



**Bharati Vidyapeeth**  
(Deemed to be University)



MUKTAK MARKETING LLP.



**SCHOOL OF PHYSIOTHERAPY &  
OFFICE OF INTERNATIONAL AFFAIRS**

# **INTERNATIONAL SPORTSUNITE**

## **A MULTIDISCIPLINARY CONFERENCE**

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# **BOOK OF ABSTRACTS**

## **3rd and 4th February 2024**

MEDICAL COLLEGE AUDITORIUM, BHARATI VIDYAPEETH MEDICAL COLLEGE, DHANKAVADI CAMPUS, PUNE

## About Bharati Vidyapeeth (Deemed to be University) Pune

Bharati Vidyapeeth, the parent body of Bharati Vidyapeeth (Deemed to be University), was established in 1964 by the educationist and visionary Hon. Dr. Patangrao Kadam. Bharati Vidyapeeth is known for premium quality education, imparted to the students through the institutions of Bharati Vidyapeeth. The Institutions emphasizes that students of Bharati Vidyapeeth should receive education in a very hospitable and conducive atmosphere. Since its inception, Bharati Vidyapeeth has been at the forefront of creating educational opportunities for millions of students including those from the rural and tribal regions as well as from the disadvantaged groups.



**Hon'ble Dr. Patangrao Kadam Saheb**  
**Founder Chancellor**  
**Bharati Vidyapeeth (Deemed to be University)**

The spectrum of Bharati Vidyapeeth's institutions of higher education spans all professional disciplines including Medicine, Dentistry, Ayurveda, Homeopathy, Nursing, Pharmacy, Law, Biotechnology, Engineering, Management, Hotel Management & Catering Technology, Environment Science, Agriculture, Physical Education, and more.

Bharati Vidyapeeth (Deemed to be University) School of Physiotherapy, Pune is established in 2021.

Bharati Vidyapeeth is well-known university for its academic excellence and infrastructural facilities. It is situated on main Pune-Satara Road in the southern part of Pune city in Bharati Vidyapeeth Dhanakwadi Campus. The School of Physiotherapy is attached with Bharati Medical College and Bharati Hospital and Research Centre. Bharati Hospital and Research Centre, Pune is 1059 bedded Multispecialty with Super specialty services. It is a truly multispecialty hospital, providing super-specialty care and comprehensive rehabilitation centre.

Bharati Vidyapeeth (Deemed to be University) School of Physiotherapy, believes in Providing quality Medical Education and Professional Skills in the field of physiotherapy by creating and enriching environment for learning and research, and nurturing excellence through dynamic social transformation.



## PATRON

**Hon. Prof. Dr Shivajirao Kadam**  
Chancellor  
Bharati Vidyapeeth University  
(Deemed to be University)  
Pune

**Hon. Prof. Dr. Vivek Saoji**  
Vice Chancellor  
Bharati Vidyapeeth University  
(Deemed to be University)  
Pune

**Hon. Shri. G Jaykumar**  
Registrar  
Bharati Vidyapeeth University  
(Deemed to be University)  
Pune

**Hon. Dr Vishwajit Kadam**  
Secretary Bharati Vidyapeeth  
Pro Vice Chancellor, Bharati Vidyapeeth (DU)  
& Member of AICTE

**Hon. Dr Asmita Jagtap**  
Executive Director  
Health Sciences Bharati Vidyapeeth (DU)

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BVDU, Pune

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**Dr. Janhavi Atre**

**Dr Sachin Shetti**  
**Dr. Nilesh Andhare**  
**Dr. Rutuja Phadke**  
**Dr. Vishagh Nair**

## Forward

**\*\*To Our Esteemed Contributors and Readers,\*\***

It is with great pleasure and enthusiasm that I present to you the abstract book for the 2024 International SportsUnite, A Multidisciplinary Conference 3<sup>rd</sup> and 4<sup>th</sup> Feb. This compilation represents the collective intellect, passion, and dedication of individuals who have propelled our conference to new heights.

In the pages that follow, you will find a diverse array of abstracts that encapsulate the cutting-edge research, innovative ideas, and thought-provoking insights that will be shared during our conference. "Harmony in Motion" serves as a testament to the fluidity and synchronization inherent in the world of sports, where various disciplines converge to create a harmonious tapestry.

Each abstract is a glimpse into the minds of scholars, researchers, and practitioners who are pushing the boundaries of sports knowledge. From advancements in sports science to explorations of the social impact of athletics, this book is a reservoir of wisdom that reflects the interdisciplinary nature of our shared passion.

As the Organizing Chairperson, I extend my heartfelt gratitude to all the contributors who have enriched this abstract book with their expertise. Your commitment to advancing the discourse surrounding sports has not only elevated the content of this publication but has also contributed to the overarching goal of fostering a global community dedicated to the betterment of sports.

To our readers, I invite you to immerse yourselves in these abstracts, to absorb the wealth of knowledge they contain, and to engage in the conversations that will undoubtedly shape the landscape of sports in the years to come.

May this abstract book be a source of inspiration, sparking new ideas, forging collaborations, and igniting the passion that unites us all. I eagerly anticipate the vibrant discussions and intellectual exchanges that will unfold during the conference.

Thank you for being an integral part of this transformative journey.

Sincerely,

**Dr. Swati Bhise [PT]**

Organizing Chairperson  
International SportsUnite  
3<sup>rd</sup> and 4<sup>th</sup> Feb 2024



## **From the desk of Chancellor**

**Dear Delegates,**

It is with great pleasure that I extend my warmest greetings to all the esteemed participants, researchers and sports enthusiasts gathered for this remarkable sports conferences. As the Chancellor of Bharati Vidyapeeth (Deemed to be University), I am delighted



to witness the convergence of brilliant minds and passionate individuals in the field of sports.

