliation: 1. PG Student, MGM Institute of Physiotherapy, Chh. Sambhajinagar 2. Associate Professor, MGM Institute of Physiotherapy, Chh. Sambhajinagar

Abstract:
Background: Cardiovascular diseases are a leading cause of mortality worldwide, with coronary artery disease imposing a significant burden in India.m Postoperative complications following-heart surgery, particularly sleep disturbances, affect up to 80% of patients, worsening recovery and quality of life. Deep alternate nostril breathing, a non-invasive technique, may improve sleep, reduce anxiety, and enhance outcomes. This study evaluates its e cacy.

Aim and Objective: To determine the effect of deep alternate nostril breathing exercises on subjective sleep measure in patients undergoing open heart surgery. The objective of the study is to evaluate the effect of alternate nostril breathing on sleep quality, PEFR, Heart Rate, Blood Pressure and SpO2 in patients after open heart surgery.

Method: 42 patients meeting the inclusion criteria were included in this randomized controlled trial. They were randomly allocated into two groups- Group A and Group B respectively. Group B received cardiac rehabilitation whereas Group A performed alternate nostril breathing in addition to the cardiac rehabilitation. Three sessions a day, consisting of fifteen repetitions each, were administered using a traditional technique that involved alternate nostril breathing. Outcome measures- Pittsburgh Sleep Quality Index, PEFR, HR,SPO2 and BP were measured pre- and post-the one-week intervention period.

Result: After intervention, patients showed statistically significant improvement in sleep quality and duration in the control group (P14.19+/- 1.74< 0.05), but the patients in the intervention group showed more significant improvement in sleep quality and duration (P0.76 +/- 0.83< 0.001). In addition, patients in both groups showed statistically significant improvement in PEFR (P 169.52 +/- 30.73<0.05) after intervention.

Conclusion: The study concludes that alternate nostril breathing along with cardiac rehabilitation is effective in improving lung function and sleep in patients with open heart surgery.

Keywords: PEFR, Open heart Surgery, Alternate nostril breathing, Sleep Quality Index.

Sr. No. - 25 Code - C3P4

Title: Effect of wim hof breathing on blood pressure, seep quality in chronic kidney disease patients - A Randomised Controlled Trial

Authors: 1. Dr Yutika Bhutada 2. Dr. Santosh Dobhal
Affiliation: 1. PG Student MGM institute of Physiotherapy, Chh. Sambhajinagar 2. Associate professor MGM institute of Physiotherapy, Chh. Sambhajinagar

Abstract:
Background: Chronic kidney disease (CKD) is a progressive condition that affects kidney function, leading to disruptions in fluid, electrolyte, and acid-base balance. This causes complications such as hypertension, anaemia, and metabolic imbalances. The disease also contributes to significant psychological stress, including anxiety and sleep disturbances that diminish patients' overall quality of life. The Wim Hof Breathing method, with its focus on controlled breathing and relaxation, offers a novel approach in lowering stress, stabilizing blood pressure, and improving sleep quality in CKD patients.

Aim and Objective: This study aimed to evaluate the effectiveness of Wim Hof breathing on blood pressure and sleep quality in CKD patients compared to conventional physiotherapy.

Method: In this randomized controlled trial Participants were screened to meet the inclusion and exclusion criteria and 42 participants aged 35–65 years randomized into two groups: the control group performed diaphragmatic breathing, while the experimental group practiced Wim hof Breathing 3 cycles,once daily along with diaphragmatic breathing for one week. Blood pressure was measured using a sphygmomanometer, and sleep quality was assessed with the PSQI. Pre- and post-intervention data were analysed using the Wilcoxon test.

Results: Both groups showed significant improvements in sleep quality and blood pressure, with the experimental group exhibiting greater benefits. (p value<0.05)

Conclusion: Wim Hof breathing combined with conventional physiotherapy, is an effective intervention for improving sleep quality and lowering blood pressure in CKD patients.

Keywords: Wim Hof Breathing, Blood Pressure, Sleep Quality, Chronic Kidney Disease Patients.

Sr. No. - 26 Code - C3P5

Title: Effectiveness of Toy based Spirometer on Chest expansion, Breathlessness, Cough and sputum Along with Physical activity Enjoyment in Paediatric Pneumonia Patients: A Pilot Randomized Study

Authors: 1. Dr. Chitra Jha 2. Dr. Vaibhav Kapre
Affiliation: 1. PG Student, MGM institute of Physiotherapy, Chh. Sambhajinagar 2. Professor, MGM institute of Physiotherapy, Chh. Sambhajinagar

Abstract:
Background : Across the globe Majority of deaths are attributed to children with pneumonia, especially in the developing world. Chest physiotherapy is widely used as adjuvant treatment for pneumonia. Incentive spirometer (IS) also is a popular technique for chest physiotherapy, encouraging patients to take deep breaths guided by visual feedback. In paediatric populations an innovative technique employs a toy as an e cient incentive spirometry device. It helps open collapsed airways and increases inspiratory volumes, transpulmonary pressure, and inspiratory muscle performance. The device works best for the exhalation process, but may encourage children to take deep breaths indirectly and improve breathlessness, Mucociliary clearance and adherence to the Toy based spirometer. Toy based Spirometry is also Cost- effective.

Objective: Aim of this Pilot Randomized study is to Determine Effectiveness of the Toy based spirometer on Improving Chest Expansion, Evaluating the Effectiveness of Toy based Spirometer on Improving Breathlessness, cough and sputum along with Physical Enjoyment.

Method: Pilot Randomized Study in Paediatric Pneumonia Patients using Chest Expansion Measurement, Breathlessness, cough and sputum scale (BCSS) and Physical Activity enjoyment scale (PACE). Conventional chest physiotherapy with Toy incentive spirometry given with Frequency of 7 consecutive days. Inferences included a total of 7 patients.

Result: 7 patients included in the study showed improvement in the chest expansion although minimal, along with Improved breathlessness and Sputum Removal, but Frequency of cough do not show much reduction and Enjoyment of Toy based spirometer on Physical Activity enjoyment scale (PACE) shows adherence.

Conclusion: Treatment of Pediatric Pneumonia patients with Toy-Based spirometry shows effectiveness and improvement in Chest Expansion, BCSS & PACE.

Keywords: Toy based spirometer, Pediatric Pneumonia , Mucociliary clearance.

Sr. No. - 27 Code - C3P6

Title: Effectiveness of passive stretching of respiratory muscles versus shoulder and thoracic mobility exercises on reduced chest expansion and dyspnea in patients with COPD. - Randomised clinical trial.

Authors: 1. Vrunda Charkha 2. Dr. Shital Phad
Affiliation: 1. PG Student, MGM institute of Physiotherapy, Chh. Sambhajinagar 2. Associate Professor, MIT College of Physiotherapy, Latur

Abstract:
Background: Chronic obstructive pulmonary disease (COPD) is a preventable and treatable condition characterized by persistent respiratory symptoms and airflow limitation due to airway and/or alveolar abnormalities, often caused by significant exposure to noxious gases or particles. Respiratory muscle stretching is a technique designed to reduce exercise-induced respiratory distress in COPD patients. It involves lengthening afferent activity of intercostal muscles and muscle spindles to alleviate dyspnea, prevent respiratory muscle atrophy, and improve coordinated muscle contraction. COPD often leads to reduced rib cage motion, increased abdominal motion, and a paradoxical breathing pattern. Accessory muscle tightness and decreased chest expansion contribute to rib cage rigidity and hyperinflation, reducing diaphragmatic effectiveness. Aim And Objective: to compare the effectiveness of passive respiratory stretching of respiratory muscles versus shoulder and thoracic mobility exercises on reduced chest expansion and dyspnea in a patient with COPD.

Aim and Objective: To study Effectiveness of passive stretching of respiratory muscles versus shoulder and thoracic mobility exercises on reduced chest expansion and dyspnea in patients with COPD.

Method: This study included 30 patients aged above 60 years, divided into two groups: Group A received Passive Stretching of Respiratory Muscles, and Group B performed Shoulder and Thoracic Mobility Exercises. Chest expansion was measured at three levels, and dyspnea was assessed using the Modified Borg Scale before and after the intervention. The protocol was administered twice daily for three days.

Results: Passive Stretching of Respiratory Muscles significantly improved chest expansion compared to Shoulder & Thoracic Mobility Exercises at the 4th, 7th, and 9th intercostal spaces, with mean differences of 0.46667, 0.3334, and 0.4667, and t-values of 4.221, 2.853, and 3.287, all exceeding the critical value of 2.05. However, for dyspnea, the mean difference of 0.46667 and t-value of 1.187 were not significant, indicating similar effects for both interventions.

Conclusion: Study results conclude that passive respiratory muscle stretching is more effective than shoulder and thoracic mobility exercises in improving chest expansion and reducing dyspnea in COPD patients.

Keywords: passive stretching of respiratory muscles, shoulder and thoracic mobility exercises, COPD, Dyspnea, chest expansion.

Sr. No. - 28 Code - C3P7

Title: Evaluation of digital education Module in patients with diabetic foot complications and factors affecting foot care practices: A Pilot Study

Authors:1. Taranga Joshi 2. Dr. Mariya Jiandani (PT)
Affiliation: 1. PG Student, PT School and Centre, Seth G.S. Medical College & KEM Hospital 2. Additional Professor PT School and Centre, Seth G.S. Medical College & KEM Hospital

Abstract:
Background: Diabetes mellitus (DM) is a global public health problem. India is the second most affected country in the world. Diabetic foot complications (DFC) are a common but serious complication of DM. These complications increase the risk of amputation and adversely affect quality of life. Physiotherapists play an important role in educating individuals with DM about complications expected and prevention strategies. There are few researches that assess educational treatments, although the foot care component was included as only a minor component in the programs. Therefore, the degree of evidence is weak. Hence the aim of the study is to deliver a foot care education module in patients with diabetic foot complications and evaluate the change in foot care practices post-delivery.

Aim and Objective: To deliver a foot care education module in patients with diabetic foot complications and evaluate the change in foot care practices post delivery.

Method: In this pilot study, individuals with Type 2 DM were screened for DFCs using 'Diabetes Foot Exam Form'. The pre and post Knowledge levels were assessed by 'knowledge Questionnaire' and the 'Nottingham Assessment of Functional Foot Care' was used to assess practice levels. An intervention of 'Educational Modules' were given for 6 weeks via video call.

Result: Out of 10 participants (7 males, 3 females) the age range was 40-70 years. The average of pre knowledge and practice scores was 64% and 58.6% while post average was 100% and 73.9% respectively.

Conclusion: The educational module improved knowledge and practice scores.

Keywords: Diabetes, Diabetic foot complications, Diabetic foot care, Knowledge, Practice

Sr. No. - 29 Code - C3P8

Title: Assessment of Fatigue in Patients with Chronic Respiratory Diseases : An Observational Study

Authors: 1. Niharika Chopda 2. Dr.Mariya Jiandani
Affiliation: 1. PG Student, PT School and Centre, Seth G.S. Medical College & KEM Hospital 2. Additional Professor PT School and Centre, Seth G.S. Medical College & KEM Hospital

Abstract:
Background :Chronic Respiratory Diseases (CRDs) are long-term conditions affecting the airways and lungs, including COPD, asthma, and ILD. They are characterized by persistent symptoms like breathlessness, cough, and fatigue, often leading to impaired lung function. One of the Cardinal features of CRD is muscle wasting which may result in development of fatigue . Fatigue is a debilitating symptom and despite its prevalence, fatigue remains under assessed and poorly understood in clinical settings. Literature shows that fatigue correlates with reduced physical activity and increased frequency of exacerbations. Physiotherapy plays an important role in improving fatigue levels. Pulmonary Rehabilitation helps to improve fatigue by improving dyspnoea levels, cardiovascular endurance , quality of level hence should be considered as an important outcome . Studies have been performed showing relation of fatigue in Chronic respiratory conditions but there is paucity in literature between domains of fatigue in Chronic Respiratory disease. Hence , this study aims to assess fatigue domains in patients with chronic respiratory conditions.

Aim & Objective: To assess domains of fatigue in patients with CRD.

Method: In this observational study individuals with Chronic Respiratory disease of age group 30 – 60 years were included .Modified Fatigue impact scale was assessed : A 21 item questionnaire (Cronbach's alpha : 0.81)

Result: Out of 30 participants (12 Female & 18 Male) 40 % individuals had fatigue , out of which cognitive and physical fatigue domains were prominent.

Conclusion: A significant proportion of participants experienced fatigue, with the cognitive and physical domains being the most prominently affected.

Keywords: Chronic respiratory Disease, Fatigue, cognitive fatigue, physical fatigue

Sr. No. - 30 Code - C3P9

Title: Translation, cross-cultural validation, content validity and test-retest reliability of Duke Activity Status Index (DASI) in Marathi in patients with cardiovascular disease.

Authors: 1. Dr. Diya Mangharamani (PT) 2. Dr. Aditi Soman (PT), 3. Dr. Mansi Bagul (PT) Affiliation: 1. PG Student, DES Brijlal Jindal College of Physiotherapy 2. Associate Professor, DES Brijlal Jindal College of Physiotherapy 3. PG Student, DES Brijlal Jindal College of Physiotherapy

Abstract:
Background: Heart failure, myocardial ischemia/infarction, coronary heart disease, rheumatic heart disease, congenital heart disease, and valvular heart disease are all considered cardiovascular diseases (CVD). DASI can determine VO2 max using a certain formula, and patients can get the appropriate MET values. One barrier to employing this scale among Marathi-speaking people is the lack of DASI in the native language, Marathi. Peripheral arterial disease adaptation has not been studied in the Marathi version of this scale.

Objectives: 1) An expert translated the Duke Activity Status Index scale into Marathi. 2) To convert the Duke Activity Status Index scale from its translated version back to English. 3) To finalise content validity following expert panel discussion. 4) To determine the translated scale's content validity index. 5) To determine the translated scale's test-retest reliability in cardiovascular disease patients. 6) To create validation across cultural boundaries.

Methodology: A total of 120 participants, ages 18 to 70, who have been diagnosed with cardiovascular illnesses, make up the cross-sectional observational study design. Moving forward The questionnaire was translated by a Marathi-speaking native. The expert group compiled and finalised this translated questionnaire. The translator questionnaire's content was validated. An index of content validity will be computed. A population of 120 CVD patients was tested to determine the final version's test-retest reliability.

Result: The same patients' reliability and stability coe cients for test-retest reliability (Pearson's correlation coe cient r) were assessed after a 15-day interval. Medcalc software was used to calculate the reliability. The 95% CI ranged from 0.9912 to 0.9958, and the interclass correlation was 0.9940.

Conclusion: The Marathi translation of the Duke Activity Status Index is reliable, has good content validity, and is culturally acceptable.

Keywords: DASI, functional capacity, cardiovascular diseases (CVD), Marathi

Sr. No. 31 Code - C4P1

Title: Evaluation of Forward Head Posture in Practicing Dentists: An Observational Study

Authors: 1. Dr. Rucha Gupte (PT) 2. Dr. Kiran Pawar (PT)
Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Associate Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: Forward Head Posture (FHP) is a common postural deviation observed among dentists due to prolonged static, forward-leaning postures during clinical procedures. This condition leads to cervical spine overload, musculoskeletal discomfort, and diminished quality of life. Despite its prevalence, limited research has been conducted on the incidence and severity of FHP in dental practitioners. Early assessment and ergonomic interventions are critical to mitigating long-term health risks associated with FHP.

Aim and Objectives: The aim of this study is to assess Forward Head Posture in practicing dentists by measuring the Craniovertebral Angle (CVA) using MB Ruler software.

Method: This cross-sectional observational study involved 50 practicing dentists aged 25–55 years, selected through convenience sampling. Participants with neck trauma or acute sprains were excluded. Photographs of participants in lateral view were captured, and the CVA was measured using MB Ruler software. A CVA < 48° was considered indicative of FHP. Statistical analysis, including mean and standard deviation calculations, was performed using Microsoft Excel.

Results: The study revealed that 60% of participants exhibited FHP (CVA < 48°). Dentists with FHP had a higher mean age, longer working hours, and more years of practice compared to those without FHP. Gender distribution showed no significant difference, with 60% of both male and female dentists displaying FHP.

Conclusion: FHP is prevalent among dentists, influenced by prolonged working hours and years of practice. Early detection and ergonomic interventions are essential to prevent musculoskeletal disorders and improve postural health.

Keywords: Forward Head Posture, Dentists, Craniovertebral Angle, Ergonomics, Postural Health

Sr. No. - 32 Code - C4P10

Title: Screening for Upper Quadrant Dysfunction and Work Ability Index among Computer Professionals

Authors: 1.Nivedita Hanakanahalli 2.Dr. G. Arun Maiya 3. Mrs. Sidhiprada Mohapatra Affiliation: 1. PG Student, Department of Physiotherapy, Manipal College of Health Professions, Manipal Academy of Higher Education 2. Principal, Department of Physiotherapy, Manipal College of Health Professions, Manipal Academy of Higher Education 3. Assistant Professor, Manipal College of Health Professions, Manipal Academy of Higher Education

Abstract

Introduction: Musculoskeletal disorders (MSDs) are the most diagnosed occupational disorders in India, with computer work identified as a new risk factor. Upper quadrant dysfunction affects the upper body's musculoskeletal structures. A person's ability to work reflects the relationship between their resources and the specific requirements of their job.

Objective

To screen for upper quadrant dysfunction and work ability index among computer professionals.

Methods

The is a cross-sectional study and conducted within a university setting, focusing on university staff and IT professionals. After obtaining approval from Institutional Ethics Committee and CTRI registration, 200 participants were screened, based on inclusion and exclusion criteria 148 were recruited, after the initial clinical evaluation all participants were provided with printed copies of the Work ability index(WAI) and Cultural and Psychosocial influence on Disability (CUPID) questionnaires, after one week reminder was sent to participants. All 148 participants submitted questionnaires.