Sports have a unique power to unite people, transcending boundaries and fostering a sense of camaraderie. This conference serves as a testament to our collective commitment to advancing knowledge in sports science, promoting healthy living and exploring innovative approaches to athletic performance.

The book of abstracts presented here is a treasure trove of insights, showcasing the cutting-edge research and thoughtful analyses contributed by experts and scholars from around the world. Each abstract represents a significant step towards unravelling the mysteries of sports. Pushing the boundaries of human potential and contributing to the ever-evolving landscape of sports science.

I commend the dedication and hard work of the organizing committee, researchers and contributors who have made this conference a reality. Your passion for sports and commitment to academic excellence are truly inspiring. May the exchange of ideas and the collaborations forged during this conference pave the way for new breakthroughs, shaping the future of sports and athletic performance.

I encourage all participants to immerse themselves in the rich content of this book of abstracts, embracing the wealth of knowledge it offers. As we celebrate the achievements of the past and explore the possibilities of the future, let us collectively strive to make lasting contributions to the World of sports.

Wishing you a rewarding and enlightening conference experience.

**Prof. Dr. Shivajirao Kadam**

Chancellor

Bharati Vidyapeeth

(Deemed to be University)

### **From the desk of Vice Chancellor**

I am happy to note that our School of Physiotherapy, Pune along with other units is organizing a unique, first of its kind International Sports Unite: A Multidisciplinary Conference. Firstly, I congratulate the faculty and staff of the School of Physiotherapy along with other faculty members for organizing this mega event, and welcome all the delegates, resource faculty and the participants for this



conference. Bharati Vidyapeeth (Deemed to be University), Pune is always at the forefront of organizing various knowledge events and I firmly believe that these not only provide opportunities for updating our knowledge from the experts in the field but also provides a chance for networking and fostering collaborations.

The field of sports rehabilitation has progressed tremendously in the past few years; hence it has become a potential platform for invention, collaboration, and scholarly endeavour. This conference, with its varied selection of abstracts, captures the spirit of discovery and the pursuit of knowledge that distinguishes the field of sports science.

The book of abstracts you hold in your hands is a testament to the collective efforts of researchers and scholars who have dedicated themselves to advancing our understanding of sports and its multifaceted impact on individuals and communities. Each abstract is a beacon of insight, contributing to the mosaic of wisdom that propels our shared journey forward.

As you peruse the pages of this book, I encourage you to embrace the spirit of collaboration and intellectual exchange that defines this conference. May the connections forged and ideas shared here serve as catalysts for revolutionary advancements in sports research and practice.

I extend my best wishes for a stimulating and productive conference experience. May the discussions enrich the participants and have a lasting impact on the participants to bring in effective change.

My sincere best wishes

**Dr. Vivek Saoji**  
**Vice Chancellor**

## **From the desk of Pro Vice Chancellor**

**Dear Delegates,**

Warm greeting from Bharati Vidyapeeth & Bharati Vidyapeeth (Deemed to be University), Pune!

I am delighted to extend my warmest greetings to each one of you as we come together for the International SportsUnite: A Multidisciplinary Conference, a cornerstone event that epitomizes the spirit of research and innovation in sports education.

The Book of Abstracts that you hold in your hands is a testament to the collective brilliance and scholarly dedication that defines our academic community. It serves as a compass, guiding us through the diverse and ground-breaking research that will be presented at this conference, offering a glimpse into the cutting-edge developments in the field of sports.

As Pro Vice Chancellor of Bharati Vidyapeeth (Deemed to be University), I am immensely proud to witness the intellectual wealth contained within these pages. The abstracts represent not only the depth of your research but also your commitment to advancing our understanding of sports and their multifaceted impact on society.

This compilation is a mosaic of ideas, methodologies, and findings that will undoubtedly contribute to the broader dialogue on sports education and research in India. It is my hope that the abstracts presented here will not only spark engaging discussions during the conference but also serve as a source of inspiration for future research endeavours.

I extend my heartfelt gratitude to each author and contributor for their tireless efforts in preparing and submitting their abstracts. Your dedication is pivotal in shaping the trajectory of sports research in the academic community.

To the organizing committee and editorial team, your meticulous work in curating and presenting this Book of Abstracts is commendable. Your commitment to excellence ensures that our conference maintains its reputation as a premier platform for the exchange of knowledge and ideas in the realm of sports.

May the International SportsUnite 2024 be a space where these abstracts come to life through engaging discussions, collaborations, and the forging of new academic partnerships. I look forward to the intellectual vibrancy and scholarly exchange that will characterize our time together.

**Dr Vishwajit Kadam**

Secretary, Bharati Vidyapeeth

Pro Vice Chancellor,

Bharati Vidyapeeth (Deemed to be University), Pune



## **From the desk of Executive Director**

Dear Delegates,

As the Executive Director of Health Sciences, it is both an honour and a privilege to welcome you to the SportsUnite Conference- a gathering that celebrates the intersection of health sciences and sports, two realms deeply interconnected in the pursuit of human well-being.



In this exceptional Book of Abstracts, we embark on a journey through the latest research and discoveries that bridge the realms of health and sports. Our collective dedication to advancing knowledge in these domains is reflected in the diverse and innovative abstracts compiled within these pages.

The fusion of health sciences and sports not only enhances athletic performance but also promotes overall well-being. It is truly inspiring to witness the collaborative efforts of researchers, practitioners, and experts who are driving the evolution of these fields.

This Book of Abstracts stands as a testament to our commitment to excellence in both health sciences and sports. The insightful contributions showcased here serve as a foundation for further exploration, fostering an environment where ideas flourish and breakthroughs emerge. I extend my deepest gratitude to every researcher, speaker, and participant who has contributed to the success of the SportsUnite Conference. Your dedication and passion are instrumental in shaping the future of health, wellness, and sports.

May the knowledge shared in these abstracts ignite new avenues of research, spark collaborations, and inspire us all to reach greater heights in our respective fields. As we immerse ourselves in the wealth of information presented here, let us celebrate the unity of health sciences and sports and the boundless possibilities it holds.