Result

148 responses were obtained out of which 107 females and 41 males with Occupational duration(9.7±7.1) and working hours(8.01±0.5). Among these participants neck pain(17.6%), shoulder pain(19%), elbow(4.7%), wrist/hand(7.4%), upper back(8.8%), chest(2.7%) were the most reported body regions affected. The mean ABI score was (39.6±5.5) and 25.2% of participants had excellent, 51.7% of had good and 23.1% of participants had poor to moderate Work ability.

Conclusion

In the present study overall upper quadrant dysfunction of 60.2% and Mean WAI of 39.6(5.5) among computer professionals were found. Based on this report we strongly recommend the screening as well as implementation of an appropriate preventive strategy.

Keywords: Work ability index, Upper quadrant dysfunction, Computer using professional

Sr. No. - 33 Code - C4P2

Title: Prevalence Of Diastasis Recti In Middle-Aged Indian Men With Abdominal Obesity

Authors: 1. Arshiya Khan 2. Dr. Mamta Chainani
Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Assistant Professor, Dr. N Y Tasgaonkar College of Physiotherapy, Raigad

Abstract:
Background- Diastasis recti is the condition in which rectus abdominis separation in the midline of linea alba. It can result from obesity, abdominal protrusion, and abdominal operation. In the midline, an abdominal bulge is characteristic of diastasis recti. A rounded abdomen has severe diastasis recti pathogenesis. Often Patients undergoing hernia surgery are checked for diastasis recti as it could be one of the reasons to cause midline hernia. 26.7% is the prevalence of diastasis recti in older males with an average age of 82 years.

Objective- To determine the prevalence of diastasis recti in middle-aged Indian males with abdominal obesity to see if these individuals are at risk of developing diastasis recti in spite of the integrity of the connective tissues being at its peak. This age could be the second most common for having diastasis recti.

Methods- A total of 301 middle-aged Indian men were selected based on inclusion criteria using a digital caliper and abdominal crunch test diastasis recti was measured at all the levels and recorded in Microsoft Excel. Results and Conclusion- The risk of diastasis recti in middle-aged Indian men with abdominal obesity was found to be more compared to the older men. Hence, proper patient assessment and education is required for complications to develop diastasis recti could not occur.

Keywords: Abdominal Obesity, Diastasis Recti, Digital caliper, Linea Alba, Middle Aged Men.

Sr. No. - 34 Code - C4P3

Title: Evaluation of ankle muscle strength, endurance, muscle flexibility and range of motion in Bus Drivers with and without Diabetes Mellitus.

Authors: 1. Mehnaz Fatima Abdul Nasir 2. Dr Mamta Shetty (PT)
Affiliation: 1. PG Student, MGM School of Physiotherapy, Navi Mumbai 2. Associate Professor, MGM School of Physiotherapy, Navi Mumbai

Abstract:
Background: Diabetes mellitus causes musculoskeletal impairments, affecting strength, flexibility, and joint mobility. For bus drivers, ankle joint health is crucial for pedal control. Despite its importance for public safety, research on diabetes-related motor impairments in this group is limited.

Aim: To study ankle muscle strength, endurance, muscle flexibility and range of motion in bus drivers with and without diabetes mellitus.

Objectives: To assess and compare ankle strength, range of motion, endurance, and muscle flexibility in bus drivers with and without diabetes mellitus using standardized instruments such as the hand-held dynamometer, universal goniometer, and tests including the single-leg heel raise test, dorsiflexion lunge test, and Silfverskiold test.

Methods: An exploratory cross-sectional study was conducted on 176 bus drivers with and without diabetes mellitus. The participants were divided into 2 groups; Group A (Bus Drivers with Diabetes Mellitus) and Group B (Bus drivers without Diabetes Mellitus). Ankle muscle strength, endurance, muscle flexibility, and range of motion were assessed for participants in both groups.

Results: Significant differences ($p < 0.05$) were observed in right ankle muscle strength, endurance, range of motion, and flexibility assessed using the hand-held dynamometer, universal goniometer, and standardized tests. Similarly, significant differences ($p < 0.05$) were found in left ankle muscle strength and endurance. However, no significant differences were observed in left ankle flexibility and plantarflexion range of motion, as measured by the dorsiflexion lunge test and Silfverskiold tests.

Conclusion: The findings of this study indicate that bus drivers with diabetes mellitus have reduced ankle muscle strength, range of motion, endurance, and flexibility compared to bus drivers without diabetes mellitus.

Keywords: Diabetes mellitus, Ankle Joint, Bus Drivers, Muscle Strength

Sr. No. - 35 Code - C4P4

Title: Effectiveness Of Tele-Rehabilitation As Compared To Supervised Exercise Program In Nurses With Varicose Veins

Authors: 1. Dr.Shruti Kandalkar 2. Dr. Madhur kulkarni Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Assistant Professor, Pravara Institute of Medical Sciences, Loni

Abstract:
Background: Varicose veins are permanently elongated, tortuous veins that can become disabling over time. While exercise helps manage the condition, factors like lifestyle, occupation, and stress also play a role. We've developed a structured exercise program addressing these aspects, but individuals should begin only after a thorough assessment and under professional guidance.

Objective: To determine the effectiveness of tele rehabilitation and supervised exercise programs among nurses with varicose veins in terms of quality of life, cardiovascular endurance and venous insu ciency.

Method: Forty patients having varicose veins were included in the study. They were randomly assigned to group A (tele rehabilitation) and group B (Supervised exercise program). Group A was given exercise protocol through zoom meeting and group B were given exercise protocol at hospital. An intervention of 6 weeks was carried out in which patients received aerobic training, strength training and relaxation. Baseline 6 Minute walk test, Tourniquet Test and SF-12 was recorded on Data collection sheet pre and post intervention.

Result: The result concluded that both the interventions can be effectively used in improving quality of life, cardiovascular endurance and venous insu ciency in varicose veins. whereas, tele rehabilitation was found to be effective in improving cardiovascular endurance and quality of life compared to supervised exercise programs and venous insu ciency was equally improved in both the groups.

Conclusion: The study concluded that tele rehabilitation and supervised exercise programs were found to be effective in improving cardiovascular endurance, venous insu ciency and quality of life individually. As group A (tele rehabilitation) was having greater adherence rate then group B
due to dropouts. Due to which tele rehabilitation was found more effective than supervised exercise programs in nurses with varicose veins.

Keywords: Tele-rehabilitation, supervised exercise program, varicose veins,nurses.

Sr. No. - 36 Code - C4P5

Title: An Immediate Effect of Music Therapy vs Virtual Reality on Relaxation in Asymptomatic Adults Aged 20-50 Years.

Authors: 1. Dr. Sayed Zeenat Fatima 2. Dr. Mugdha Dhopeshwar
Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Assistant Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: Stress and negative mood states adversely impact mental and physical health, highlighting the need for effective relaxation techniques. Music therapy and virtual reality (VR) are promising non-pharmacological methods, but comparative studies evaluating their immediate effects on relaxation are limited.

Aim and Objectives: This study aimed to compare the immediate effects of music therapy and VR on relaxation in adults aged 20-50 years by assessing changes in mood, blood pressure (BP), respiratory rate (RR) and pulse rate (PR).

Method: An experimental study was conducted with 30 asymptomatic adults aged 20-50 years. Participants were randomly divided into two groups: music therapy, involving exposure to sea wave sounds, and VR, featuring immersive 3D nature environments given for 10 minutes. Mood (Profile of Mood States [POMS]), BP, RR and PR were measured pre- and post-intervention to evaluate relaxation effects.

Results: Both interventions significantly improved mood by reducing negative affective states and enhancing positive ones. VR showed superior effectiveness, with POMS scores improving by 92.87% to 88.87% compared to 85.26% to 99.67% in the music therapy group. However, there were no significant differences in BP, RR or PR between the two groups.

Conclusion: Music therapy and VR are effective for immediate stress reduction and mood improvement. VR demonstrated slightly greater benefits, likely due to its immersive experience. Both techniques are practical, affordable, and accessible tools for relaxation, making them valuable in managing stress in everyday life.

Keywords: Music therapy, Virtual reality, Relaxation, Stress management, Mood improvement

Sr. No. - 37 Code - C4P6

Title: Effect of Pelvic Proprioceptive Neuromuscular Facilitation Techniques on Balance and Core Muscular Endurance in Elderly with Impaired Balance: An Open labelled Randomised Controlled Trial.

Authors: 1. Urvi R Jain 2. Dr. Pothiraj Pitchai (PT)
Affiliation: 1. PG Student, K J Somaiya College of Physiotherapy 2. Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: As the individual ages, there is a decline in balance and gait parameters that increases the risk of falls thus affecting the quality of life. Proprioceptive neuromuscular facilitation (PNF) techniques have shown promising results in improving these parameters in various neurological and orthopaedic conditions, however there is limited research in elderly population on the effect of balance and core muscular endurance having balance Impairments.

Aim and Objectives: The study aimed to investigate the effect of Pelvic PNF on improving Balance and core muscular endurance in elderly with impaired balance.
The objectives included assessing the effect of PNF on balance and core muscular endurance in the experimental and control groups and comparing the outcomes between the groups using the berg balance scale (BBS) and Pressure biofeedback unit (PBU).

Method: The study included 52 participants (26 each group) as per inclusion and exclusion criteria. Participants were assigned to the Control and Experimental groups through convenient sampling and random allocation methods. After recording the demographic details, baseline assessment for Balance was done using the BBS and Core muscular endurance using PBU. The participants in the Control group received a standard balance protocol whereas those in the experimental group received Pelvic PNF along with standard balance protocol. These exercises were given 3 times/ week for 4 weeks. Post assessment for all the parameters was done at the end of 4th week.

Result: Statistically significant improvements ($p<0.001$) were observed in both groups, however the experimental group demonstrated greater improvements across all variables. Effect sizes ranged from moderate to large, indicating meaningful clinical improvements.

Conclusion: Pelvic PNF techniques along with standard balance exercises are effective in improving balance and core muscular endurance in elderly individuals having balance impairments. This study supports the incorporation of PNF techniques into rehabilitation programs for the elderly to enhance their functional mobility and reduce fall risk.

Keywords: Elderly, Balance, Core Muscular Endurance, Proprioceptive Neuromuscular Facilitation (PNF), Geriatric Rehabilitation

Sr. No. - 38 Code - C4P7

Title: Effect Of Upper Quadrant Mobility Exercises on Posture and Fall Risk in elderly with senile kyphotic posture: An Experimental study

Authors: 1. Swati Shitole 2. Dr. Mayur Revadkar (PT)
Affiliation: 1. PG Student, K J Somaiya College of Physiotherapy 2. Associate Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: Senile kyphotic posture, characterized by excessive thoracic kyphosis, is a common condition in elderly individuals. It is characterized by an abnormal increase in thoracic spine curvature, rounded shoulders and forward head. This condition adversely affects balance, increases fall risk, and diminishes quality of life. Addressing postural issues and targeting the upper quadrant is critical to reducing fall-related injuries in the aging population.

Aim and objectives: This study aimed to investigate the e cacy of upper quadrant mobility exercises in improving posture using flesche test (occiput to wall distance) and minimizing fall risk using POMA scale in elderly with senile kyphotic posture.

Method: A total of 43 elderly participants with senile kyphotic posture were recruited. They underwent a structured exercise program focusing on upper quadrant mobility, conducted three times a week for four weeks. Pre- and post-intervention assessments were performed using the Flesche test to evaluate thoracic kyphosis and the Performance Oriented Mobility Assessment (POMA) scale to measure fall risk.

Results: Post-intervention analysis revealed statistically significant improvements in kyphotic posture and fall risk, with both variables achieving a p-value of less than 0.001. Participants demonstrated enhanced postural alignment and increased stability, contributing to a reduced likelihood of falls.

Conclusion: The study findings suggest that targeted upper quadrant mobility exercises are effective in mitigating the adverse effects of senile kyphotic posture by improving posture and reducing fall risk.

Keywords: Senile kyphotic posture, elderly, falls, upper quadrant mobility exercises

Sr. No. - 39 Code - C4P8

Title: Effect of yogasana on lower extremity muscle strength and cardiovascular endurance in dynapenic postmenopausal women between 45 to 60 years: an experimental study.

Authors: 1. Sanjana Sunil Devlekar (PT) 2. Dr. Pothiraj Pitchai (PT)
Affiliation: 1. PG Student, K J Somaiya College of Physiotherapy 2. Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: Post menopausal is a phase, occurring after 12 months of spontaneous amenorrhea, typically between ages 45 and 55, is marked by hormonal changes, including reduced estrogen (17β-estradiol) and elevated follicle-stimulating hormone (FSH). These changes contribute to cardiovascular and musculoskeletal decline, leading to bone loss, reduced muscle quality, and dynapenia- an age-related loss of muscle affecting 18.76% to 34.4% of postmenopausal women. Dynapenia increases health risks such as diminished mobility, impaired functional tasks, slower walking speed, and higher susceptibility to cardiovascular diseases. Yoga, a holistic practice involving physical postures, breath control, and meditation, may counteract these effects by improving strength, endurance and overall Quality of life.

Aims and Objectives: This study aimed to evaluate the effects of yogasana on lower extremity muscle strength using the 30-second chair stand test and cardiovascular endurance using the YMCA 3-minute step test in dynapenic postmenopausal women aged 45-60. Additionally, it assessed lower limb function via the Timed Up and Go (TUG) test and menopause-related quality of life using a specific questionnaire.

Methods: In this pre- and post- experimental study ,35 dynapenic postmenopausal women participated in a structured yoga intervention of three times a week for four weeks. Outcomes were assessed using the 30-second chair stand test, YMCA 3-minute step test, Timed Up and Go (TUG) test, and a menopause-specific quality of life questionnaire. Data were analysed using parametric and non-parametric tests.

Results: Study demonstrated a statistical improvement in lower extremity muscle strength, cardiovascular endurance, and lower limb muscle performance, all with $p < 0.0001$. Quality of life scores showed marked enhancement reflecting improved physical, psychological, and emotional well-being post yoga Intervention.

Conclusions: Yogasana effectively improves muscle strength, cardiovascular endurance, and quality of life in dynapenic postmenopausal women. It is a safe, accessible, and non-invasive therapy to mitigate Post menopausal effects and enhance overall health.

Keywords: Yogasana, Dynapenia, Postmenopausal Women, Cardiovascular Endurance, Muscle Strength, Quality of Life.

Sr. No. - 40 Code - C4P9

Title: Exergaming in Geriatrics: Redefining Active Aging through Technology

Authors: 1. Vidhi Doshi 2. Dr Mugdha Oberoi Affiliation: 1. PG Student, K J Somaiya College of Physiotherapy 2. Assistant Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: The world's population is aging and living longer. As our global population ages, maintaining and enhancing the well-being of the elderly becomes a critical concern. Aging can lead to decreased hand function, slower reaction times, increased falls due to impaired balance and cognitive decline, impacting daily activities and overall quality of life. To overcome these challenges, innovative technological solutions such as exergaming have emerged as promising
interventions. Exergaming, a combination of exercise and gaming, offers a novel solution to promote health, emotional and cognitive well-being in geriatric population.

Objective: This poster highlights the benefits, challenges and applications of exergaming in promoting health and wellness in elderly.

Methods: A comprehensive review of existing literature on exergaming in geriatrics was conducted, focusing on studies that evaluate its impact on physical health (balance, strength, cardiovascular fitness, reaction time, hand function), cognitive function (memory, attention, problem-solving), and psychosocial aspects (social interaction).

Results: Exergaming significantly improves balance, strength, reaction time, hand function and cardiovascular health in older adults, contributing to a reduced risk of falls, increased mobility and improving their daily activities and overall quality of life . Exergaming has been found to have many social benefits. Such gaming provides social interaction and alleviates loneliness, thereby enhancing quality of life. However, the current challenges include cost, access, and user adaptability.

Conclusion: As the population ages, more innovative interventions such as exergaming will increasingly be needed to promote healthy aging and independence among older adults. The future research and development of more accessible and user-friendly systems will further enhance its potential in elderly care.

Keywords: Exergaming, geriatrics, aging, technology, elderly

Sr. No. - 41 Code - C4P11

Title: Comparison of Upper Body Posture and Musculoskeletal Disorders amongOccupational and Non-Occupational Two-Wheeler Riders

Authors: 1. Aireen Ravish Shemle 2. Dr. Juee Bane (PT)
Affiliation: 1. PG Student SIA College of Physiotherapy 2. Assistant Professor, SIA College of Physiotherapy

Abstract:
Background: Two-wheelers are a popular mode of transport in India, especially among urban and rural commuters. Occupational riders, such as delivery personnel, often experience prolonged riding hours, increasing their risk of musculoskeletal disorders (MSDs) and postural issues due to repetitive and constrained postures. Non-occupational riders, although not under occupational stress, also face similar ergonomic challenges during commuting. This study aims to evaluate and compare the upper body posture and prevalence of MSDs in occupational and non-occupational riders.

Aim and Objective: To assess and compare upper body posture using Rapid Upper Limb Assessment(RULA) and the prevalence of MSDs using the Nordic Musculoskeletal Questionnaire (NMQ) between occupational and non- occupational two-wheeler riders.

Method: This cross-sectional observational study involved 102 participants (51 in each group). Group 1 consisted of delivery riders, and Group 2 included non- occupational riders. RULA was employed to assess upper body posture through photographic analysis, while NMQ screened for musculoskeletal issues. Data were analysed using the Mann-Whitney U test to determine significant differences between the groups.