Wishing you an enlightening and enriching experience as you explore the insights within the SportsUnite Conference Book of Abstracts.

Warm Regards,

**Dr Asmita Jagtap**

Executive Director

Health Sciences

Bharati Vidyapeeth (Deemed to be University)



## **From the desk of Registrar**

**Dear Delegates,**

It brings me great joy to extend a warm welcome to all participants and scholars gathering for the International Sports Unite 2024. Universities play a vital role in organizing Sports Conferences as they provide a platform for academic and practical discussions on various sports-related topics.



The desired outcome of sports conferences is the dissemination of cutting-edge research, fostering collaboration among professionals and generating innovative ideas to enhance the understanding and practice of sports-related fields. Additionally, these conferences should contribute to the overall improvement and advancement of the sports industry by promoting knowledge transfer and networking opportunities.

Each abstract in this compilation acts as a light of insight, adding to the weave of information that accelerates our collective path towards a better understanding of sports worldwide effect. The variety of viewpoints given here represents the breath of our collaborative effort to unify via a shared passion of sports.

I extend my sincere appreciation to the Organizing Committee for orchestrating this remarkable International Conference. Their dedication to fostering cross-cultural dialogue and knowledge exchange is truly commendable to the contributors. Your research not only elevates the academic discourse but also strengthens the bonds that connect us through the world of sports.

These conferences facilitate knowledge exchange, research presentation and networking among professionals, researchers and students in the sports industry. Ultimately, universities contribute to the advancement and development of sports through these collaborative events.

Wishing you an enlightening and enriching conference experience.

Warm regards,

**G. Jayakumar**

**Registrar**

## **From the desk of Advisor**

### **Dear Participants and Esteemed Guests,**

As the Project Leader, it brings me immense joy to present this conference's souvenir—a testament to the collaborative spirit, shared knowledge, and commitment to fostering inclusive education through sport. This conference, a pivotal moment in our journey, encapsulates the dedication and collaborative spirit that defines our project's ethos. May it serve as a lasting reminder of the positive impact we can achieve when we unite for a common cause.



As we delve into the discussions, presentations, and shared insights, I am reminded of the collective efforts that have gone into making SPIRIT a success. The diverse expertise and unwavering support from our esteemed partners and participants have fueled the impactful activities and milestones we've achieved together.

May this souvenir serve as a token of appreciation for each contributor's invaluable role in fostering positive change through sport and education. I express my deepest gratitude to everyone involved and look forward to the continued success and impact of the SPIRIT Project.  
*Thank you for being part of the SPIRIT Project journey!*

Warm regards,

**Prof. Dr Kirti Mahajan**  
**Director, International Affairs and Project Leader,**  
**SPIRIT Project**

## **Editorial Board**



**Dear Distinguished Colleagues,**

It is with immense pleasure that we present

to you this collection of abstracts, a testament to the diverse and groundbreaking research shared within our academic community. Each abstract encapsulates the passion, dedication, and innovation that define our collective pursuit of knowledge.

As the Board of Editors, we extend our deepest appreciation to the researchers whose work enriches these pages. Your commitment to advancing scholarship is the driving force behind this compendium.

In this book of abstracts, we celebrate not only the breadth of topics covered but also the intellectual vigor each researcher has brought to their respective fields. As editors, we commend your tireless efforts in pushing the boundaries of knowledge and providing fresh perspectives.

May these abstracts serve as a source of inspiration, fostering dialogue and collaboration among our esteemed colleagues.

Thank you for entrusting us with your valuable contributions.

**With Gratitude,**

**Dr. Anushree Narekuli**

**Dr. Ruchita Killedar**

**Dr. Gauri Wakde**



# BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY)

SCHOOL OF PHYSIOTHERAPY & OFFICE OF INTERNATIONAL AFFAIRS

## INTERNATIONAL SPORTSUNITE

A MULTIDISCIPLINARY CONFERENCE

*Scientific Program*

3rd Feb 2024		
Time	Speakers	Topic
8 am - 8:30 am	Registration	
8:30 am - 9:10 am	Mr. Heath Mathews	Human Movement Pyramid
9:10 am - 9:40 am	Breakfast	
9:40am -10:20 am	Dr. Sneha Divekar	Sports Dentistry: the missing link in athlete Healthcare
10:20 am - 11:00 am	Ms. Sayali Naik	Role of Nutrition in Injury Prevention and Management In Athletes
11:00 am - 12:30 pm	Inauguration + Panel Discussion	
12:30 pm - 1:10 pm	Dr. Vaibhav Daga (PT)	ACL- Injury return to sports
1:15 pm - 1:55 pm	Dr. Yogi Gandhi	Importance of 3D printing Technology for HealthCare Industries
2:00 pm - 3:00 pm	Lunch	
3:00 pm-5:00 pm	Paper Presentations	
5:00 pm-5:30 pm	Hi Tea	
7:00 pm- 10:00 pm	Gala Dinner	
4th Feb 2024		
8:30 am-9:00 am	Breakfast	
9:00 am- 9:40 am	Dr. Aalap Jawadekar (PT)	Training - specific - working with parasports in India
9:45 am- 10:25 am	Dr. Yuvraj Singh (PT)	Nurturing Future Champions: Our Journey in Exploring Athletic Development
10:30 am-11:10 am	Ms. Damini Sapre (PT)	Role of Psychology in Sports performance and Injury recovery
11:15 am - 11:55 am	Dr. Roshan Adkitte (PT)	Isokinetic evaluation and rehabilitation
12:00 pm- 12:40 pm	Dr. Dina Keumala Sari	Sport Nutrition based on Local Wisdom
12:45 pm-1:30 pm	Dr. M.Vijayakumar	Imbalance in reciprocal Firing of Muscles - a Potential Cause of Injury in Sports
1:30 pm-2:30 pm	Lunch	
2:30 pm- 3:00 pm	Mr. Arun Samuel	Relative energy deficiency in sport (REDs) in an endurance athlete
3:00 pm-3:40 pm	Dr. Sheetal Mahendher	Strength and Conditioning
3:40 pm -4:15 pm	Dr. Christoforos Giannaki	Sleep and Exercise Performance
4:15 pm -5:00 pm	Valedictory	
5:00 pm	High Tea	