Result: The RULA scores for both groups indicated low ergonomic risk, with no significant difference between occupational and non-occupational riders ($p > 0.05$). However, occupational riders showed a higher prevalence of MSDs, particularly in the lower back (90%), neck (86%), and shoulders (47%), compared to non-occupational riders.

Conclusion: Occupational riders are at a greater risk of MSDs due to extended riding hours and associated physical stress, despite similar upper body posture scores between groups. Ergonomic interventions and rider education are essential to mitigate these risks and improve musculoskeletal health.

Keywords: Two-wheeler riders, Musculoskeletal disorders, Ergonomics, Posture assessment, Occupational health

Sr. No. - 42 Code - C5P1

Title: Translation, cross-cultural adaptation and reliability of Kujala Questionnaire in Marathi version.

Authors: 1. Srushti Patil 2. Dr. Shweta Kulkarni (PT)
Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Associate Professor, DES's Brijlal Jindal College of Physiotherapy, Pune

Abstract:
Background: The aim of the study was translation, cross cultural adaptation and reliability of the Kujala questionnaire for its use in Marathi, which consists of all functional activities related to knee joint. Knee pain is one of the most common complaints of people at all ages. Osteoarthritis is one of the most common causes of knee pain in the elderly population. The Kujala questionnaire was put forth by Kujala et al in 1993. The functional ability and pain in the lower extremity or, specifically, movement of the knee can be assessed using this scale. In total, this scale consists of 13 questions with different options and a scoring pattern. The total score on the questionnaire is 100 due to poor flexibility of quadriceps and hamstring or any extensor mechanism mis alignment.

Material and methods: After seeking permission from the Institutional Research Review Committee, the study was conducted in two phases. Phase 1 involved translating the original Kujala questionnaire into Marathi using a forward and backward translation process. The again backward translation was to check out the difference. Phase 2- Testing the reliability of the Kujala questionnaire.

Result: The reliability was tested by measuring internal consistency and by using a test-retest method. The Cronbach's alpha for the Kujala questionnaire is 0.80. The correlation between the questionnaire on day 1 and day 15 was highly significant.

Conclusion: The Marathi, non-English version of the Kujala questionnaire had an acceptable value for reliability.

Keywords: Kujala questionnaire, anterior knee pain, Osteoarthritis, Marathi version.

Sr. No. - 43 Code - C5P2

Title: Tele-Assessments in Physiotherapy - Bridging Distances, Enhancing Care: A systematic review

Authors:1 Dr. Vijaya Krishnan (PT) 2 Dr. Vinita K
Affiliation: 1. Assistant Professor, MGM College of Physiotherapy, Navi Mumbai 2. PG Student, MGM College of Physiotherapy, Navi Mumbai.

Abstract:
Background:Tele-physiotherapy assessment has become a transformative approach in healthcare, providing remote evaluation of patients through digital platforms. It has expanded access to physiotherapy services, particularly in underserved regions.

Aims and Objectives: This systematic review investigates the current landscape, challenges, and opportunities of tele-assessment practices among physiotherapists in India. It examines the technological and clinical factors influencing outcomes and highlights the advantages and limitations of tele-assessment.

Method: A comprehensive literature search was conducted across multiple databases, including PubMed, Google Scholar, focusing on telehealth in physiotherapy between 2019-2023. The study employed a structured methodology to analyze technological adoption, professional readiness, patient experiences, and implementation barriers. Screening involved a two-step process: title and abstract review followed by full-text evaluation. Data extraction focused on outcomes like diagnostic accuracy, patient satisfaction, and feasibility. Thematic analysis was performed to synthesize findings, highlighting advantages, limitations, and areas for improvement in tele-assessment practices.

Result: The study findings reveal a heterogeneous landscape of digital assessment tools. Tele-physiotherapy assessment demonstrated substantial potential when supported by standardized protocols and appropriate technology. It offers significant benefits, including improved accessibility, convenience, and cost-effectiveness. Nonetheless, challenges persist, particularly in assessing complex motor patterns, obtaining tactile feedback, and ensuring equitable access to technology. It includes inconsistent internet infrastructure, limited digital literacy, and absence of standardized tele-assessment protocols. Majority of physiotherapists reported partial digital assessment integration, predominantly in orthopedic and neurological rehabilitation domains. Clinician training and robust telehealth infrastructure were critical to optimizing outcomes.

Conclusion: Tele-physiotherapy assessment is a viable and effective alternative to traditional in-person evaluations, offering a new dimension to modern physiotherapy practice. The review highlights critical gaps in technological infrastructure, professional training, and regulatory frameworks. Technological innovations, particularly smartphone-based motion analysis and AI-powered assessment tools, emerge as potential solutions to existing limitations.

Keywords: Telehealth, E-Physiotherapy, digital assessment, healthcare modernization, innovation

Sr. No. - 44 Code - C4P12

Title: Awareness about Urinary Incontinence in Female Sports Players between 18-25 years of age: A Survey in Pune City.

Authors: 1.Dr. Ashwini kamble (PT) 2. Dr. Kanchan Rathod (PT)
Affiliation: 1. Associate Professor, DES's Brijlal Jindal College of Physiotherapy, Pune 2. PG Student, SIA College of Physiotherapy

Abstract:
Long term high impact activity affects the pelvic floor musculature. Female professional athletes seem to carry an around 3 times greater risk of UI compared to non-active women.9 Among these, high impact sports have been associated with a higher UI prevalence than those with low impact activities. Pelvic floor provides support to all the pelvic organs as well as appropriately regulates the opening and closing mechanism of the urethra, vagina, and anus. The pelvic floor

muscles consist of levator ani which includes pubococcygeus, iliococcygeus, coccygeus. Weakness or overloading on these muscles can cause incontinence. High impact sports are the sports which involve jumping, running which increases the intra-abdominal pressure. As in the case of these sport players it causes the intra-abdominal pressure to rise which is followed by abdominal muscle contraction in absence of prior pelvic floor muscle contraction which in turn leads to UI. Hence, the females who are involved in high impact sports exert higher intra-abdominal pressures, leading to overstretching and weakness of pelvic floor musculature, morphological and functional changes in ligaments and connective tissue, or an increased diameter of the levator hiatus Therefore, although the female sport players are physically fit and

involved in training of the entire body, negligence to train the pelvic floor is possible which is one of the main components of core musculature as well which in turn has higher chance of predisposing to UI. Previous studies show that Female professional athletes seem to carry an around 3 times greater risk of UI compared to non-active women. Although Female sports players are involved in training the entire body and are supposed to be physically fit, negligence to train the pelvic floor is possibly predisposing it to urinary incontinence. Taking this into consideration the athlete herself is aware that this condition is unknown, since a lot of studies have been done on the prevalence of UI but barely on the awareness and hence the need to find the awareness.

Aims and objectives: To find awareness about Urinary Incontinence in female sports players using self-administering questionnaire with respect to symptoms, risk factors, investigations and treatment.

Method: A self-made questionnaire was formed and validated. Questionnaire was circulated to the participants online. Consent of the participant was taken through google forms. Study and questionnaire were explained to the participant. Participants had to fill the questionnaire and data was collected. It was analysed using descriptive statistics.

Result: Females playing high impact sports are not aware of urinary incontinence w.r.t symptoms, risk factors, treatment and investigations.

Conclusion: It can be concluded that awareness of Urinary Incontinence in Female sports players in Pune city is less in individuals of 18 to 25 years of age.

Keywords: Urinary Incontinence, high impact.

Sr. No. - 45 Code - C4P13

Title: Assessment Of Peak Expiratory Flow Rate (Pefr) and oxygen saturation (SpO2) in auto rickshaw drivers of kalyan city.

Authors: 1. Priyanka Sodha 2. Dr. Rameshwari Korbekar (PT) Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Assistant Professor, TMV Lokmanya Tilak College of Physiotherapy

Abstract:
Background: Due to rapid industrialization and urbanization, The Air Quality index in Kalyan recently is moderate to poor with unhealthy AQI in Khadakpada area of Kalyan west. Ineffective clearance of this particulate matter from the airways could cause particle retention in lung tissues,which results in chronic,low grade inflammatory response that may be pathologically important in progression of lung diseases .Auto rickshaw drivers are prone to this pollutants due to long hours of working without usage of mask leads to their respiratory health at risk.

Aim: To assess PEFR and SpO2 in autorickshaw drivers of Kalyan city.

Objective: 1. To study the degree of obstruction in lungs of auto rickshaw drivers of Kalyan city using PEFR. 2.To study the oxygen carrying capacity of blood of the auto rickshaw drivers of Kalyan city using pulse oximeter (SpO2).

Method: A cross-sectional study was conducted on 80 auto-rickshaw drivers of khadakpada area of kalyan west.Purposive sampling method was used on the subjects.Only male non-smoking,non tobacco and alcohol addictor auto rickshaw drivers having age group of 18 to 49 years with hours of working minimum 6 hours per day and working experience of minimum 1 year participated in the study.The degree of obstruction in lungs was measured using peak expiratory flow rate(PEFR) and the oxygen carrying capacity of blood using pulse oximeter(SpO2).

Conclusion: Our study concludes that autorickshaw drivers have reduced PEFR. The reduced PEFR with increase in age and hours of working illustrates there is an increase in obstruction of lungs of autorickshaw drivers of kalyan city due to ambient ,particulate outdoor air pollution.This study also concludes that autorickshaw drivers have insu cient oxygen saturation in blood. The
insu cient oxygen saturation with increase in years of working exposure illustrates reduced oxygen carrying capacity in blood of autorickshaw drivers of kalyan city due to outdoor and particulate air pollution.

Keywords: Autorickshaw drivers,Kalyan city,PEFR,SpO2,air pollution,Air Quality Index.

Sr. No. - 46 Code - C5U1

Title: Perception of undergraduate Physiotherapy students on implementation of Choice based Credit System curriculum.

Authors: 1.Mr. Hardik Motani, 2. Dr Mamta Shetty (PT) , 3. Ms. Khushi Khandelwal Affiliation: 1. UG Student, MGM School of Physiotherapy, Navi Mumbai2. Associate Professor, MGM School of Physiotherapy, Navi Mumbai 3. UG Student, MGM School of Physiotherapy, Navi Mumbai

Abstract:

Background : Recent reforms in education, including University Grants Commission's (UGC's) advocacy for a CBCS curriculum and implementation of National Education Policy(NEP) 2020, promote a learner-centered approach. With implementation of the CBCS curriculum,the present study aims to procure feedback from undergraduate students, primary stakeholders of the CBCS curriculum.

Objective: To understand Undergraduate Physiotherapy student's perception of the current Choice Based Credit System curriculum using a self – administered questionnaire.

Methods : The study commenced after obtaining ethical approval from the Institutes Ethics Review Committee. Participants were recruited for the study after obtaining written informed consent. Perception of students regarding the Choice Based Credit System Curriculum was obtained using a self administered questionnaire. Summative scores were computed for each perception related question and the responses were recorded on a 5-point psychometric Likert scale.

Results: Students reported a high level of satisfaction (53.7%) with the student centric approach and flexibility to choose courses. However, the study demonstrated a need for having a student advisor for selecting elective courses. Students reported that the curriculum was examination oriented and Continuous Comprehensive Assessment (CCA) helped to improve knowledge, skills and scores in examinations (54.2%).

Conclusions : Findings from the present study reported a positive opinion of CBCS curriculum among undergraduate BPT students. The students believed that CBCS curriculum allowed them to take courses that best suited their interests, using an interdisciplinary approach, promoting their holistic development thereby making them globally competent.

Key words : Choice Based Credit System Curriculum, National Education Policy, Student perception

Sr. No. - 47 Code - C4U2

Title: Comparison of Upper and Lower Extremity anthropometric variables and muscle strength in young adult females with and without Dysmenorrhea.

Authors: 1. Pruthvi Rajesh Shetty, 2. Dr Mamta Shetty (PT)
Affiliation: 1. UG Student, MGM School of Physiotherapy, Navi Mumbai 2. Associate Professor, MGM School of Physiotherapy, Navi Mumbai

Abstract:
Background:Dysmenorrhea is characterized by cyclic pain during menstruation and can significantly impact activities of daily living and quality of life. Hormonal changes lead to anthropometric alterations, which play a significant role in assessing physical function related to musculoskeletal conditions. Therefore, our study aims to evaluate upper and lower extremity anthropometric measurements in young adult females with and without Dysmenorrhea.

Aim: To compare upper and lower extremity anthropometric variables and muscle strength in young adult females with and without dysmenorrhoea.
Objectives: 1. To evaluate upper extremity anthropometry and strength in young adult females with and without dysmenorrhea. 2. To evaluate lower extremity anthropometry and strength in young adult females with and without dysmenorrhea. 3. To compare upper extremity and lower extremity anthropometry and strength among young adult females with and without dysmenorrhea.

Methodology: An observational cross sectional study was conducted to evaluate upper and lower extremity anthropometry in young adult females with and without dysmenorrhea. A total of 138 participants [Group A (with dysmenorrhea) and Group B (without dysmenorrhea)] were recruited Upper and lower extremity anthropometry was recorded using a measuring tape. Upper extremity and lower extremity strength was assessed using a Jamar Dynamometer and lower limb dynamometer respectively.

Results: The results demonstrated significantly ($p < 0.05$) higher strength of upper extremity in dysmenorrhea group and higher lower extremity strength in non dysmenorrhea group. No significant differences in most upper and lower limb anthropometric measurements between females with and without dysmenorrhea.

Conclusion: Findings from the present study report the dysmenorrhea group had greater right upper limb strength, while the non-dysmenorrhea group had greater lower limb strength.

Clinical implication: Clinicians can use the above findings to enhance the holistic care of females with dysmenorrhea by developing personalised exercise programs inclusive of strengthening, flexibility and core training to address these deficits and improve overall functioning.

Keywords: Dysmenorrhea, Anthropometry, Muscle strength

Sr. No. - 48 Code - C4U3

Title: Effect of 6-week virtual reality training to improve postural control and risk of falls among community dwelling elderly population

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Abstract:

Background: Falling can cause reduced levels of independence, poor quality of life and high levels of anxiety leading to disability, hospitalization and can result in premature death. VirtualReality is an interactive computer-generated experience taking place within a simulated environment. Potential benefits of virtual reality training on postural control in elderly has been established previously. However, most previous studies have assessed the e cacy based on subjective outcome measures. Therefore, the present study aimed to evaluate effect of 6-week virtual reality training on postural control in elderly using instrumented balance tests.

Method: After obtaining ethical approval and signed informed consent, thirty-four community dwelling elderly population were recruited aged 60 year and above. The participants were stratified into 2 groups- Conventional therapy group(n=17) and virtual reality therapy group(n=17). The conventional therapy group received balance training (ACSM guidelines) for 40 minutes thrice a week for 6 weeks. The virtual therapy group received additional 20 minutes of virtual reality training using virtual reality viewers along with conventional therapy. The balance of both the groups was assessed before and after the intervention.

Results: The clinical and instrumented balance assessment tests demonstrated improvement post intervention in both groups. However, the Virtual reality group demonstrated 60 % greater improvement in clinical tests and 75% reduction in postural sway as measured by instrumented tests. The balance confidence was 40% greater in the virtual reality group. Additionally, the virtual reality group demonstrated improvement in cognitive dual task which was not noted in the conventional group.

Conclusion: Virtual reality training is effective at improving postural control, balance confidence and dual task capacity among community dwelling elderly.

Keywords: Virtual reality training, Balance, Geriatrics, Virtual reality viewer, Community dwelling elderly

Sr. No. - 49 Code - C1U1

Title: Comparison of lower extremity function and quality of life among habitual squatters and non squatters in patients with Knee Osteoarthritis.

Authors: 1. Ms.Khushi Khandelwal 2. Dr. Mamta Shetty 3. Mr. Hardik Motani
Affiliation: 1. UG Student, MGM School of Physiotherapy, Navi Mumbai 2. Associate Professor, MGM School of Physiotherapy, Navi Mumbai 3. UG Student, MGM School of Physiotherapy, Navi Mumbai

Abstract:
Background : Knee osteoarthritis is a major cause of disability, leading to significant functional impairments and activity limitations. These challenges negatively affect lower limb function and overall quality of life. Overall prevalence of knee OA was found to be 28.7% in India with age group 40-60 years. This study focuses on the influence of squatting, posture which is widely used by the Indian population on lower limb function and quality of life.

Aim and objective: To compare lower extremity function and QOL amongst habitual squatters and non squatters in patients with knee OA. To compare lower limb function using Western Ontario and McMaster Universities Osteoarthritis Index and Lower Extremity Functional Scale between habitual squatters and non squatters in patients with knee osteoarthritis. To compare the quality of life using the World Health Organization Quality of Life-Brief Version between habitual squatters and non squatters.

Method: A total of 24 participants with knee osteoarthritis in the age group of 40-60 years participated in the study. Lower limb function was assessed using WOMAC and LEFS. The quality of life was measured using WHOQOL- BREF.

Result: The Lower Extremity Functional Scale (LEFS) scores were significantly higher ($p<0.05$)for habitual squatters compared to Non-squatters. Scores on WOMAC significantly improved for non squatters compared to squatters. The scores of WHO-QOL BREF demonstrated no significant improvement among non-squatters as compared to squatters.

Conclusion: Findings report habitual squatters exhibit better lower extremity function as compared to non squatters in patients with knee osteoarthritis. However, no notable difference was observed in quality of life between habitual squatters and non-squatters.

Keywords: Osteoarthritis, squatting, quality of life.

Sr. No. - 50 Code - C1U3

Title: Effects of Subscapularis activation in patients with shoulder impingement on pain, strength, and shoulder function.

Authors: 1. Shrutika Parab, 2. Mamta Shetty, 3. Ishita Mansharamani
Affiliation: 1. UG Student, MGM School of Physiotherapy, Navi Mumbai 2. Associate Professor, MGM School of Physiotherapy, Navi Mumbai 3. UG Student, MGM School of Physiotherapy, Navi Mumbai

Abstract:
Background: Shoulder impingement syndrome occurs when the rotator cuff tendon, or bursa beneath the coracoacromial arch is compressed during arm elevation, causing pain. The subscapularis, a key stabilizer of the glenohumeral joint, prevents anterior humeral translation, but is often overlooked in rehabilitation. Weakness or compensatory activation of the subscapularis due to microtrauma can lead to dysfunction. The present study evaluates subscapularis activation in individuals with shoulder impingement , complementing conventional exercises.

Aim: To evaluate effects of subscapularis activation exercises in patients with shoulder impingement on pain, strength and shoulder function.

Objectives: To evaluate effects of subscapularis activation in patients with shoulder impingement on muscle strength with isometric dynamometer To evaluate effects of subscapularis activation in patients with shoulder impingement on pain and shoulder function with Shoulder Pain And Disability Index (SPADI).

Method: It was an interventional study conducted on sixty participants in the age group 20-40 years who were recruited after seeking written informed consent. Participants were divided into two groups via random sampling technique : Group A (Conventional group - conventional exercises administered) and Group B (Intervention Group - conventional exercises with subscapularis activation administered). Both groups were assessed pre- and post-3-week intervention using: Shoulder Pain and Disability Index (for pain, function, and disability), Isometric Dynamometer (for muscle strength), and a universal goniometer (for range of motion).

Result: Patients in the interventional group demonstrated significant improvement ($p<0.05$) in SPADI scores and increased shoulder internal rotation range of motion ($p<0.05$).

Conclusion: Findings from present study report subscapularis activation as an adjunct to conventional exercises helps in reducing pain intensity and thus improves shoulder function in patients with shoulder impingement.

Keywords: Shoulder impingement syndrome, subscapularis activation, pain and disability, conventional exercises, shoulder pain.

Sr. No. - 51 Code - C1U5

Title: Innovation Redefined: PhysioVR for Text Neck Syndrome Recovery

Authors: 1. Shruti Shah 2. Dr. Sanika Thakre Affiliation: 1. UG Student, D Y Patil College of Physiotherapy, Pimpri 2. Faculty, Dr. D Y Patil College of Physiotherapy, Pune

Abstract:
Text neck syndrome, attributed to sustained forward head posture from excessive screen use, is a growing concern due to its potential progression to cervical spondylitis. Conventional Physiotherapy often faces challenges in patient adherence and motivation. PhysioVR, a specialized virtual reality platform, offers an innovative and engaging approach to rehabilitation.

This case study evaluates the use of PhysioVR in alleviating text neck symptoms, improving cervical mobility, and preventing further complications such as cervical spondylitis.

A 25-year-old software engineer with a 10-month history of text neck syndrome participated in a 8-week PhysioVR-based rehabilitation program. The intervention included immersive posture correction activities, cervical mobility exercises, and gamified muscle-strengthening routines tailored to the patient's condition. Baseline and post-intervention outcomes were assessed using the Neck Disability Index (NDI), cervical range of motion (CROM), and a postural evaluation tool.

The patient demonstrated a 50% reduction in NDI scores, significant improvement in cervical range of motion, and enhanced postural alignment. Feedback indicated high engagement and adherence due to the interactive and immersive nature of PhysioVR. Compared to prior conventional therapy, the patient reported greater satisfaction and motivation.

PhysioVR proved to be an effective tool in managing text neck syndrome, offering improved outcomes and engagement. This case study highlights the potential of VR programs like PhysioVR to revolutionize physiotherapy practices and prevent the progression of musculoskeletal conditions.

Keywords: Innovation, PhysioVR, Rehabilitation, Text Neck syndrome

Sr. No. - 52 Code - C2U1

Title: A Case Study: Effect of mental imagery on timed up and go test in Parkinson' patients

Authors: 1. Jyoti Chaudhary 2. Dr. Snehal Rathi Lende (PT)
Affiliation: 1. PG Student, SIA College of Physiotherapy 2. Associate Professor, Oyster College of Physiotherapy, Aaurangabad

Abstract:
Background: To see the effect of Mental Imagery on time up and go test in Parkinsonism patients so that it can be included in the treatment protocol. Mental Imagery does not require any instrumentation and causes less risk of fall.

Subject & methods: A Case study of 3 Parkinson's patients was done for12 sessions (thrice a week). Firstly TUG test time noted then asked to perform MI for 10 times with 20 sec rest period in between. After MI sessions again TUG test time noted down. This was repeated for 12 sessions.

Results: According to the collected data, there are positive results with Mental Imagery suggesting that it can be used as a form of treatment in Parkinson patients.

Conclusion: This study concludes that Mental Imagery is effective in PD but needs to have more study on a large number of patients.

Keywords: MI- Mental Imagery, TUG-Timed up and go, PD- Parkinson's patients, H&Y Scale- Hoehn and Yahr Scale, MMSE- Mini Mental Status Examination.

Sr. No. - 53 Code - C1T1

Title: Association of forward head posture and cervical joint position sense in subjects with or without neck pain– A systematic review

Authors: 1. Dr Pranali Suryawanshi 2. Dr. Dipak Anap
Affiliation: 1. PhD Scholar, Vikhe Patil College of Physiotherapy 2. Dr. Dipak Anap, HOD and Professor Vikhe Patil College of Physiotherapy

Abstract:
Background: Forward head posture (FHP) is prevalent positional deviation seen in lateral view. According to recent studies, subjects who are having FHP also has somatosensory hypofunction and reduced proprioception which are essential afferent signals to maintain posture. There are no systematic reviews studying association of FHP and cervical joint position sense till date, which is important for further understanding and investigations. Considering the impairments associated with reduced cervical joint position sense it is important to know this relationship, and hence the need for this study.

Methods: This study was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guideline (PROSPERO ID: CRD42024572197). Literature search was performed on PubMed, Web of Science, Scopus, and Google Scholar. Additionally, a manual search using the references of included papers was conducted. Observational studies that examined the connection between FHP and cervical joint position sense were among the studies that qualified. The Joanna Briggs Institute Critical Appraisal Checklist for Cross-Sectional Studies was used to evaluate the quality of the studies.

Results: Seven studies were included for the final analysis after checking inclusion and exclusion criteria and quality assessment. The evidence supported that people with forward head posture have significant reduction in cervical joint position sense in all four directions. Limited evidence supporting association between FHP and cervical joint position sense in subjects with neck pain.

Conclusion: The results of this systematic analysis consistently showed that subjects with FHP had decreased cervical proprioception. However, the evidence base is weakened by heterogeneity and a dearth of high-quality trials. But this study provides evidence for impact of Forward head posture and application of techniques to reduce dysfunction.

Keywords: Forward head posture, Cervical Joint Position Sense, Systematic review, Cervical spine, Cervical proprioception.

Sr. No. - 54 Code - C1T2

Title: Sensitivity and Specificity of Modified Straight Leg Raise and Cross Straight Leg Raise Test in Patients with Lumbar Disc Herniation

Authors:1. Isha Kulkarni 2. Dr. Hina Jain (PT) Affiliation: 1. PG Student, D Y Patil College of Physiotherapy Pune 2. Associate Professor, K J Somaiya College of Physiotherapy

Abstract:
Background: Neurodynamic tests, such as the Straight Leg Raise (SLR) and its variations, are widely used to diagnose lumbar disc herniation. These tests aim to stretch neural structures to identify pain or dysfunction. However, the diagnostic accuracy of Modified SLR (MSLR) and Cross SLR (CSLR) is not well established, especially when lumbar disc herniation is confirmed on MRI findings. This study investigates the sensitivity and specificity of these tests to enhance their clinical utility.

Aim: To evaluate the sensitivity and specificity of MSLR and CSLR in diagnosing lumbar disc herniation.

Objectives:
1. To Determine the sensitivity and specificity of MSLR in patients with lumbar disc herniation.
2. To Determine the sensitivity and specificity of CSLR in patients with lumbar disc herniation.
3. To assess the overall diagnostic accuracy of these tests (Odd Ratio & Predictive Value)

Method: The study included 94 patients, divided into lumbar disc herniation and control groups. Ethical approval was obtained, and Low back pain patients who had MRI for confirmation were only included in the study. Clinical tests (MSLR and CSLR) were performed following standardized procedures. Each test was repeated three times, and the average was used for analysis. Diagnostic accuracy metrics, such as sensitivity, specificity, and predictive values, were calculated.

Result: CSLR demonstrated higher sensitivity (80%) but lower specificity (70%) compared to MSLR, which showed a sensitivity of 60% and specificity of 80%. MSLR had a higher positive predictive value (0.83), while CSLR had a higher negative predictive value (0.76).

Conclusion: MSLR and CSLR are effective adjunct tools for diagnosing lumbar disc herniation. CSLR is more sensitive, while MSLR offers better specificity and predictive accuracy. Clinicians should incorporate these tests into diagnostic protocols to improve assessment reliability.

Keywords: Lumbar disc herniation, Straight Leg Raise, Sensitivity, Specificity, Diagnostic accuracy

Sr. No. - 55 Code - C2T1

Title: Elderly Attentional Demand - An Innovative Finding Quantified.

Authors: 1. Sanskruti Sawant, 2. Ramesh Debur Visweswara Affiliation: 1. Assistant Professor, K J Somaiya College of Physiotherapy 2. Associate Professor, Ramaiah College of Physiotherapy

Abstract:
Background: Falls are among the most prevalent causes of hospitalization in the senior population. Research has shown that, in addition to a variety of internal and external variables, maintaining balance and preventing falls is largely dependent on paying attention. As one ages, attention to posture becomes compromised. Since the integration of the visual, somatosensory and vestibular systems is necessary for maintaining posture. Therefore, maintaining balance during a postural job necessitates paying attention to each of these systems. In this study, authors have set out to quantify attentional demands to the somatosensory system during a postural task.

Objectives: To measure attentional demand of somatosensory components during a postural task.

Method: A total of 37 participants were selected through convenience sampling based on strict inclusion and exclusion criteria. Participants performed a postural task under two conditions: (1) without a cognitive task and (2) with a concurrent cognitive task. The attentional demands on the somatosensory system were measured and expressed in terms of postural drift (degrees of sway).

Result: Attentional demand to the somatosensory system is equivalent to 3.34 degrees of drift without a cognitive task. Attentional demand to the somatosensory system is equivalent to 5.25 degrees with a cognitive task.

Conclusion: The findings highlight that attentional demands increase significantly when a cognitive task is added to a postural task. The study revealed that the attentional demand on the somatosensory system during a postural task without a cognitive task resulted in an average drift of 3.34 degrees. In contrast, introducing a cognitive task increased the drift to 5.25 degrees. This indicates a significant reallocation of attentional resources from the postural task to the cognitive task.

Keywords: Attentional demands, Elderly, Postural Control, Posture,Quantification.

Sr. No. - 56 Code - C2T2

Title: Effects of Play Therapy With Neurodevelopmental Technique (NDT) in Improving Gross Motor Function In Spastic Diplegic Cerebral Palsy Children

Authors: 1. Mandar Ramesh Malawade 2. Dr. G. Varadharagulu
Affiliation: 1. Professor, Krishna College of Physiotherapy, Karad 2. Dean, Krishna College of Physiotherapy, Karad

Abstract:
Background: Play therapy has become an important part of physiotherapy treatment programs to improve functional outcome in children with cerebral palsy. Neurodevelopmental Technique (NDT) is one of the known techniques in improving gross motor function in cerebral palsy children. The study intends to find out the effects by combining these two therapies and find out its effects on gross motor function in Spastic Diplegic Cerebral palsy children

Aim and Objectives: This study aimed at finding out e cacy of Play Therapy along with NDT in improving Gross motor Function in Cerebral Palsy children.

Method: 13 spastic diplegic cerebral palsy children were selected for the intervention. The intervention was given as a combination of NDT with Play Therapy. The intervention was given 3 days a week for 6 weeks continuously. Pre and Post test data was collected for statistical analysis.

Result: Two outcome measures ie. GMFM 66 version, were used to find out gross motor function of children with spastic diplegia. The statistical analysis showed significantly higher value $p<0.05$.

Conclusion: Play therapy along with Neurodevelopmental Therapy (NDT) was found to be much effective in improving Gross motor Function in spastic diplegic Cerebral Palsy children. This study may help the physiotherapist to utilize and evaluate the functional outcomes using play therapy in cerebral palsy children.

Keywords: Cerebral Palsy, Play Therapy, Neurodevelopmental Technique

Sr. No. - 57 Code - C2T3

Title: Internal Consistency of Quality of Upper Extremity Skills Test in Children with Cerebral Palsy –A Diagnostic Research Study

Authors: Dr. Madhushree Sawant (PT)
Affiliation: Assistant Professor, KJ Somaiya College of Physiotherapy

Abstract:
Background
Children with Cerebral Palsy(CP) exhibit di culty during Functional independence due to impaired upper extremity function. Assessment and training of upper extremity function remains an important goal for therapy. Necessity to analyse and understand the pre-existing outcome measures arises due to the complexity of upper extremity function and limitations. Quality of Upper Extremity Skills Test(QUEST) is practical and easy to apply outcome measures, prevalent in clinical practice. Reliability and Validity studies for QUEST suggested it as a good tool though manual, individual items, scoresheets require changes. Psychometric properties of Internal Consistency help to determine the individual item consistency within the test, hence this study aimed at analysing the internal consistency of QUEST.

Aim and Objective: To determine the Internal Consistency of Quality of Upper Extremity Skills in Children with Cerebral Palsy.

Methods
Study Design- Diagnostic research
Upper extremity function was measured for children with CP(N=39),aged 4to12years using QUEST. Post data collection, data analysis was done to measure the internal consistency of QUEST using Cronbach's alpha and to determine the data variability and extent of upper extremity function.

Result: The inter-domain internal consistency for QUEST using Cronbach's alpha was measured to be α=0.903, showing excellent internal consistency. The data demonstrated variability in terms of types of CP, different functional levels, age and the scores for upper extremity function using QUEST.

Conclusion: QUEST as an outcome measure shows excellent internal consistency within the domains, alpha value of 0.903. It signifies that domains of QUEST are correlated well to each other and QUEST has been constructed well in terms of dividing the upper extremity function into parts to evaluate the complex function effectively. QUEST remains a good functional measure and more studies on the psychometric properties are required by multiple researchers to reach a consensus of developing QUEST into a gold standard outcome measure.

Keywords: Internal consistency, QUEST, Quality of Upper Extremity Skills Test, Upper extremity function, Upper limb function, Cerebral Palsy

Sr. No. - 58 Code - C2T4

Title: Can Physiotherapy Resolve Hip Subluxation in Spina Bifida? -A Case Report Exploring Non-Surgical Outcomes

Authors: Dr. Madhushree Sawant (PT)
Affiliation: Assistant Professor, KJ Somaiya College of Physiotherapy

Abstract:

Background

Case report on a 4 year old female child with meningomyelocele. Referred for physiotherapy at 1.5years age, hip subluxation was noted on evaluation. The diagnosis was confirmed with radiological investigations and the child was advised for hip reconstruction surgery. Due to systemic involvement and financial di culties surgery was withheld. Physiotherapy intervention was continued with a protocol focussing on Hip strengthening and orthotic management rigorously with the aim of preventing further hip subluxation and maintaining normal hip alignment. On consecutive follow ups the radiological investigations showed normal joint alignment, striking the research question “Can Physiotherapy Resolve Hip Subluxation in Spina Bifida?

Aim and Objectives

To study the effect of physiotherapy on hip subluxation in a child with meningomyelocele.

Methods

An interventional case study on a 4 year old female child with meningomyelocele (operative correction done on day21 of life) and congenital patellar subluxation, conducted over 2years 6months from September 2021 to March 2024. Outcome measures utilized were Hip Migration% using HipScreen App to evaluate the radiological findings and Muscle charting.

Pre-treatment physiotherapy evaluation and muscle charting was done and treatment protocol was routinely documented. Hip and Core strengthening exercises, muscle stimulation and orthotic management was undertaken.

Results

Pre-treatment physiotherapy evaluation, muscle charting and Hip Migration% was calculated and compared at three consecutive intervals at August 2022, August 2023 and March 2024 respectively, which showed improvement in the hip alignment and stability and reduced hip subluxation. It was also noted that few irregularities in the sessions also lead to reduced hip stability.

Conclusion

In this case report a potentially beneficial outcome was achieved to reduce and maintain hip subluxation with non-surgical physiotherapy intervention in spina bifida, providing a good future scope of study.

This study can be considered as a pilot study and can be explored in a larger sample size and Hip strengthening protocol be developed for individuals with spina bifida and other neuromusculoskeletal disorders.

Keywords: SpinaBifida, Meningomyelocele, Hip Subluxation, Case Report

Sr. No. - 59 Code - C2T5

Title: Effect of Brain Gym Exercise on cognitive function, Stress, mindfulness in elderly Individuals-A Pilot Study.

Authors: 1. Sandesh Sakpal 2. Dr. Suvarna Ganvir 3. Dr. Parag Ranade (PT) 4. Dr. Dipali Suvarna (PT) Affiliation: 1. Assistant Professor, K J Somaiya College of Physiotherapy 2. Professor and HOD, Neuro PT Dept, DVVPF College of Physiotherapy, Ahmednagar 3. Principal, SKN College of Physiotherapy, Pune 4. Associate Professor, K J Somaiya College of Physiotherapy

Abstract:
Background Study: Elderly Population is increasing constantly over the years in India. Synaptic loss is a key structural marker of aging in the nervous system . Sensory perception and processing speed decline with age, thus impacting test performance in many cognitive domains. Brain Gym activities include 26 basic motions, which are believed to improve perception and stimulate the brain hemisphere by neural re-modelling to facilitate the whole brain. Brain Gym comprises very easy body movements that promote brain hemisphere synchronization through neural re-modelling.
It works on the principle of re-patterning, the repatterning which decreases the concentration of connections going to only one hemisphere and increases the connection between the right and left hemispheres, facilitating learning & cognitive performance.