## Meet our Speakers

### **Dr Heath Mathews (PT)**

BSc Honors in Physiotherapy (South Africa)  
Sports Physiotherapist, Founder Halofit  
Elite and Developmental Sports Specialist



### **Dr Vaibhav Daga (PT)**

D.P.T, B.P.Th, PG Cert (Sports Physiotherapy, UK), MPT (Sports)  
Head, Sports Science & Rehabilitation; Consultant, Sports  
Medicine,  
Kokilaben Dhirubhai Ambani Hospital, Mumbai



### **Dr. Roshan Adkitte (PT) (MSPT)**

Chief of Army Staff (COAS) Commendation Awardee  
Sports Physical Therapist  
Mission Olympic Wing  
Army Sports Institute (ASI), Pune (Maharashtra)



### **Dr Yuvraj Singh (PT)**

BPTh, MPTh, PGDHM, PGDCR  
Certified CrossFit Level 1 trainer  
Head Positive Physiotherapy Clinic, Mumbai  
Associated with Indian Boxing Team, Tokyo 2020 Olympics.



### **Arun Samuel Jaykumar**

MCSP, MBPFS (British Patellofemoral Society), Diploma in Joint & Soft tissue Injections,

BSc Physiotherapy, HCPC, MIAP

Medway Community Healthcare, Kent, UK

Founder and Tutor of 'Treating a Runner' & "Shift through the Gears"



### **Dr Aalaap Jawadekar (PT)**

BPTh, MPTh (Australia)

Sports Physiotherapist

Sports Science Team Leader, Para Sports at Olympic Gold Ovest

Associated with Indian Weightlifting Team, Tokyo 2020 Olympics.

Working with Para sports



### **Ms. Damini Sapre**

B.A , M.A (Psy), B.Ed

Sr. Sport Psychologist at Samiksha Sports.

Gold medallist, M.A Counselling Psychology, Savitribai Phule Pune University

Former Sr. Women's Footballer



### **Yogi Gandhi, Ph.D.**

CEO, US Institute of 3D Technology (USI3DT),

Orinda, California, United States



**Prof. Dr. Dina Keumala Sari,**

M.Gizi., Sp.GK(K)

Department of Nutritional Sciences and Doctoral Study Program

Faculty of Medicine, University of North Sumatra

Indonesia.



**Dr Sneha Divekar**

Cosmetic Dentist- Sports Dentist & Nutritionist

At Dental Fitness & Polyclinic, Pune

Faculty-‘Sports Dentistry’ at Institute of Sports Science and Technology (ISST), Pune



**Dr. M.Vijayakumar (PT)**

BPT, MSPT, FDSR, PGDOSIM, PGDFWM, CYT, C.Bioethics, (Ph.D)

Professor, Dr D Y Patil College of Physiotherapy, Pimpri, Pune.



**Dr Sheetal Mahendher**

Professor and Head, Dept of Analytics

ISBR Business School, Bengluru



**Christoforos D. Giannaki,**

Associate Professor, Sports Science Program  
Coordinator- PhD in Exercise Science and Physical Education  
Director of the Research Centre for Exercise and Nutrition (RECEN)  
Department of Life Sciences, School of Life and Health Sciences  
University of Nicosia, Cyprus



**Ms Sayali Naik**

Sports Nutritionist  
Founder- Bullseye Sports & clinical nutrition consultancy  
Team Sports Nutritionist- Delhi Capitals- IPL







## Abstract Presentations Unveiled: A Glimpse into Delegate Insights

Ladies and Gentlemen,

Welcome to the heart of the conference—where ideas converge and innovation takes center stage. As we turn our attention to the abstract presentations, a tapestry of diverse insights and cutting-edge concepts awaits your exploration.

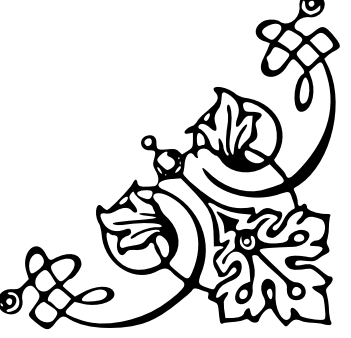
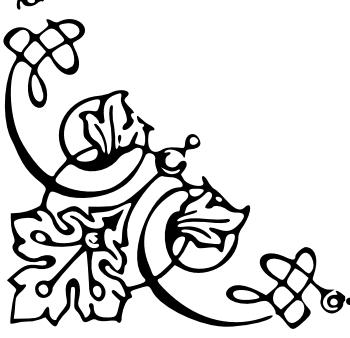
In the following pages, you will embark on a journey through the minds of our esteemed delegates. These abstracts encapsulate the essence of their research, expertise, and passion. Each presentation is a unique contribution to the broader conversation on SportsUnite, promising to enrich your understanding and spark engaging discussions.

Dive into the abstracts with an open mind, ready to absorb the wealth of knowledge that our delegates bring to this forum. From groundbreaking research findings to innovative approaches, these abstracts represent the collective intelligence and commitment to excellence within our conference community.

May this section inspire curiosity, foster collaboration, and serve as a catalyst for new ideas. The abstract presentations are more than a collection of words; they are a gateway to the transformative power of shared knowledge.

Enjoy the intellectual journey that lies ahead, and let the abstracts pave the way for meaningful conversations and insights that will shape the discourse of this conference.

The stage is set—let the exploration begin!