Aim & Objective
To study the effect of Brain Gym Exercise on cognitive function, Stress, mindfulness in elderly Individuals.

Methods
Elderly populations from 60-75 years old , 10 samples recruited by convenience sampling, Participants with Baseline score – MMSE 24>30 were included. Brain Gym exercises were administered three times a week over a four-week period. Cognitive function, stress, and mindfulness were checked at baseline, and at 2 and 4 weeks post-intervention, using the Addenbrooke's Cognitive Examination III (ACE-III), Mindfulness Awareness Scale (MAAS),DASS-21, and Digit Span Test.

Results
Data was analysed by using the SPSS software. Repeated Measures Anova with post-hoc pairwise comparisons conducted using the Bonferroni test..Follow up analysis which indicates that each pairwise difference was significant $P < 0.05$.

Conclusion
Brain Gym exercises have promising effects on Improving Cognition, Mindfulness and reducing stress in elderly Individuals. Can be used as an adjunctive tool for cognitive rehabilitation.

Keywords: Cognitive rehabilitation , Brain Gym Exercises , Elderly Individuals.

Sr. No. - 60 Code - C3T1

Title: Effectiveness of Tele-Pulmonary Rehabilitation in RA-ILD: A Case Study

Authors: 1. Dr. Mohini Kamat (PT) 2. Dr. Ashwini Patole (PT), 3. Dr. Mrinmayee Koltharkar (PT)
Affiliation: 1. Senior Physiotherapist, The Pulmonary Rehab 2. Assistant Professor, K J Somaiya College of Physiotherapy 3. Founder, The Pulmonary Rehab

Abstract:
Background: Tele-Pulmonary Rehabilitation (Tele-PR) is an emerging field that leverages online platforms to provide Pulmonary Rehabilitation (PR), improving accessibility for individuals with chronic respiratory conditions. This study evaluates the effectiveness of structured Tele-PR program in enhancing functional parameters in patients with Rheumatoid Arthritis-Interstitial Lung Disease (RA-ILD).

Aim and Objectives: To assess the effectiveness of a Tele-PR program on functional capacity and respiratory parameters in an individual with RA-ILD.

Method: A 61-year-old female with RA-ILD (diagnosed 2016), hypertension, and hypothyroidism presented with dyspnea on exertion (MMRC Grade I-II), dry cough, knee & finger pain, fatigue, and exercise intolerance. Her medical profile includes medications for antifibrotics, steroids, antihypertensives, and thyroid supplements, along with vaccinations for influenza, pneumonia, and herpes. Investigations showed HRCT with interstitial thickening, spirometry results of FEV1/FVC 85.49%, FVC 1.78L (83% predicted), FEV1 1.52L (99% predicted), TLCO-SB 2.75 (55% predicted), Rheumatoid Factor 35 IU/ml, T3 84 ng/dl, T4 7.3 µg/dl, TSH 1.42 µIU/ml, and a normal 2D Echo. After an online consultation, a customized Tele-PR plan with patient education, breathing exercises, respiratory muscle training, aerobic training, strength training, flexibility, and nutritional counseling was implemented twice weekly for 3 months. Functional outcomes were reassessed after 3 months.

Result: Post-intervention, patient demonstrated clinically significant improvements in 6- Minute Walk Distance (6MWD) which increased from 533m to 600m. Single Breath Count (SBC) improved from 50-53 to 66-80 counts, while Breath Holding Time (BHT) increased from 18-35 to 40-52 seconds.

Conclusion: Tele-Pulmonary Rehabilitation was clinically effective in enhancing functional capacity in patient with RA-ILD. Given its global accessibility, Tele-PR provides a valuable alternative for individuals who require pulmonary rehabilitation but face mobility constraints or geographical barriers. Further research on larger cohorts is warranted to validate these findings.

Keywords: Tele-Pulmonary Rehabilitation, RA-ILD, Exercise, Online Rehabilitation

Sr. No. - 61 Code - C3T2

Title: Bridging the Gap in ILD care: Effectiveness of Tele - Pulmonary Rehabilitation on functional parameters in patients with ILD - A case series

Authors: 1. Dr. Ashwini Prakash Patole 2. Dr. Mrinmayee Koltharkar
Affiliation: 1. Assistant Professor, K J Somaiya College of Physiotherapy 2. Founder, The Pulmonary Rehab

Abstract
Background: Pulmonary Rehabilitation (PR) is recommended for individuals with chronic respiratory diseases, with strong evidence supporting its benefits. While traditional PR models are often inaccessible, this case series explores Tele-Pulmonary Rehabilitation (Tele- PR) as a scalable and innovative model for enhancing Interstitial Lung Disease (ILD) care.

Aim: To evaluate the effectiveness of Tele-PR on functional parameters in patients with ILD

Objective: To assess the effectiveness of Tele-PR on functional parameters in patients with ILD using 6 Minute walk distance (6MWD), Breath holding capacity (seconds)(BHC), Single Breath Count Test (SBC) and Forced Vital Capacity (FVC)

Methods: Three cases diagnosed with ILD and are on medical management. Patient 1 - is in room air. Patient -2 uses supplemental oxygen S.O.S or during exertional activities, Patient - 3 is on continuous oxygen therapy. Three diagnosed cases were consulted and assessed online on functional parameters and then a customized Pulmonary Rehabilitation program was
planned. Exercise sessions were conducted twice a week for one hour each for a period of 6 months. Patients were reassessed on the functional parameters after 6 months

Results: There has been significant improvement in the functional parameters of all three patients. The 6 Minute Walk Distance test showed a significant difference in mean of the 3 from 315 to 395 m. While Breath holding time increased almost twice as much from 9 sec to 17 sec. And a change in the count test from 29 to 36. Assessment parameters of pulmonary function where FVC was considered changed from 38% to 46%.

Conclusion: This case series highlights the effectiveness of Tele - Pulmonary Rehabilitation in significantly enhancing functional outcomes for ILD patients, even those requiring supplemental oxygen. These findings reinforce the potential of Tele- PR as a global, cost-effective solution to bridge gaps in ILD care, improving accessibility in remote or underserved areas.

Keywords: Interstitial Lung disease, Telerehabilitation, Pulmonary rehabilitation, Digital health, Tele - Pulmonary Rehabilitation

Sr. No. - 62 Code - C5T1

Title: Comparison of the effectiveness of Jigsaw as a Collaborative method of Teaching-learning with Didactic method of Teaching-Learning on scores of affective and cognitive domains for Bachelor of Physiotherapy graduates

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Abstract:

Background: The Jigsaw method emphasizes collaborative learning through group interaction and shared responsibility. To prepare students for their future professional roles, it is essential for them to engage in collaborative learning that fosters development of core competencies necessary for clinical practice.

Aim

To study the effectiveness of Jigsaw as a student-centric method of Teaching-learning for Bachelor of Physiotherapy-(BPT) graduates

Objectives

1. To evaluate the effect of implementation of Jigsaw method of Teaching-learning with Didactic method of Teaching-Learning on scores of affective and cognitive domains for Bachelor of Physiotherapy graduates.
1. To determine perception of stakeholders (participating BPT graduates and faculty members) regarding student-centric methods of Teaching-learning.

Methodology

Following ethical approval, 100 Bachelor of Physiotherapy(BPT) CBCS Semester III students from the 2022-23 cohort participated in the study. The participants were divided into two groups; control group(n=50) received training through didactic Teaching-learning method, and study group(n=50) trained through Jigsaw method of Teaching-learning. The training was conducted by a primary investigator, with support from trained faculty members. Pre and post-test questionnaires were used to evaluate affective and cognitive domains related to Electrotherapy courses. Feedback on the Jigsaw method was collected from students and faculty members following intervention.

Results

Jigsaw group demonstrated significant improvement($p<0.05$) in affective and cognitive domain scores compared to didactic group. feedback from a total of 80% students indicated that Jigsaw method promoted inclusivity, improved understanding and fostered collaboration. Additionally, 77.78% faculty members reported Jigsaw enhanced student communication and encouraged collaboration. However, they noted with larger class sizes, the method became time-consuming, faced space limitations, and led to casual attitude from students.

Conclusion

Implementation of Jigsaw method significantly improved both affective and cognitive domains among Bachelor of Physiotherapy students, highlighting its effectiveness in fostering student engagement and collaborative learning. A majority of faculty members reported that Jigsaw improved student communication and promoted collaboration.

Keywords

Jigsaw, Collaborative method, Teaching-learning

Sr. No. - 63 Code - C5T2

Title: Lights, Camera, Cinema: An Innovative Approach to Enhancing Soft Skills In Pre-Clinical Physiotherapy Education

Authors: 1 Dr. Vijaya Krishnan (PT), 2 Dr. Mayuri Khatavkar (PT), Affiliation: 1. Assistant Professor, MGM College of Physiotherapy, Navi Mumbai. 2. Associate Professor, TMV's Lokmanya Tilak College of Physiotherapy, Kharghar, Navi Mumbai

Abstract:
Background: Contemporary healthcare education demands innovative approaches to develop holistic professional competencies especially in developing comprehensive soft skills alongside technical competencies. This necessitates robust interpersonal skills that traditional educational methods often struggle to cultivate effectively. Cinemeducation, an innovative pedagogical approach utilizing film and visual media as educational tools, offers a potentially transformative method for enhancing critical interpersonal and professional skills.

Objective
This study aimed to evaluate the impact of cinem education on communication, empathy, teamwork, and time management skills among pre-clinical physiotherapy students.

Methodology
A quasi-experimental study was conducted with 60 pre-clinical physiotherapy students randomly allocated into intervention and control groups. The intervention group participated in a structured cinemeducation program involving carefully selected films and web series, guided discussions and reflective exercises. The content included visuals in Hindi, Marathi and English languages. The control group received traditional didactic teaching. Pre- and post-intervention assessments were conducted using standardized validated tools.

Results
Significant improvements were observed in the intervention group across all measured parameters. Qualitative feedback revealed students' enhanced self-awareness of soft skills, emotional intelligence, and understanding the professional perspective of interpersonal dynamics. It was also noted students showed eagerness to explore other topics through movies.

Conclusion
Cinemeducation demonstrates remarkable potential as an innovative educational strategy for developing crucial soft skills among pre-clinical physiotherapy students. The approach offers an engaging, visual storytelling and reflective method for nurturing comprehensive professional competencies beyond traditional instructional techniques.

Keywords
Cinemeducation, Skill development, Interpersonal skills, Professional Competency, Educational Innovation

Sr. No. - 64 Code - C5T3

Title: Improving the Communication Skills with MUHS COMPEL module in preclinical undergraduate physiotherapy students – A Quasi Experimental study

Authors: Dr Mayuri Khatavkar (PT)
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Abstract:
Background: Communication Skills are utmost important in interacting with patients in the healthcare profession. In this light, Maharashtra University of Health Science has introduced one new module of Communication Skills in their newly designed COMPEL module. There is a need to imply this skill to budding physiotherapists in their own way of understanding, such as by blended learning technique.

Aim and Objectives
This Study aims at understanding the e cacy of the Communication Skills module in modern way of teaching and to assess the improvement of this soft skill in preclinical undergraduate physiotherapy students.

Method
After obtaining ethical approval, students were informed about the purpose and course of the study and their consent was obtained. A batch of First year BPTh students was recruited for this study. After considering absenteeism, 38 out of 50 students were recruited. Their Pre and Post intervention assessment was done by Communication Skills Attitude Scale. The data was further taken for the analysis.

Result
Positive Attitude and Negative Attitude constructs were calculated and analyzed further. At 95% CI and p value at less than 0.05, Positive Attitude has p value of 0.016 which was significant but however and that of negative was statistically non-significant.

Conclusion
There was an improvement in the Positive attitude construct of Communication skills with the COMPEL module.

Keywords
Communication skills, COMPEL module, Undergraduate Physiotherapy students

Sr. No. - 65 Code - C5T4

Title: A Narrative Review of Sample Size Determination in Qualitative Research: Balancing Depth and Saturation

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Abstract:
Sample size calculation is critical in research, as it ensures that studies are adequately powered to produce reliable and valid results. While quantitative research employs statistical formulas for precision, qualitative research lacks standardized methods, focusing instead on achieving thematic saturation. This article explores the significance of sample size in qualitative studies,
emphasizing its role in ensuring depth, credibility, and methodological rigor.

Aim : To discuss methods of sample size determination in qualitative research.

Objectives
1. Highlighting the importance of achieving data saturation.
2. Exploring approaches like theoretical saturation and information power.
3. Discussing how sample size impacts study credibility and transferability.

Method
A narrative review of qualitative research methodologies was conducted, examining principles like saturation, theoretical frameworks, and purposive sampling. The study also analyzed guidelines from experts, including Creswell's emphasis on iterative analysis for achieving data saturation.

Result
The findings indicate that qualitative sample size depends on the research aim, complexity, and diversity of perspectives. Methods such as saturation point, theoretical saturation, and purposive sampling guide decisions. The concept of information power, where smaller samples can su ce with specific and high-quality data, was highlighted as a flexible approach.

Conclusion
In qualitative research, sample size is guided by data saturation rather than rigid formulas. Researchers must balance participant numbers to achieve comprehensive insights without excessive data. Methods like purposive sampling and iterative analysis ensure the credibility and depth of findings.

Keywords
Qualitative Research, Sample Size, Data Saturation, Theoretical Saturation, Information Power.

Sr. No. - 66 Code - C6CU1

Title: Step into Sustainability: The Power of Piezoelectric Tiles.

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Abstract:

Background and Purpose:

The Global Goals and 2030 agenda for sustainable development as adopted by the United Nations and World Health Organization aims to interconnect the world and enhance the millennial development goals through innovation to achieve new energy e cient pathways. As a path of transition and economic growth in the developing county as India , it is important to have an alternative to a cleaner and a long term sustainable source of energy. The development of new fuel resources offers the potential to reduce carbon footprints, mitigate environmental harm, and stimulate economic growth through technological innovation and job creation in green energy sector. However, a financially stable and viable source of power that aligns with good health and well being, affordable and clean energy and sustainable cities and communities required that will be environment friendly and possess a straightforward method of producing energy is necessary. Hence Piezoelectricity power supply underscores the potential as an innovative approach to generate energy. In order to encourage innovational change, Piezoelectric transducer that operates on the principle of piezoelectricity can be included for a better energy production and conservation. This conversion of energy can be harvested in the form of electric energy which promotes human fitness and energy production with a positive output.

Impact of the problem:

India lost 668,400 hectares of forest annually between 2015 and 2020, placing it second globally after Brazil during this period. The loss of forests has led to the release of 51 million tons of carbon dioxide annually. In view of sustainable development we have succeeded in adopting energy from water, wind and solar. However they too have several disadvantages, the primary one being climate change. Current climate change scenarios highlight significant and alarming trends across various regions all over India and over the world . Climate change has a significant impact on India's renewable and conventional energy production, creating both challenges and opportunities.

To list a few challenges:

- Reduced Solar E ciency – In regions experiencing prolonged heatwaves, such as Central India, this e ciency drop significantly reduces the output of solar energy installations, even as demand for electricity increases due to cooling needs. Similarly in regions like Himachal Pradesh where there is huge cloud cover especially during winter season production of solar energy is widely affected.
- Unreliable Hydroelectric Power – In areas like Himachal Pradesh, reduced rainfall leads to lower water availability, which directly impacts hydroelectric generation e ciency and output. This makes hydroelectric energy production is increasingly unstable.
- Unpredictable Wind Patterns Affect Wind Energy- In regions like Tamil Nadu and Gujarat, where wind farms contribute significantly to renewable energy output, these changes could reduce the stability and predictability of wind energy production.
- Increased Energy Demand and Strain on Infrastructure- Climate change leads to intensified heatwaves and extreme weather, which in turn increases the demand for air conditioning and cooling systems, straining electric grids and energy infrastructure . In cities experiencing frequent blackouts, infrastructure resilience remains a critical concern, requiring urgent upgrades and investments. While renewable energy is essential for mitigating climate change, its generation is intricately tied to environmental conditions. Adapting infrastructure and improving technology are necessary to ensure the resilience of renewable energy systems in the face of a changing climate. Here comes the oppor-

tunity of piezoelectricity which justifies the need for an alternate source of power generation. Important components of piezoelectric system:

1. Piezoelectric sensor/ transducer
2. Battery
3. Primary battery
4. Secondary battery
5. Piezoelectric tiles.

A piezoelectric sensor /transducer is a device that uses the piezoelectric effect to measure pressure, acceleration, and force by converting them to an electrical signal

A piezoelectric transducer operates on the principle of piezoelectricity. Typically made with quartz, the surfaces of the piezoelectric material are coated with a thin

layer of a conductive material like silver. When stress is applied, the ions in the material shift towards one conductive surface and away from the other, generating an electric charge. This charge can be used to measure stress. The direction of the the charge produced depends on the direction of the applied stress. This helps to convert mechanical energy to electrical energy which is harvested with the help of steps which would go wasted. Hence, electricity can be generated with the help of piezoelectric tiles as a long term sustainable and weather independent medium.

Value proposition:
Piezoelectric floors are designed to capture the wasted energy and resources and store and redistribute them whenever needed. Energy is generated when a person steps on these tiles that feature Piezoelectric attributes. This kinetic energy is thus then converted into electricity. Following are the advantages of piezoelectricity over the existing solutions:

- This concept emphasis on the use of wasted energy and resources to generate electricity.
- There is no need for fuel imports to generate electricity .
- Piezoelectric tiles are designed to capture kinetic energy which is produced by humans when they step over it.
- Environmental friendly solution towards sustainability.
- Unlike any other widely used renewable source of energy this is weather independent .
- It helps to reduces global pollution levels
- Harnesses the power of mechanical stress to generate electricity.

Sr. No. - 67 Code - C6CU2

Title: Design and Development of a Low-Cost, High-Accuracy Sensor-Integrated Glove for Hand Rehabilitation : Gripster

Authors:1. Batul Shaikh. 2. Sajida Shaikh. 3. Dr. Prachi Sarvaiya (PT)
Affiliation: 1. UG Student, K J Somaiya College of Physiotherapy 2. UG Student, K J Somaiya College of Physiotherapy 3. Assistant Professor, K J Somaiya College of Physiotherapy

Abstract:

BACKGROUND and PURPOSE

Hand rehabilitation is a critical aspect of recovery for individuals affected by musculoskeletal and neurological disorders. Rehabilitation helps in reducing and preventing immobility, loss of function by restoring motor functions and improving the quality of life of patients recovering from hand injuries. Technology assisted devices designed to assist rehabilitation can potentially increase the e ciency and accessibility of therapy by assisting therapists toprovide consistent training for extended periods of time, and collecting data to assess progress. They can be used to assess performance before, after and during an intervention, and also provide targeted intervention consistently and repetitively depending on the extent of impairment. This research thus helps to explore the design and development of the Gripster glove, by focusing on its sensor integration, accuracy, and cost-effectiveness. By examining glove's performance in real-world rehabilitation scenarios and technical aspects of sensor-integration, this study aims to create a scalable solution that can aid in restoration of hand functionality, ultimately improving the quality of life for patients undergoing rehabilitation.

IMPACT OF THE PROBLEM

Musculoskeletal and neurological injuries and disorders such as trauma, fracture of wrist, tendon injuries, occupational injuries, stroke, and spinal cord injuries lead to impaired ability to perform hand functions. Hand is the most used body part to carry out activities of daily living. Any impairment or injury in the hand causes physical discomfort and disability. Hand rehabilitation therefore plays a crucial role in regaining functional ability. Traditional rehabilitation methods involve manual therapy and therapeutic exercises, which may lack precision or real-time feedback necessary for optimal recovery. To address such challenges, wearable technologies have emerged as a promising solution, to enhance the rehabilitation process through continuous monitoring and interactive feedback to the patients and the therapists

VALUE PROPOSITION

The Gripster project is a low-cost, high-accuracy, sensor-integrated glove that represents a novel approach to hand rehabilitation. This wearable device includes a network of sensors capable of tracking the user's hand movements, grip strength, and dexterity, offering continuous, accurate and detailed feedback to both the patient and the therapist. By integrating these sensors into a glove format, the Gripster ensures that patients can engage in rehabilitation exercises in a natural, realistic manner, facilitating personalized therapy sessions, and also benefiting from the precise data that can guide their progress. Hand rehabilitation devices are often quite expensive and not accessible to all patients, particularly those using advanced sensors, especially in low-income regions. This research thus aims to develop a cost-effective solution that ensures broader accessibility to rehabilitation technologies for patients with hand injuries and disorders By focusing on including high-accuracy sensors in the gloves, the study aims to overcome the limitations of current devices that may lack precision or fail to provide detailed, actionable data. The ability of the glove to provide reliable and real-time data can support better tracking of recovery and the effectiveness of different therapeutic exercises.

•Method

1. Design Phase.

- The glove will be designed ergonomically with lightweight and stretchable fabric to ensure comfort, durability, and ease of wear.

- Choose low-cost high-accuracy sensors capable of monitoring various aspects of hand movement and force, such as:
  - Flex sensors for measuring finger bending angles.
  - Force-sensitive resistors (FSRs) to detect grip strength.
  - Inertial measurement units (IMUs) to track hand orientation and motion.

- Develop small, low-power micro-controllers that can interface with the sensors, process data, and transmit the data wirelessly to a mobile or desktop application for further analysis.

- Design easy to use mobile or computer-based interface to provide real-time feedback to patient and therapist during exercises such as visual and haptic feedback.

1. Prototyping and Fabrication.
2. Custom-fit glove inserts that accommodate the sensors can be created using 3D printed or other cost-effective techniques.
3. The selected sensors (flex sensors, FSRs, IMUs) to be attached to the glove in key areas (fingers, palm, back of the hand) for optimal data collection.
4. Ensure the glove is powered by lightweight, rechargeable batteries with su cient life for a typical rehabilitation session (e.g., 1-2 hours).

5. Software Development.
6. Implement algorithms for data filtering and analysis, such as calibrating sensor readings for accuracy and mapping the raw data into meaningful outputs (e.g., angle, grip strength).
7. Create an easy to use interface that displays real-time data and provides feedback on rehabilitation progress such as graphical representation of hand movements, progress tracking and goal settings.

8. Validation and Testing.
9. Evaluate validity and reliability of the device by comparing data from the glove with a gold-standard measurement system (e.g., motion capture or force sensors).
10. Conduct user trials with healthy individuals first to evaluate comfort, ease of use, and effectiveness of the device in supporting hand exercises. Collect feedback on user experience and identify any areas for improvement. And later perform small scale clinical trials on patients to assess rehabilitation outcomes and clinical use of the device.
11. Assess the robustness and durability of the glove under repeated use, wear-and-tear, washability, and battery life.

COST ANALYSIS

Rehabilitation gloves usually cost around thousand to lakhs making it inaccessible in lower socio-economic regions. By incorporating locally available components and cost-e cient sensor technology Gripster thus aim in reducing the cost of production making it more accessible for widespread use.

Keywords

Gripster, hand rehabilitation, hand injuries, wearable device, innovative technology.

Sr. No. - 68 Code - C6CU5

Title: Development of a Novel Instrument for Assessment of Functional and Structural Scoliosis

Authors: 1. Saba Ansari and 2. Dr. Manali Yadav (PT)
Affiliation: 1. UG Student, K J Somaiya College of Physiotherapy 2. Assistant Professor, K J Somaiya College of Physiotherapy

Abstract:

Background and Purpose:

Scoliosis, a lateral curvature of the spine exceeding 10 degrees, affects millions worldwide, primarily during growth spurts in childhood and adolescence. Early diagnosis and intervention are critical to preventing progression and reducing long-term complications. However, existing assessment methods pose significant challenges:

1. Posture Observation relies on subjective clinical expertise, potentially leading to inconsistent and inaccurate diagnoses.
2. Adam's Forward Bend Test identifies asymmetry but lacks precision in quantifying curvature.
3. Palpation may miss subtle abnormalities due to its reliance on tactile skills.
4. X-rays and CT Scans are accurate but expose patients to radiation risks, especially problematic for children requiring frequent monitoring.
5. MRI provides detailed imaging but is expensive and impractical for routine screening.
6. Scoliometer offers limited reliability and does not directly measure the critical Cobb angle.

The proposed innovation a novel, non-invasive instrument aims to address these gaps. It offers real-time, quantitative data for spinal alignment, eliminates radiation exposure, and ensures objective, reproducible results. By combining advanced imaging and sensor technology, this device facilitates early diagnosis, tracks progression accurately, and distinguishes functional from structural scoliosis, improving patient outcomes and reducing healthcare costs.

Impact of the Problem:

1. Diagnostic and Treatment Challenges
   The absence of a standardized, reliable tool complicates scoliosis diagnosis. Misclassification between functional and structural scoliosis often delays targeted interventions, exacerbating the condition and its complications. Current methods lack precision and are highly dependent on the clinician's expertise, leading to variable outcomes.
2. Economic Impact
   Scoliosis management incurs significant costs. Diagnostic tests such as X-rays, MRIs, and CT scans are expensive and often require multiple sessions, increasing the financial burden on healthcare systems and patients. Moreover, repeated radiographic evaluations pose long-term health risks.
3. Quality of Life
   The lack of accessible and reliable tools results in delayed diagnoses, leading to advanced deformities in many cases.
   Severe scoliosis significantly impacts daily activities, physical mobility, and overall health, diminishing the quality of life.
4. Physical Health Impact
   Undiagnosed or poorly managed scoliosis can cause worsening spinal deformities, chronic pain, reduced mobility, and, in severe cases, respiratory and cardiovascular complications due to organ compression.
5. Psychosocial Impact
   Adolescents with visible postural changes may experience social anxiety, isolation, and low self-esteem. The psychological burden of scoliosis often exacerbates during critical developmental years, affecting mental health and social relationships.

Value Proposition:

The proposed instrument offers several advantages over current diagnostic tools:

1. Radiation-Free Assessment
   Unlike X-rays and CT scans, the device ensures patient safety by eliminating exposure to ionizing radiation, particularly critical for children and adolescents.
2. Enhanced Precision
   The instrument provides real-time, quantitative data on spinal curvature, including measurements of the Cobb angle.
   This precision facilitates early diagnosis, accurate monitoring, and tailored treatment plans.
3. Objective and Reproducible Results
   The device reduces reliance on subjective assessments, ensuring consistent results across clinicians and settings.
4. Cost-Effectiveness
   By minimizing the need for expensive imaging modalities and frequent clinical visits, the innovation significantly lowers diagnostic and monitoring costs.
5. User-Friendly Design
   Portable and easy to use, the instrument is suitable for diverse clinical and community settings, improving accessibility and patient compliance.
6. Comprehensive Monitoring
   Capable of distinguishing between functional and structural scoliosis, the device enables targeted interventions and tracks changes over time, reducing the risk of complications.

Sr. No. - 69 Code - C6CU3

Title: Swasthya Health Card: A Comprehensive Solution for Streamlined Healthcare

Authors: Divesh Shankar Jairamdasani
Affiliation: UG Student, MGM School of Physiotherapy, Navi Mumbai

Abstract:
Background and Purpose
Healthcare advancements have significantly increased life expectancy and improved the quality of life. However, one critical aspect that still lags behind is effective medical documentation. Although India is progressing rapidly towards a digital era, healthcare systems have yet to fully embrace this transformation. The lack of accessible and accurate medical records remains a pressing challenge, particularly in emergencies and among elderly patients unable to recall their
medical history. The Swasthya Health Card is an innovative, technology-driven solution designed to integrate patient records, ensure secure access to healthcare providers, and enable real-time emergency assistance. It aims to enhance healthcare delivery through e cient record management, reduced paperwork, and the prevention of medical malpractice.

Impact of the Problem
• Critical Situations: Limited access to previous medical histories during emergency leads to medication errors, misdiagnoses, and delayed care.
• Elderly Vulnerability: Many elderly individuals cannot recall their medications or surgical histories.
• Accidents and ICU Admissions: Lack of medical records increases risk during emergency treatments.
• Fake Practitioners: The rise of unregistered practitioners compromise patient safety.
• Underutilization of Schemes: Government health schemes like Ayushman Bharat are often underused due to lack of awareness and integration.

Value Proposition
The Swasthya Health Card will address the following issues with 5 key features:
1. Integrated Medical History:
2. QR code-linked database containing patient demographics, medical history, family history, medications, and surgical records.
3. Secure access via registered mobile numbers of patient and 2 step verification, doctors using unique registration numbers an OTP verification to maintain privacy and discourage malpractice.
4. Emergency Assistance with GPS:
5. Embedded GPS for real-time location tracking, enabling patients to trigger alerts and notify the nearest healthcare facility for ambulance dispatch during emergencies.

6. Streamlined Hospital Processes:
7. Digital prescriptions and lab reports updated through QR scanning, to reduce paperwork, waiting time and help in maintenance of national registry for health different conditions.

8. Health Insurance and Government Scheme Integration:
9. All eligible government schemes and existing health insurance plans will be integrated with the database for seamless access and increased utilization.

10. Malpractice Prevention:

o Only registered practitioners can access patient records, after 2 step verification from patient relatives safeguarding against malpractices..

Conclusion

The Swasthya Health Card is a transformative approach to healthcare, leveraging technology to improve patient outcomes, seamless documentation, , and enhance healthcare accessibility. By integrating medical records, enabling real-time emergency assistance, and preventing malpractice, it sets a benchmark for patient- centered healthcare solutions

Keywords
Swasthya card,streamlined healthcare

Sr. No. - 70 Code - C6CU4

Title: An Innovative Framework For Redefining Elderly Housing: The Senior Space Handbook Model

Authors: 1. Swapneel Pote and 2. Dr. Mugdha Dhopeshwar (PT)
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Abstract:
Background and purpose
The world population is changing dramatically, with more elderly people leading better lives. Additionally, this growth necessitates housing solutions that address the unique social, psychological, and physical needs of older people. The challenges likely associated with aging include mobility or balance issues, sensory decline, and chronic health conditions. This decline in physiological functioning invites various age-related problems. Falls are considered one of the common age-related problems that increase morbidity and mortality in the aged population.

Literature reported that the majority of falls in the elderly are due to environmental factors, and the location of the fall is often found to be inside the house. The age-related changes reduce the functional capacity of the elderly, which can make their existing living environments unsafe or sometimes inaccessible. Elderly people face the risk of accidents and are much dependent on caregivers because designs of traditional housing do not adapt to the changing needs of individuals with age. This reduces the quality of life.

Environmental modifications in housing are a key to helping older adults maintain their independence, safety, and quality of life. Housing can be designed to meet the varied needs of older adults through universal design, sustainability, and accessibility. These adjustments improve functionality and enhance psychological well-being by enabling people to age in place.

The Senior Space Handbook Model focuses on “aging in place” by finding solutions to the problems, like falls, addressed by older adults. This model refurbishes aging by creating environments where people feel safer and more comfortable in living active lives, while at the same time considering their mental health and well-being. The spaces would not only enhance independence but also encourage physical activity and emotional well-being. It is an idea that makes the process of aging more meaningful, positive, and secure through thoughtful design
and community support.

Physiotherapists are often engaged in patient education, especially home environment modification in the elderly as a fall prevention strategy. However, despite the growing awareness of the importance of age-friendly housing, there is a gap in research focusing on comprehensive and scalable housing models tailored for educating elderly populations.

Objectives
1. To create a precise and innovative Senior Space Handbook Model to depict the environmental modifications in an elderly housing to reduce risk of falling

Impact of the problem
The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) emphasize the importance of creating safe living environments to reduce the risk of falls by modifying homes. Recent studies in Australia involving 157 community care recipients reported that home modifications led to a 42% reduction in caregiving hours per week. This highlights how home adaptations can significantly enhance the quality of life and independence for the elderly population.

There is a critical need to enhance awareness among the elderly about the importance of home modifications. Presently, most resources designed for this purpose rely heavily on instructional methods. Considering the wide range of cognitive abilities, socioeconomic backgrounds, and educational levels within the elderly population, it is worth questioning how effective these instructional methods are in fostering awareness. Could alternative approaches be more effective in addressing the diverse needs of this demographic?

Thus, this study aims to develop a model of environmental design that integrates principles of ergonomics, assisted systems, and accessible technologies to suit. The proposed model focuses on enhancing safety, accessibility, and simplicity of use. By adopting this approach, the model seeks to not only reduce the care required by the elderly but also lower their risk of falls. Furthermore, it aims to empower the elderly to make informed decisions regarding the layout and structure of their homes effectively.

Value Praposition

Most of the existing solutions that have been designed to educate older adults and create awareness about home modifications are usually based on textual resources such as CDC checklist and Home Modification toolkit. The Home Modification Toolkit, for instance, provides professionals with materials that increase older people's understanding and access to home modifications. These text-based resources often lack in addressing the cognitive, memory, and other issues most elderly people face.

Our innovation, The Senior Space Handbook Model, is a 3D pop-up booklet model that combines visual and verbal feedback to create an immersive and multisensory learning environment. This methodology improves comprehension and retention by simplifying complicated modification concepts, making them more approachable and understandable for senior citizens. Our strategy enhances independence and ensures safety for senior citizens by empowering them to make informed choices regarding their living arrangements. This innovative approach effectively addresses the shortcomings of existing solutions by converting educational content into a friendly, engaging, and easy-to-understand format for older adults. Also this foldable house model can also be adopted for a community based approach in creating awareness for a safe living environment in elderly.

Sr. No. - 71 Code - C6CU4

Title: Formation of Sport-ready brace for Genu Varum

Authors: 1. Swapneel Pote 2. Dr. Mugdha Dhopeshwar (PT)

Affiliation: 1. UG Student, K J Somaiya College of Physiotherapy 2. Assistant Professor, Dept of Community Physiotherapy, K J Somaiya College of Physiotherapy

Abstract:

Background and Purpose:

Genu varum is observed to be one the most common deformity seen in football players not only in professional players but also in grassroot players. Presence of genu varum causes undue stress on the knee leading to various injuries thus it is necessary to identify and treat it at earliest to prevent it from worsening and causing injuries. Genu varum, bowing of legs is commonly seen in football players because of the extensive use of lower limbs and dynamic movements involved in the sport which places a repetitive mechanical stress on the knees. Kicking especially at an angle of 45 degrees to produce maximum power, dribbling, jumping and quick directional movements along with prolonged period of the game causes muscle imbalance leading to development or exacerbation of Genu varum. Genu varum is characterized by lateral curvature of the lower limbs which causes

the muscles and ligaments to be stretched on lateral aspect while shortened at medial aspects. This also alters the forces acting at the knee such that the axis is shifted medially increasing stress on the medial compartment.

The muscle imbalance, altered forces causes increased tension in the ligaments especially ACL and increases the incidences of knee injuries like ligament sprain, meniscal tears, patellofemoral pain, shin splints and also predisposes the onset knee osteoarthritis.Thus early identification and intervention plays a key role to minimise injuries and help the player reach his athletic potential.