# **A Pilot Randomized controlled trial on Effectiveness of Structured exercise program along with Mindfulness meditation on psychological flexibility, cardiovascular endurance and quality of life among undergraduate university students**

**Author:** Dr Madhur Kulkarni. Dr Saumi Sinha:

**Current Institute and Address:** Dr APJ Abdul Kalam College of Physiotherapy, PIMS DU, Loni, Ahmednagar Maharashtra.

**Introduction:** Increase in prevalence of mental health issues among college going students is observed since past few years in India. Psychological flexibility is one of the key ingredients to psychological health which plays a major role in daily well-being and overall health. We have designed a study to explore a Structured exercise programs (SEP) designed specifically for undergraduate university students for assessing its effect on psychological flexibility, endurance and quality of life. It was necessary to determine the feasibility and adherence of such an exercise program before undertaking such a study. Thus, primary aim of this pilot study was to determine the feasibility of a future full-scale RCT.

**Methods/Procedure:** After receiving ethical approval, 21 out of 55 screened individuals from a university were randomly assigned SEP along with Mindfulness meditation (MM) (n=7), SEP alone (n=7) and a waitlist control group (n=7). Inclusion Criteria: Undergraduate university students, both male and female, Age group 17 - 24 years of age, fit to participate in exercise program based on PAR-Q AND YOU, Sedentary individuals (Low to moderate level-based activity on IPAQ), Individuals who are willing to participate, Individuals having smart phones. Exclusion Criteria: Individuals with- recent injuries or persistent pain, cognitive impairments, hearing impairments, neurological disorders, amputation and having prosthetic limb and those already involved in any regular exercise program. Outcome Measures: Psychological flexibility, Cardiovascular Endurance, Quality of life and Perception of Students towards the protocol. Protocol was given for 8 weeks (5days/week).

**Results:** recruitment rate was 38.18 %, retention rate was more than 85% for the interventions.

**Conclusion:** SEP along with MM and SEP alone were feasible for undergraduate university students and supported a full scale Randomized controlled trial

**Keywords:** Pilot Feasibility trial, Undergraduate university Students, Psychological flexibility, Physical activity.

# **Effect of Self Structured Rehabilitation Protocol on Quality of Life among Patients with Modified Radicular Mastectomy Patients: A quasi-experimental study**

**Authors:** Dr. Pradnya Dumore, Dr. Shyam Ganvir

**Current Institute:** Dr. Vithalrao Vikhe Patil Foundation College of Physiotherapy, Ahmednagar

**Introduction:** Modified Radicular Mastectomy is commonly performed in India for patients with breast cancer. Its survivors commonly experience decline in physical function and quality of life post-mastectomy, due to their upper limb morbidity. With that in mind, we developed self-structured rehabilitation protocol for patients with modified radicular mastectomy. Breast Cancer is the commonest malignancy in female patients. For this study, designed the rehabilitation protocol to, improve range of motion, improve quality of life and helps patients to get back to their normal life.

**Methods:** 50 Patients with purposive sampling was selected. Ethical approval was obtained from the institutional ethical committee. Post-operative patients those who are willing to participate were included. Patients with Wound infection or bleeding were excluded. Self-structured rehabilitation protocol was given after 2-3 days of surgery for 2 weeks. Range of motion were taken before and after the intervention. FACT -B Quality of life scale was administered before and after the intervention.

**Result:** Student t- test and ANOVA test were used for statistical analysis. FACT B Scale was used to assess quality of life which shows the qualitative data. Range of motion with goniometer was taken. Pre and post values was taken. Before the intervention score of FACT B scale was 60% and after intervention score reduces i. e. 40% among which was statistically significant ( $p$  value=0.05) and shows improve quality of life.

**Conclusion:** The present study concluded that the after the two-week intervention of self-structured rehabilitation protocol on postoperative mastectomy patients improved mobility of patients and quality of life.

**Keywords:** QoL, Modified Radicular Mastectomy, Self-structured rehabilitation protocol.

## **Physical Fitness in patients with Type 2 Diabetes Mellitus: A 1 year Longitudinal Study**

**Authors:** Dr. Prachi Bhagat, Dr. Sana Rai, Dr. Maheshwari Harishchandre, Dr. Suvarna S. Ganvir

**Current Institute:** DVVPFs College of Physiotherapy, Ahmednagar<sup>1</sup>

**Introduction:** Diabetes Mellitus (DM) is a chronic disorder that requires constant management. Individuals diagnosed with Diabetes experience changes in their daily activities. These changes then includes physical changes, lifestyle and psychological conditions. So, the objective of the study was to investigate the physical fitness in patients with Type 2 DM over an extensive period of time.

**Methods:** A 1 year longitudinal study was carried out in tertiary care hospital where in 50 patients diagnosed with type 2 DM between age group (40-60 yrs) were recruited. These patients were assessed with Screening tests including 6 min walk test, flexibility testing (Sit to reach test), endurance testing (5 times sit to stand test), Figure of 8 test, Single leg balance test, Rombergs and Sharpened Romberg test and outcome measures like Michigan Neuropathy Screening instrument and Ahmednagar Neuropathy Screening Instrument. After 3 months, same patients were followed up and accordingly 40 patients were reassessed out of 50.

**Results:** In this cross-sectional longitudinal study there was significant improvement in patients with DM and there was change in parameters over a period of time assessed during screening. However, there was also significant change in anthropometric measurement (weight) inspite of the fact which was not considered for screening in patients with type 2 DM.

**Conclusion :** Patients with type 2 DM had an greater impact on physical fitness and it changes over a period of time with regular physical activity and also reduce further risk of short term and long term complications.

**Keywords:** Diabetes mellitus, Physical fitness, screening

**Declaration:** I agree that

- (i) My research is original
- (ii) My research project is approved by the Institutional Ethics Committee
- (iii) There is no conflicting interest of the research with any other Research Institute or person.
- (iv) I confirm that this paper has not won prize in any conference.

## **Level of Community Integration & Activity Limitation – Participation restriction among Community Dwelling Patients with Stroke.**

**Authors:** Dr. Ankita Mane, Dr. Suvarna Ganvir

**Current Institute:** Dr. Ulhas Patil College of Physiotherapy, Jalgaon.

**Introduction:** Stroke is a rapidly developing loss of brain function due to disturbance in blood supply to the brain. Community integration refers to assimilating – and welcoming – people with disabilities into the larger community. The community integration questionnaire was designed to assess home integration, social integration & productive activity in acquired brain injury. Stroke causes impairment – related functional limitations that may result in difficulties participating in Activities of daily living. IMPACT (ICF Measure of Participation & Activities) was designed to describe functioning & disability independent of health condition.

**Methods/ Procedure:** Population based observational cross-sectional study performed among 50 community dwelling male & female aged 18 years & above diagnosed with stroke derived by purposive sampling. Patients with Diabetes mellitus, associated fractures, severe cognitive impairment, Aphasia, Significant psychiatric illness, & any other significant neurological or orthopaedic disorders were excluded.

Written consent & Demographic data was obtained. Community integration questionnaire was administered along with Marathi version of IMPACT – S questionnaire to measure activities & participation. In which only 4, 5 & 9 domains that is mobility, self-care, & community, social & civil life items were taken.

**Results:** In this study, 68% participants had maximum affection on integration into productive activities, 20% participants on social integration sub-scale while only 12% on home integration scale, respectively. In activity limitation & participation restriction, following parameters had significant p values like; walking = 0.0132, ADLs = 0.0422, social activities = 0.0003, recreational activity = 0.0042, spiritual activity = 0.0014, role of citizen = 0.0001, respectively which indicates activity limitation & participation restriction on these items.

**Conclusion:** Community integration was most affected by restricted participation into travelling, employment, education & volunteering activities. Also, ADLs, walking & outdoor activities are significantly limited among Community Dwelling patients with stroke

**Keywords:** Stroke, Community Integration, Activities of Daily Living, Participation restriction.

## **Decoding Spasticity: Effects of percutaneous electrical nerve stimulation (PENS) in stroke Recovery**

**Authors:** Kamble S., Baxi G., Palekar T.

**Institute:** Dr. D. Y Patil college of Physiotherapy, Dr. D. Y Patil Vidyapeeth, Pune. India, Physiotherapy, Pune, India

**Aims and Objectives:** To find out effectiveness of Percutaneous Electrical Nerve Stimulation (PENS) in reducing wrist flexor spasticity and upper-limb motor function among stroke survivors.

**Method:** 30 stroke individuals were randomly allocated into (A) the Experimental Group VR and (B) the Control Group by the coin toss method. On the affected side, needles were inserted into the flexor carpi, radialis, and ulnaris muscles. A total of 3 treatment sessions of 15 minutes each with a 48-hour gap were given to the patients using PENS plus conventional treatment. In Group B, only conventional treatment was given. A pre-, post-, and follow-up measure of the Modified Modified Ashworth Scale (MMAS), H reflex (amplitude), Modified Tardieu Scale (MTS), and Wolf Motor Functional Test (WMTS) were taken.

**Results:** showed that, within group analysis, group B had statistical significance for H reflex 1, 2, and 3 ( $<0.0001$ ) and for MTS pre and post ( $p = 0.001$ ). There was no difference between a post and a follow-up. WMFT and MMAS pre and post ( $p = 0.0001$ ) also had statistical significance, but there was no difference between post and follow-up.

**Conclusion:** This study suggests that PENS reduces wrist flexor spasticity and improves motor function in stroke survivors.

## **Short-term effects of sports taping on navicular height and peak plantar pressure in healthy elite runners**

**Author:** Dr. Juhi Bharnuke (PT)

**Institute:** D Y Patil deemed to be University, Navi Mumbai

**Introduction:** One of the most common type of exercise-induced leg pain is Medial tibial stress syndrome (MTSS). The navicular drop (ND) is a known risk factor for MTSS. Present study aimed to evaluate the short-term effects of sports taping applied to the supporting lower leg during sitting, standing, walking, and running to limit the ND in healthy elite runners.

**Methods:** Twenty-four healthy elite runners without a history of exercise-induced pain or injuries in the lower limbs participated (median age: 23.0 years). The 3 taping conditions used were; rigid taping (RT), kinesiology taping (KT) and placebo taping (PT). The order of taping techniques was randomly assigned. Navicular height was measured using navicular drop test and peak plantar pressure were compared in 3 taping conditions during sitting, standing, walking, and running.

**Results:** During sitting, the normalized NH of RT was higher than that of KT, and PT ( $p=.001$ ), while during running, the normalized NH of RT was higher than that of NT and PT ( $p=.014$ ). The normalized peak PP of NT was higher than that of PT ( $p=.031$ ) in the lateral midfoot region.

**Conclusion:** This study demonstrated that the RT technique maintained NH during sitting and running, and the RT technique could be an effective preventive and treatment strategy for MTSS.

**Abbreviations:** KT = kinesiology taping, MTSS = medial tibial stress syndrome, ND = navicular drop, NH = navicular height, NT = non-taping, PP = plantar pressure, PT = placebo taping, RT = rigid taping.