Strengthening of abductors and stretching of the adductors plays the primary role in treatment but using a brace while playing and training can prove to be essential in preventing and correcting genu varum in football players. Though there are braces present to correct the deformity they cannot be used while playing because of their structure, material and bulkiness which restricts movement at the knee. So by designing a brace using elastic material and using three point pressure principle to correct the deformity while minimising restriction of movement at the knee we can correct or prevent worsening the deformity without affecting the player’s performance.

IMPACT OF PROBLEM:

Prevalence of genu varum in an athlete increases the risk of injury making the athlete prone to injuries like ligament and meniscal sprain/tear, patellofemoral pain and predisposes the athlete to osteoarthritis due to increased medial compartment load and decreased joint space which in turn increases the wear and tear.

According to research, football players with genu varum have abductor-adductor muscle imbalance, less dynamic balance, lower body strength, agility,abdominal muscles endurance, and speed as compared to players without this knee alignment problem.

All these factors not only increase the risk of injury but also impede long-term athletic development.

VALUE PROPOSITION (Benefits and Advantages):

● Passive correction of genu varum and maintenance of correct alignment.

● Provides pain relief by alleviating discomfort caused by deformity.

● Provides joint stability, reduces stress on knees and allows controlled movements with limited restriction on mobility.

● Sport-ready design which is lightweight, breathable, durable and easy to use which can be used while playing/training.

Sr. No. - 72 Code - C6PU1

Title: Ambumat – Where Movement Meets Discovery

Authors: Presenting : 1. Meher Bhesania , 2. Akshat Shah , 3. Vedant Nare. OTHERS : 4. Krish Chheda Affiliation: 1. UG Student K J Somaiya College of Physiotherapy 2. UG Student K J Somaiya College of Physiotherapy 3. UG Student K J Somaiya College of Physiotherapy 4. UG Student K J Somaiya College of Physiotherapy

Abstract:
Background and Purpose:
Facilitating balance training and gait rehabilitation in an easier and more convenient manner.

Impact of Problem:
Current training methods for gait often involve therapists providing verbal commands and managing various determinants of gait to facilitate effective movement. Our mat aims to alleviate some of this workload by minimizing the need for continuous instructions. Once the fundamental principle — “Step on the light that is glowing” — is explained, therapists can focus solely on the patient’s performance.

Value Proposition:
- Inclusion of visual cues in therapy: The light can play as a point source towards which the patient has to move. Hence, we incorporate vision, an important sense, in training. This can also be an added benefit for pediatric patients who will find lights attractive and be more included and cooperative in therapy sessions.
- Inclusion of Proprioception: There can be different attachable texture mats that can be used, increasing the scope of proprioception.
- Inclusion of Sound: Sounds of different frequencies can be used to challenge the dynamic posture.
- Reaction Time Training: Patients respond to illuminated bulbs, improving reaction speed.
- Secondary Uses: Placed on walls for reach-out exercises.
- Customization: The distance between the lights and its colour can be adjusted serving a large population of patients.
- Malleability: The mat can be folded, making it user friendly for polyclinics and small spaced clinics in metropolitan cities.

Sr. No. - 73 Code - C6PU4

Title: An Innovative Framework For Redefining Elderly Housing: The Senior Space Handbook Model

Authors: 1. Sajida Shaikh, 2. Anisha Artani, 3. Mithi Jain, 4. Sakshi Gosavi, 5. Bansi Patel, 6. Dr. Pothiraj Pitchai.
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Abstract:
Background and purpose
The world population is changing dramatically, with more elderly people leading better lives. Additionally, this growth necessitates housing solutions that address the unique social, psychological, and physical needs of older people. The challenges likely associated with aging include mobility or balance issues, sensory decline, and chronic health conditions. This decline in physiological functioning invites various age-related problems. Falls are considered one of the common age-related problems that increase morbidity and mortality in the aged population.

Literature reported that the majority of falls in the elderly are due to environmental factors, and the location of the fall is often found to be inside the house. The age-related changes reduce the functional capacity of the elderly, which can make their existing living environments are unsafe or sometimes inaccessible. Elderly people face the risk of accidents and are much dependent on caregivers because designs of traditional housing does not adapt to the changing needs of individuals with age. This reduces the quality of life. Environmental modifications in housing are a key to helping older adults maintain their independence, safety, and quality of life. Housing can be designed to meet the varied needs of older adults through universal design, sustainability, and accessibility. These adjustments improve functionality and enhance psychological well-being by enabling people to age in place. The Senior Space Handbook Model focuses on “aging in place” by finding solutions to the problems, like falls, addressed by older adults. This model refurbishes aging by creating environments where people feel safer and more comfortable in living active lives, while at the same time considering their mental

health and well-being. The spaces would not only enhance independence but also encourage physical activity and emotional well-being. It is an idea that makes the process of aging more meaningful, positive, and secure through thoughtful design and community support. Physiotherapists are often engaged in patient education, especially home environment modification in the elderly as a fall prevention strategy. However, despite the growing awareness of the importance of age-friendly housing, there is a gap in research focusing on comprehensive and scalable housing models tailored for educating elderly populations.

Impact of the problem
The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) emphasize the importance of creating safe living environments to reduce the risk of falls by modifying homes. Recent studies in Australia involving 157 community care recipients reported that home modifications led to a 42% reduction in caregiving hours per week. This highlights how home adaptations can significantly enhance the quality of life and independence for the elderly population.

There is a critical need to enhance awareness among the elderly about the importance of home modifications. Presently, most resources designed for this the purpose relies heavily on instructional methods. Considering the wide range of cognitive abilities, socioeconomic backgrounds, and educational levels within the elderly population, it is worth questioning how effective these instructional methods are in fostering awareness. Could alternative approaches be more effectivein addressing the diverse needs of this demographic?

Thus, this study aims to develop a model of environmental design that integrates principles of ergonomics, assisted systems, and accessible technologies to suit. The the proposed model focuses on enhancing safety, accessibility, and simplicity of use. By adopting this approach, the model seeks to not only reduce the care required by the elderly but also lower their risk of falls. Furthermore, it aims to empower the elderly to make informed decisions regarding the layout and structure of their homes effectively.

Value proposition

Most of the existing solutions that have been designed to educate older adults and create awareness about home modifications are usually based on textual resources such as CDC checklist and Home Modification toolkit. The Home Modification Toolkit, for instance, provides professionals with materials that increase older people's understanding and access to home modifications. These text-based resources often lack in addressing the cognitive, memory, and other issues most elderly people face.

Advantages:

Our innovation, The Senior Space Handbook Model, is a 3D pop-up booklet model that combines visual and verbal feedback to create an immersive and multisensory learning environment. This methodology improves comprehension and retention by simplifying complicated modification concepts, making them more approachable and understandable for senior citizens. Our strategy enhances independence and ensures safety for senior citizens by empowering them to make informed choices regarding their living arrangements.

Benefits:

This innovative approach effectively addresses the shortcomings of existing solutions by converting educational content into a friendly, engaging, and easy-to-understand format for older adults. Also this foldable house model can also be adopted for a community based approach in creating awareness for a safe living environment in elderly.

Keywords- Elderly housing, Handbook

Sr. No. - 74 Code - C6PU2

Title: Glove Aid

Authors: Anusha Shetty,
Affiliation: UG Student, K J Somaiya College of Physiotherapy

Abstract:
Background and purpose:
Glove aid, also called Adhera, aims to assist hand motor activities in daily, menial tasks. Physiotherapy is a huge aid in minimizing detrimental effects of conditions affecting the hands, but recovery (if possible) may take a long time, during which an individual's ADLs (activity of daily life) may come to a halt. This innovative product tackles effects plaguing the hand causing it to be so weak and uncoordinated that basic fine motor tasks cannot be performed.

Impact of problem
Adhera focuses on patients and individuals having any of the following conditions;

- Tremor – Either essential or due to any condition, like Parkinson's disease, can cause an individual to drop objects they are holding due to repeated, involuntary movement of their distal muscles. Such patients will be able to lift and hold small objects like a plate, which if dropped
  could further harm them or anyone else. Essential tremor is common. Experts estimate that it affects about 1% of all people worldwide, and about 5% of people over age 60. It is the most common form of tremor and one of the most common movement disorders.
- Weak hand musculature – Patients who cannot maintain hand muscle contraction and are thus, not able to hold objects for a long time in their hands. Some individuals cannot improve their muscle strength after a point but rather can keep it from deteriorating further will find use of the glove in basic tasks like using keys or lifting a bottle without dropping it.
- Carpal tunnel syndrome - Carpal tunnel syndrome is a condition in which the median nerve in the hand is compressed at the wrist, causing weakness and clumsiness in the hand, this may make it di cult to perform fine movements such as buttoning your clothes, holding any object in hand, numbness, or a loss of proprioception (awareness of where your hand is in space). Cubital tunnel syndrome, compression of ulnar nerve in cubital area, has similar manifestations mainly in the functioning of the hands.
- Geriatric patients have very weak muscles and often drop their belongings because they are not able to maintain contraction to continue holding an object. Another very common occurrence in geriatric population is sarcopenia which is the loss of muscle mass, it causes weakness and loss of muscle functions, including strength in the hands. For example, an old man with weak hand muscles and mild essential tremor wants to unlock the door but keeps dropping the keys, with the help of Adhera he can ensure that the keys do not fall from his hands.
- Epicondylitis occurs due to damage to the tendons in the forearm. There are two types of epicondylitis: medial and lateral which are also referred to as golfer's and tennis elbow respectively. Symptoms include weakness in the wrist and hand, weakened hand grip, pain when squeezing a ball or moving the hand toward the pinkie finger.
- Myasthenia gravis – Myasthenia gravis is an autoimmune disease of the neuromuscular junction which causes weakness of skeletal muscles progressing from drooping of eyelids to eventually weakness in arms and hands with activity. It is managed with medicine and physiotherapy but is not completely curable, hence, glove aid can be extremely useful in this condition.
- Gripping of cylindrical handles of ambulatory aids to increase stability of users is an extremely important improvement adhera hopes to make with further development of the product.

Value of proposition:

- Adhera works on the principle of air suction. The glove consists of small electrically working suction cups present on

the fingers and the palm of the glove which are connected to the microcontroller (Arduino). When pressure is exerted, the microcontroller switches the air suction on. The suction cups utilize the difference in air pressure to create a vacuum force that seals the cup to the surface enabling the pickup and transport of the target material.

- As long as the vacuum seal is maintained, the suction cup will keep its grip. If the vacuum is released the suction cup will release its grip and thus, the object.
- With further development we can make the suction cups very small which will enable the glove to grip cylindrical handles of ambulatory aids like walkers and canes. This will significantly increase stability of patients using said walking aids, improve their coordination and reduce the risks of fall remarkably.
- Most of the conditions like myasthenia gravis and tremor require extensive medications, glove aid by helping in daily functioning reduces dependency on these medications.
- It also limits problems like allergic reactions that a patient can develop to certain medications.
- Adhera is a non-invasive aid giving it an edge over other treatments like tremor-cancelling devices, peripheral nerve stimulation which utilise electrical stimulations that are much more invasive.

Sr. No. - 75 Code - C6PU3

Title: ASSIS-RESIS (The Assistive-Resistive Device)

Authors: Asmi Nisar
Affiliation: UG Student, K J Somaiya College of Physiotherapy

Abstract:
Background and Purpose:
-Assis-Resis (the Assistive-Resistive Device) is a glove that trains muscles of the hand progressively by providing assistance and resistance to movements. Over the years patients have become reliant on therapists and conventional resistive and assistive devices to aid muscle weakness and strengthen muscles.
-This device presents an opportunity for patients to use a portable, easy to use, easy to understand, affordable and non-bulky solution to continue their exercises at home.
-The purpose of this device is to provide a two in one function glove that provides assistance and resistance, which is not present in any existing devices.
-the objective of creating this is to provide a device that has a simplistic use and motivates the patient to be consistent with their exercises without the constant supervision and assistance of a therapist.

Impact of the problem:
-As compared to the other muscle groups of the body, the muscles of the hand are smaller and we can't use the conventional devices like dumbbells or weight cuffs to train these muscles .The patients therefore become dependent on manual assistance and resistance provided by the therapist for rehabilitation.
-The dependency on the therapist increases and the patient has to come regularly to the clinic.
-The patient is not always motivated to go to the therapist for regular exercises.
-Most of the existing resistive devices focus on resisting flexion and extension only ,while the Assis-Resis device resists flexion and extension of the fingers ,abduction and adduction of the fingers , flexion and extension of the wrist.
-There is a limited target area –Many devices, like hand grippers or stress balls, mainly target the fingers, neglecting other aspects such as wrist.
-Lack of progression-some Devices like therapy putty, grippers, springs may not offer enough variation in resistance for continuous progression, limiting their effectiveness for patients who have already achieved a certain level of strength.
-Risk of overuse or injury- Overuse of certain devices particularly hand grippers or stress balls, can strain the muscles, tendons, and joints ,leading to injuries if not used properly
-One size fits all –Many devices don't accommodate individual differences in hand sizes, strength levels, or specific rehabilitation needs, potentially reducing their effectiveness. The A-R Device comes in different glove sizes to accommodate differences in hand sizes. The gloves also have Velcro attachments and magnets of different powers to accommodate different strength levels and specific rehabilitation needs of different patients.
-Boredom and Motivation- when the devices are not simplistic in use the patients get bored of the repetitive exercises leading to decreased adherence to therapy or training regimens. The A-R Device is easy to use, gives the patients a feeling of independence and motivates them to be consistent with their home program without the supervision and assistance of a therapist.
-Limited Versatility-Some devices focus on specific motions (Eg. squeezing or gripping) which may not translate well to functional hand movements needed in daily life.
-Cost Availability: The A-R Device is an affordable device that is portable and sustainable.
-Lack of comfort –springs, grippers may not always be comfortable for repetitive exercises.
-Limited Range of Motion-The existing devices can limit the range of motion because they cause discomfort while performing the repetitive exercises.

-Imbalanced strengthening –Grippers, springs often focus only on specific movements which can lead to imbalanced strengthening.
-The above mentioned devices can be di cult for people with low strength or reduced mobility to use effectively, especially in early stages of rehabilitation.
-Improper use of these existing devices can cause strain and can increase the risk of injury.
-Durability- stress balls and springs and finger bands aren't durable in the long term.

Value Proposition-
-Advantages of A-R Devices
-The A-R Device has the advantage of adjustable resistance and assistance, the resistance and assistance can be increased or decreased according to the patient's strength.
-The A-R Device doesn't have a limited target area, actions such as flexion, extension of the fingers and wrist can be performed along with adduction and abduction of the fingers.
-There is no risk of injury at all. Patients can use the A-R Device without the fear of incurring any injury during performing repetitive exercises without the supervision of a therapist.
-No supervision is required as the glove is safe to use and comfortable.
-The gloves come in different sizes to accommodate differences in hand sizes
-Motivation is crucial for continuing a home rehabilitation program because rehabilitation often requires sustained effort, consistency and discipline over time.
-The A-R Device is easy to use and is portable to ensure that the patient adheres to their routine.
-The glove leverages the use of magnets and uses its property of opposite poles attracting to provide assistance and resistance to movements.
-The A-R Device is cost effective and affordable.
-The A-R Device is lightweight and not bulky therefore it is portable.
-The A-R Device doesn't cause any physical constraint while performing repetitive movements.

Features of the A-R Device
-Detachable magnets of different sizes –Providing assistance and resistance to the movements. The position of magnets changes according to the movements.
-Woollen Gloves –Provides comfort to the patient performing repetitive movements without limiting the range of motion.
-Velcro for attachment of magnets.

Application
-The A-R Device is used in the rehabilitation of muscles for all conditions that cause muscle atrophy and muscle weakness ,example- osteoarthritis, rheumatoid arthritis, carpal tunnel syndrome, wearing a cast, pinched nerve , peripheral neuropathy etc.
-The device is a two in one solution for the treatment of muscle weakness and strengthening .It can be e ciently used at home by a patient without any supervision and assistance and in a clinical setting by a therapist.

Sr. No. - 76 Code - C6PT3

Title: Comparison of traditional volume-oriented Incentive spirometer and Novel volume-oriented Incentive spirometer for improving the lung capacity in the visually impaired population.

Authors: 1. Pooja Gupta, 2. Dr Sudeep Kale
Affiliation: 1. Clinical Therapist, Tata Memorial Hospital 2. Professor, Terna Physiotherapy College

Abstract:
Purpose: A volume-oriented Incentive spirometer is used to increase respiratory function in patients with respiratory conditions, postoperatively, and debilitated patients. The purpose is to increase the transpulmonary pressure and inspiratory volumes, improve inspiratory muscle performance and re-establish or stimulate the typical pattern of pulmonary hyperinflation. When the procedure is repeated regularly, airway patency may be maintained, and lung atelectasis is prevented and reversed. So, its use will be limited to visually impaired patients as it's a visual feedback device. Therefore, this modified volume type of Incentive spirometer will provide them with auditory cues and touch feedback, which will help them perform the activity independently.

This study is related to physiotherapy practice as there is a significant use of it in patients such as pre-operative screening of patients at risk of postoperative complications to obtain a baseline of their inspiratory flow and volume, presence of pulmonary atelectasis, post-operative abdominal or thoracic surgery, patient with inspiratory capacity less than 2.5L, SCI or neuromuscular disease, dysfunctional diaphragm.

Impact
The existing incentive spirometer primarily relies on visual feedback. The blind and the visually impaired population is significantly neglected in benefiting from this device. Therefore, the modified incentive spirometer enables them to perform the activity Independently.