**Keywords:** medial tibial stress syndrome, navicular drop, navicular height, peak plantar pressure, sports taping

## **The new multidirectional “Quadrant Hop Test” detects greater Limb Asymmetries than other Horizontal Hop Tests in Return to sports Index After Anterior Cruciate Ligament Reconstruction.**

**Author:** Prof. M.Vijayakumar.

**Current Institute:** Dr. D. Y. Patil College of Physiotherapy, Pimpri, Pune.

**Background:** Deficiencies in knee function could still exist even after ACL rehabilitation. The best test components for Return to Sport (RTS) testing batteries are up for debate, yet various Horizontal Hop tests guide RTS advancement by assessing recovery but limited to its unidirectional propulsion. The new “Quadrant Hop Test” (QHT) can offer a useful evaluation of knee function deficit after rehabilitation due to its multidirectional complexity. Need of the Study The need of this study was to compare the Limb Symmetry Index (LSI) of QHT to other horizontal hop testing in a cohort of individual after ACLR and rehabilitation of 24weeks. The hypothesis was QHT would elicit significantly lower LSI than other horizontal hop tests for distance. Study design Cross-Sectional Study.

**Methods:** 43 post-operative ACL injury participants (27 Men, 16 women, mean age 27.4 yrs), who completed 26 weeks of similar Rehabilitation Protocol, with LSI >80%, were included in this study. LSI was calculated for single hop for distance (SHD), triple hop for distance (THD), cross-over hop for distance (CHD) and Quadrant Hop Test (QHT) in all 4 directions for a composite score LSI. The best of 3 trials scores were analyzed. A repeated measures ANOVA was performed to identify differences in LSI for each test. Spearman’s Rho correlation coefficient was calculated to examine the relationship between LSIs for each test.

**Results:** The LSI for QHT ( $78.48\% \pm 12.41\%$ ) was significantly lower than LSI for SHD ( $94.238 \pm 9.12\%$ ,  $p = 0.003$ ), THD ( $93.34 \pm 7.76\%$ ,  $p = 0.002$ ) and CHD ( $91.23 \pm 9.14$ ,  $p = 0.007$ ). The correlation of LSI between QHT and the horizontal hop tests was weak and non-significant for SHD ( $r_s = 0.1.26$ ,  $p = 0.509$ ), CHD ( $r_s = 0.1.89$ ,  $p = 0.428$ ), and moderate and non-significant for THD ( $r_s = 0.392$ ,  $p = 0.089$ ).

**Conclusions:** People who underwent ACLR showed lower LSI on the QHT than on the other horizontal hop tests. The weak to moderate correlations suggest that the QHT can identify performance deficiencies better than that the horizontal hop tests thus can make the criteria for Return to sports index stronger.

**Keywords:** Hop test, return to sport, ACL reconstruction, Quadrant Hop test.



# **Training Effects of Jump Squat and Jump Forward Lunge on Sprint and Jump Performance in Athletes- A Randomized Clinical Trial**

**Authors:** Dr. Soniya Lohana

**Current Institute:** D.Y. Patil Education Society (Deemed to Be) University, Kolhapur

**Introduction:** Athletes demand enhanced physical performance which is a result of training of sport specific abilities. Jump Squat (JS) and Jump Forward Lunge (JFL) are two dynamic types of plyometric exercises. The purpose of this research was to study the training effects of Jump Squat and Jump Forward Lunge on sprint and jump performance in athletes.

**Methods:** Thirty-two athletes (mean age of  $19\pm 2$  years) were enrolled in the study based on inclusion and exclusion criteria. Athletes were randomly divided into two groups; Jump Squat (JS) (n=16) and Jump Forward Lunge (JFL) (n=16). Athletes were trained, three times a week for 4 weeks. 10m, 20m sprint, vertical jump height, standing broad jump, flexibility using sit and reach and plank hold were measured pretest and posttest.

**Results:** SPSS version 22 was used for the data analysis. Findings within the groups were analyzed by paired t test. Significance was set ( $p \leq 0.005$ ). Significant differences were seen between pretest and posttest results in both the groups for 10m, 20m sprint time, plank hold and sit and reach ( $p < 0.005$ ). For JS, there was no significant improvement in standing broad jump ( $p < 0.746$ ) and for JFL, there was no significant improvement seen in vertical jump height, statistically ( $p < 0.008$ ).

**Conclusions:** Both JS and JFL improve sprint performance in athletes. However, JS did not improve Broad Jump and JFL did not improve Vertical Jump Height significantly. Specific plyometrics should be included in the warm-up or training protocol to enhance the athlete's desired jump performance.

**Key-words:** Plyometrics, Jump Lunge, Athletic training, Broad Jump, Vertical Jump height, Performance

## **Effectiveness Of Proprioceptive Training On Balance, Agility and Lower Limb Explosive Strength in Amateur Badminton Players.**

**Author:** Dr.Shweta Pachpute

**Current Institute:** LSFPEF's College of Physiotherapy, Pune.

**Introduction:** Badminton has become one of the most widely played participant sports in the world. In badminton balance, agility and lower limb explosive strength plays an important role. In the absence of optimal balance, sport performance can be negatively influenced in repetitive jumping, sprint and in activities involving agility. The purpose of proprioceptive training is to advance the complex activity of the neuromuscular system. Effect of proprioceptive training on sports performance is minimally studied so it is importance to check where Proprioceptive exercise training can improve the balance, agility and lower limb explosive strength in amateur badminton players.

**Method:** 30 male amateur badminton players in age group of 18-25 years were included and divided into two groups. Players having lower limb injury, Musculoskeletal problems and any medical condition were excluded. Intervention group (Group A) followed Proprioceptive training programme for 5 weeks and control group (Group B) continued their sports protocol. Proprioceptive exercise training consists of five weeks. Pre & Post star excursion balance test, T- test of agility, vertical jump test was performed. Statistical analysis done by paired t -test and Unpaired t-test.

**Results:** Both groups improved significantly at the end of 5<sup>th</sup> week but intervention group showed highly significant difference for balance, agility and lower limb explosive strength as compared to Control group ( $p < 0.05$ ).

**Conclusion:** Proprioceptive exercise training is effective in improving dynamic balance, agility and lower limb explosive strength in amateur badminton players.