Value proposition
Extend the use of this device on a larger scale for post-operative lung conditions and fitness purposes. Traditional device's reliance on visual cues rendered them inaccessible to the visually impaired population. The lack of cues in the traditional device necessitated modification for easy administration. Also, a pilot study involving 29 participants indicated that the modified volume-oriented incentive spirometer was easier to use than the traditional device. The entire population can use it, not just the blind and visually impaired. However, the main focus is that the Blind and visually impaired population can be benefited. Our commitment is to bridge this gap by ensuring that the blind and visually impaired population can fully access the benefits of the incentive spirometer.

Keywords
Incentive spirometer, visually impaired

Sr. No. - 77 Code - C6PT4

Title: ALIGN: A Digital Solution for Neck Pain Management through mHealthPhysiotherapy

Authors: 1. Dr Mugdha Oberoi, 2. Dr Priyanshu V. Rathod Affiliation: 1. Assistant Professor, KJ Somaiya College of Physiotherapy 2. Professor, School of Physiotherapy, RK University

Abstract:
Background: A major public health concern that impacts both personal health and general well-being is neck pain. Self-care has become vital in today's fast-paced world, and balancing personal and professional lives requires the use of e cient coping mechanisms. Adopting patient-centered, patient-driven care strategies is becoming more and more important. With its robust capabilities for symptom evaluation, lifestyle tracking, treatment delivery, and the gathering of administrative and clinical data, mHealth is a cutting-edge development in healthcare. Both patients and medical professionals are choosing mHealth more and more because of its capacity to deliver care at any time and from any location, overcoming time and location constraints. Nevertheless, only a small percentage of mHealth applications have scientific support, despite their potential.

Problem
Over time, the system for delivering healthcare has undergone tremendous change. Geographical restrictions have mostly vanished with the development of smartphone technology, which has caused a boom in the use of mHealth technologies by patients and healthcare professionals. To investigate how physical therapists could meet present, future, and emerging healthcare demands, the APTA-sponsored Physical Therapy and Society Summit (PASS) was conducted in 2009. Workplaces and the way healthcare requirements are met have changed as a result of the recent COVID-19 pandemic, which has led to a quest for new ways to create a "new normal." It is more crucial than ever to emphasize value-based practices with
customers as major stakeholders. Given this, the authors want to create a cutting- edge mobile physiotherapy app that can be used to evaluate and treat mechanical neck pain, specifically targeting o ce professionals.

Value Proposition
The goal of this cutting-edge mobile application for physiotherapy is to offer a structured, self-paced module for physiotherapy assessment and treatment. Consequently, a novel and verified patient-centered physiotherapy delivery method is produced.

Impact
The Numerical discomfort Rating Scale scores decreased ($p<0.0001$) among participants who used the mobile application, indicating a significant decrease in neck discomfort. Additionally, the Neck Disability score showed a significant improvement following the use of the mobile application, decreasing by 4 points ($p<0.0001$). Participants also demonstrated increased ratings on the Positive Functioning Inventory and Postural Awareness ($p<0.0001$).

Sr. No. - 78 Code - C6PT1

Title: Development of Self-Designed Weighted Gloves on Severity of Tremors in Upper Limbs in Diagnosed Parkinson's Disease

Authors: Dr. Hriday Shah (PT) Affiliation:
Abstract: PhD Scholar, Parul University and Director at Happy Neurons Physiotherapy and Rehabilitation Centre

Background & Purpose:
Parkinson's disease (PD) is a progressive neurodegenerative disorder characterized by motor symptoms, including resting tremors. These tremors significantly impair daily functioning, reducing the quality of life for patients. This is particularly because pharmacological treatments and surgical interventions are associated with various side effects, high costs, and limited accessibility. In this regard, this innovation addresses the need for cost-effective, non-invasive, and accessible alternatives to control tremors in the upper limbs of PD patients. The main aim is to assess the effectiveness of self-designed weighted gloves in lowering the severity of tremors and improving the functionality of the upper limbs over two weeks.

Identification & Description of the Problem:
Tremors are a classical symptom of Parkinson's that interfere with dexterous activities like feeding, writing, and dressing. Apart from interfering with independence, these tremors also stress the psyche. Current treatment options such as DBS and medication offer symptomatic relief but do not cater to the mass population due to the cost barrier and the side effects caused. Weighted gloves are hypothesized to stabilize tremor amplitude by applying gentle resistance and proprioceptive feedback. This innovation leverages these principles to create an affordable tool for tremor management. Clinical evaluation of these gloves using the TETRAS (Tremor Research Group Essential Tremor Rating Assessment Scale) provides objective data on their impact.

Value Proposition:
The self-designed weighted gloves offer several advantages over existing solutions.

1. Easily Replicable: Produced with inexpensive materials, it is easy to produce this glove for both hospital use and home.
2. Non-Invasive: Similar to pharmacological therapies, DBS does not introduce any health risk and its side effects.
3. Adjustable Design: These are adjustable in weight and fit and will be used in proportionally different levels of tremor condition.
4. Therapeutically Friendly: By being integrated within physiotherapy programs, this glove encourages the person towards active participation in rehabilitation against the tremors created among them.
   Rationale for using weights for reduction of tremors

• Sensory Feedback - When a person with tremors wears weights on their limbs, the added weight provides a constant and consistent sensory input to their muscles and joints. Essentially, the brain uses this feedback to adjust and control muscle contractions more effectively.

- Stabilizing and Damping - The additional weight can help dampen the rapid and involuntary oscillations seen in tremors. By adding resistance to the limb, the weights can help smooth out the jerky movements that characterize tremors. This is somewhat similar to the idea of using a counterweight to stabilize a camera tripod or a gyroscope to stabilize a moving object.
- Motor Control - Wearing weights can potentially improve the overall control a person has over their limb's movement. The added resistance can engage the muscles more consistently, aiding in motor planning and execution. This improved control might help minimize the severity of tremors.

- Neuromuscular Fatigue - Engaging the muscles with added weight can lead to neuromuscular fatigue. While fatigue might seem counterproductive, in the context of tremors, it can help to temporarily reduce excessive muscle activity. Fatigue-induced changes in muscle firing patterns can lead to a reduction in tremor intensity.

Unique Features of the Glove

- Neoprene is used because it has high tensile strength, stretchable and easily fits. It is water, dirt and oil repellent.
- Spandex to close the ends as it won't allow dirt to enter.
- The first two fingers are not covered with gloves to allow free mobility of the index and middle fingers as they are highly mobile whereas ring and little finger are for stability and hence, are covered with the gloves.
- Stainless-steel pieces are used to provide weight on the gloves. The weight provided by them would be from 450-700 grams, depending on the requirement ensuring stability. They are polygonal in shape with curved edges so it doesn't hurt the patient or the people in the surroundings. They are broken into smaller polygonal pieces instead of a single slab in-order to allow the glove to stretch and ensure uniform weight distribution and also the free movement of hand during closing and opening movement of the hand. The arrangement also provides an elegant, captivating look to the gloves. Also, stainless-steel does not get corroded easily.
- The ball bearings used on the ulnar side of the palm so as to easily slide on the surface and improve mobility and train the patient for the same.

Conclusion

The self-designed weighted gloves offer an innovative, cost-effective, and scalable approach to the management of tremors in patients with Parkinson's disease. This concept illustrates their potential to enhance the quality of life while overcoming the limitations of current treatment modalities.

Sr. No. - 79 Code - C6PT2

Title: Trigger Point Release Massager

Authors: 1. Mandar Ramesh Malawade, 2. Dr. Shridhar Deshmukh Affiliation: 1. Professor, Krishna College of Physiotherapy, Karad 2. Dean, Krishna College of Physiotherapy, Karad 2.
Professor RIT College of Engineering, Islampur Sangli

Abstract:
Background and Purpose: A Trigger Point (TrP) is a hyperirritable spot i.e. a palpable nodule in the taut bands developed in skeletal muscle fascia. Activities like direct compression or muscle contraction can lead to development of local tenderness, local twitch response and referred pain. This may develop a pain pattern distant from the spot. Trigger points develop in the fascia, in the center of a muscle belly where the motor endplate enters. Trigger points are palpable nodules within the tight muscle. It's 2-10 mm in size and can be palpated at different places in skeletal muscles. TrPs are directly associated with various conditions such as, myofascial pain syndrome, somatic dysfunction, and psychological disturbance.

Impact of the Problem
Trigger point release needs simultaneous application of pressure and release. At the same time we can push or displace the point in a particular direction. Nowadays this pressure application is done manually. Which is time consuming and needs skilled therapists. Therapists have to apply continuous physical efforts on a single patient to relieve trigger points. That may lead to wear and tear of the soft tissues of Thumb and knuckles of the therapist.

Value Proposition
The proposed innovation is a unique device primarily intended to overcome the constraints of existing technologies and to provide a better therapeutic machine support to release trigger point pain and help physiotherapists to treat patients more e ciently. It may be used as an adjunct to manual therapy.

Sr. No. - 80 Code - C6PP1

Title: Prevalence of musculoskeletal dysfunction in farmers of Marathwada and providing a digital prototype.

Authors: 1. Dr. Kalyani Deshmukh 2. Dr. Mugdha Oberoi
Affiliation: 1. PG Student, Nanded College of Physiotherapy and Research Center 2. Assistant Professor, K J Somaiya College of Physiotherapy

Abstract:
.BACKGROUND:-
India is an “Agricultural Nation.” Indian farmers play a vital role in India’s economy. More than half of the population in India is engaged in the agricultural sector (census 2011). 54.6% of the population works in this sector. Agricultural sector contributes 17.8% in the country’s gross value added (GVA) for the year 2019-20.(1,2) Farming is the main occupation in the Marathwada region. Most of the farmers are residing in rural areas and main crops are soyabean, cotton, turmeric, wheat and chickpea.(3) The major population is uneducated and economically weaker, unaware about proper ergonomics. The main farming positions are stoop bending, squatting, forward bending. Lots of weight lifting and carrying activities are involved in the agricultural sector.. All the farming positions require more strength and awareness of proper ergonomics This population is feeding our nation and remaining neglected. Marathwada is a region where
farmers live in rural areas. Lack of education, unawareness of proper posture during work, poor socioeconomic conditions for avail medical facilities, improper medical facilities, unawareness of physiotherapy and other factors affect the health mainly musculoskeletal health in farmers.(4)

Problem
This digital prototype addresses all the above issues and provide subjective e-assessment, e-management, knowledge about government facilities like Ayushman Bharat Jan arogya yojna, e-sanjivani, primary health care address brochures and other health care facilities in regional Marathi language.

Value Proposition
1. Providing a digital solution i.e website in regional language to help the rural population. It includes the following points.
a). Subjective e- assessment
b). Preventive methods
c). E- prescription
d). E- management
f). Built public private relationship
g). Contains brouchers of primary health center’s contact numbers.
f). Promotes government facilities and healthcare scheme e.g Ayushman Bharat Yojana, Pradhan Mantri Jan Arogya Yojana etc.

Impact
This cross-sectional study investigates the prevalence of musculoskeletal dysfunction in farmers of Marathwada region where farmers live in rural areas. The major population is uneducated, unaware about ergonomics, socioeconomically weaker. Their main farming position is stoop bending, standing for prolonged time, severe weight lifting, squatting, carrying heavy weight which causes risk to develop musculoskeletal dysfunction among them. According to these factors through demographic details, Nordic questionnaire and numerical pain rating scale data is collected. The findings contribute to understanding various challenges faced by farmers and in the health care System. This website assists rural residents and farmers with their issues.It addresses issues like resource scarcity and money factor.

Sr. No. 81 Code: C6PP2

Title: GuruTva: Indian made digital dynamometer for precise strength assessment

Author: 1. Prachi Bagul 2. Dr. Dipak Anap

Abstract:
Background and Purpose: Muscle strength is an essential aspect of overall health and well-being, contributing to various physiological functions and enhancing the quality of life. Muscle strength testing is used to determine the ability of muscles or muscle groups to perform a certain movement as it affects their ability to provide stability and support. Muscle testing is an integral part especially in physical therapy assessment as it provides information useful in differential diagnosis, prognosis and treatment of musculoskeletal as well as neuromuscular disorders. Manual Muscle Testing (MMT) is a widely used technique to assess the muscle strength. To proficiently perform the procedure of MMT one must possess a detailed knowledge of human anatomy, muscle function, innervation, ability to palpate the muscle, to distinguish between the normal and abnormalities of positions or movements. Thus, this method is highly subjective. Similarly, the Handheld Dynamometers (HHD) used for strength testing has its own set of limitations which can affect the quality of results. The muscle testing measures must be objective so that even the minimal changes can be documented. A digital instrument would be an e cient tool for objective measure of muscle strength testing; as it will provide a quantitative analysis of muscle strength with Precision.

Impact of Problem and the Solution
Manual muscle testing provides a quick and accessible way to evaluate muscle strength, especially in settings with limited resources. It is a valuable tool in clinical practice but it does have certain disadvantages as well. The grading of strength might be at risk of subjectivity as it is highly dependent on the examiner's experience and skill. Different examiners may produce varying results due to differences in technique, force application, and interpretation. MMT provides a qualitative assessment rather than a precise quantitative measurement. It categorizes muscle strength into broad grades, which may not accurately reflect the strength level and it is less e cient in identifying slight variations in strength levels during retesting. Also, the force applied by the examiner can vary between tests, leading to inconsistency in results. Factors such as fatigue, time of day, and the examiner's physical condition can also impact the consistency of the testing. Along with that, MMT requires active participation and cooperation from the patient. Patients who are uncooperative, in pain, or have cognitive impairments may not provide reliable results. Hence the factors like patient's pain level, fatigue, motivation, and psychological state can influence the results of MMT. All these factors make MMT a less sensitive tool for strength testing. Compared to traditional MMT, Handheld Dynamometers (HHD) generate precise and objective data; but these devices also come with certain limitations. Most dynamometers measure grip strength, which primarily involves the muscles of the hand and forearm. They may not provide a comprehensive assessment of overall muscle strength. The hydraulic gauge dynamometers require regular calibration to ensure accurate measurements. Over time, the device may lose its accuracy if not properly maintained. Also, these devices can be relatively expensive, which might limit their accessibility for smaller clinics or individual practitioners along with other limitations of the device like inability to provide measurements in decimals, mechanical faults and no option for data saving in the instrument.
Use of a digital instrument can solve the problem of subjectivity, consistency of results, grading of strength and other limitations like; single joint focus, maintenance, regular calibrations and other factors impacting the result quality of muscle strength grading.

Value Proposition
GuruTva digital dynamometer is a Indian made device designed specially by Physiotherapists and Electronic Engineer together to solve the problems faced by physical therapists while assessing the muscle strength. This portable, battery-operated device offers easy recharging, making it highly convenient for physical therapists to transport to various locations and use for extended periods. The device has the capacity to store up to 10 recordings simultaneously. It

features Wi-Fi connectivity, allowing access to stored patient records when connected to a device. The record includes demographic details of the patient, such as age, weight, and height. It provides a graphical representation of the force exerted by the patient during testing, along with the average and peak force measurements. By using this digital device, the time required for data entry is significantly reduced as all data is processed instantly on a laptop or mobile. This sturdy device works on pressure sensitivity which on application of force records the isometric strength of the particular muscle or muscle group.

GuruTva digital dynamometer provides precise muscle strength when compared with traditional methods of muscle strength testing. Traditional MMT technique the examiner must exert physical effort to apply resistance during the test, which can be demanding, especially when assessing multiple muscles or patients with higher strength levels. This device does not require examiner to apply the external resistance eliminating the chances of subjectivity of the result. As this is a software operated device factors such as fatigue, time of day, and the examiner's physical condition, differences in technique, force application, and interpretation will not affect the quality of the result. Performing a comprehensive MMT requires time and can be cumbersome, especially in clinical settings with a high patient volume whereas; this device provides accurate measurements in very less amount of time making it a more sensitive and helpful tool for muscle strength testing.

The device can be used to record strength of various muscle groups whereas; most of the handheld dynamometer are single joint focused mostly measuring the grip strength which primarily involves the muscles of the hand and forearm; making it a more versatile device. The GuruTva device eliminates the need for frequent calibrations required by hydraulic gauge dynamometers. Additionally, environmental factors such as temperature and humidity do not impact its performance and accuracy, thereby ensuring consistent and precise measurements.

Key Words
Manual muscle testing (MMT), Digital dynamometer, Hydraulic gauge dynamometer.

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Title: Spring Assisted Knee Foot Orthosis for Enhanced Mobility and Stability in Transitions.

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Abstract:
Background and purpose
This invention describes a Spring Assisted Knee Foot Orthosis (SAKFO) designed to assist individuals with mobility impairments in transitioning between sitting and standing. An integrated anti- slip feature in the ankle region enhances stability across various surfaces and with different footwear types.High-grade aluminium hinges provide smooth and controlled knee bending without locking, while a custom-moulded fibreglass brace ensures rigidity, comfort with easy donning and do ng.

Impact of the problem
Worldwide disabled people face challenges transitioning between sitting and standing due to conditions like muscular dystrophy, spinal cord injuries. This movement requires coordinated muscle activity, joint stability which can be compromised in individuals with mobility impairments. Though effective, traditional knee braces offer limited support, while powered exoskeletons and robotic devices are often complex, bulky, and too expensive for widespread use. There is a crucial need for a cost effective, simple, and reliable solution that assists with these transitions.

Value proposition
The orthosis features a spring-assisted mechanism that stores and releases energy, reducing the physical effort required for movement. By facilitating natural movement and reducing the risk of falls, this orthosis significantly improves user safety, independence, and quality of life. The Device's simplicity, durability, and affordability make it an ideal choice for those needing reliable support for daily mobility.

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