**Key Words:-** Balance, Agility, Lower limb explosive strength , Proprioception

## **Prevalence of Upper Body Musculoskeletal Pain in Amateur Guitar Players – An Observational Study**

**Authors:** Prajakta Deshpande

**Current Institute:** Pravara Institute of Medical sciences

**INTRODUCTION:** Musicians, like athletes, are vulnerable to musculoskeletal injuries. These injuries can affect one's career and earning process, but a successful return to musical activity can usually be attained by following appropriate treatment " The guitar is one of the most popular instruments played in the world. The objective of the study was to identify the musculoskeletal problems in amateur guitar players and to explore the prevalence of musculoskeletal pain while playing guitar.

**METHODS:** A study was conducted to determine the prevalence of musculoskeletal pain in amateur guitar players of age group 18 - 60 years in general population of Maharashtra. The sample size was 144. Participants who play guitar were included in the study. A questionnaire was prepared using Google form and distributed among the participants. The Questionnaire included questions on upper extremity function. The participants fulfilling the inclusion criteria were recruited through convenient sampling method and informed consent was taken.

**RESULT:** 200 google forms were emailed to the participants. 144 responses were obtained. Out of those, 56(38.9%) were females and 88(61.1%) were males. The highest prevalence of pain, numbness and tingling sensation over tips of fingers was reported in the age group of 21-40 years. Among the various types of guitars, highest prevalence of pain was reported in acoustic guitar players 45(50%). Pain, numbness and tingling sensation over tips of finger were more in the participants who played guitar for 15 to 30 minutes.

**CONCLUSION:** The result of the study concluded that the most participants have reported pain while playing guitar. The common site of pain was the interphalangeal joints.

**KEYWORDS:** Musculoskeletal injury, guitar players, upper extremity functional scale, Google forms.

## **Influence of uneven ground on prevalence of flatfoot in school going children**

**Authors:** Dr.Sofiya John Masoji

**Current Institute:** Krishna College of Physiotherapy

**Introduction-**The arches of foot contribute to the stability and dynamics of the foot by protecting the muscles, nerves, blood vessels of the plantar aspect of the foot under load. Playing on an uneven surface may increase the load on foot muscles, which may lead to a flat arches. The medial plantar arch is thought to develop most significantly between the age of six to twelve. After the age of six years, the rate nearly remains constant until the foot stops developing at the age of 12 to 13. Therefore, it appears that the preadolescent years are important for assessing foot structure. The study aimed to determine the influence of uneven terrain on the prevalence of flat feet in school-going children.

**Methods** -Using convenience sampling method 280 participants between 10-15 years of both genders were selected. The presence of flat foot was confirmed by Navicular drop test. All the participants who played on playground with uneven ground surface were included in the study. Participants within the normal ranges (2mm-9mm) were grouped under unaffected population. Those exceeding the normal ranges were included under reduced medial longitudinal arch (Flat-foot) that is affected population.

**Results-**Among the 280 participants 200 were the males & 80 were females. Out of 200 males, 32 were affected and out of 80 females 22 were affected.

**Conclusion-** Flatfoot prevalence was considered significant among the 10-15 age group of school going children playing daily on uneven ground surfaces (  $p < 0.05$ ).

**Keywords-** Flatfoot, Uneven ground, Medial Longitudinal Arch (MLA)

## **Effectiveness of Ring Pilates and Conventional Therapy in Primary Dysmenorrhea**

**Author:** Bhakti kardile<sup>1</sup> Dr. Deepali Hande<sup>2</sup> Dr. Nupoor Kulkarni<sup>3</sup> Dr. Aditi Khot<sup>4</sup> MPT

**Current Institute:** Dr. APJ Abdul Kalam College of Physiotherapy

**Abstract Background And Purpose:** Menstruation is a major physiological change that occurs during this stage and is a sign of puberty for adolescent females. Dysmenorrhea is the most common gynecological symptoms among adolescent female students that negativity affects their daily life activities, academic achievement and productivity. TENS is a relatively simple pain-relief modality which relieves primary dysmenorrhea through two possible mechanisms, the gate control theory and endorphin mediated pain relief. HF is used more often. Pilates increases pelvic stability and reduces menstrual pain by inducing abdominal muscle contraction. Ring Pilates exercises are exercises to relieve menstrual pain with several forms of activities such as walking, running, and sports.

**Method:** The Experimental study consists of 60 subjects between the age of 18 to 25 years randomly selected as per the inclusion and exclusion criteria. The participants were divided equally by alternate sampling method 30 subjects were in group A (Pilates group) and the other 30 in group B (conventional). Group A received Ring Pilates and Conventional treatment and group B received conventional physiotherapy treatment only i.e. TENS. Pre and post intervention scores were measured.

**Result:** Data analysis was done using InStat cal software. Parametric (paired T test) or non-parametric data (Wilcoxon test) was applied and the p value was obtained. For between the group analysis the independent T tests was applied to find the significance. Post intervention both groups had significant reduction in pain (Ring Pilates and conventional physiotherapeutic) measured with VAS Scale The VAS Scale also shows changes that signify that Ring Pilates is effective Primary Dysmenorrhea.

**Conclusion:** This study concluded that Ring Pilates is effective in reducing the pain in Primary Dysmenorrhea

**Keyword:** Pilates exercise, Primary dysmenorrhea, VAS scale, Conventional Physiotherapy Treatment.

# **Effectiveness of Pelvic Floor Muscle Training And Progressive Resisted Exercises**

Author: Dr. Sonali Shekhar Asolkar

Current Institute: Pravara Institute of Medical Sciences

**BACKGROUND AND PURPOSE** – Catherine DuBeau quoted that Urinary incontinence not only causes great unhappiness but can also increase disability, social isolation, and health care costs. Urinary Incontinence is unpleasant and common crisis for adult, mainly for majority of the woman in today's fast life stress incontinence is the most common problem.

UI causes embarrassment, loss of self-confidence which may lead to urinary tract infections, pressure ulcers and diseases of the perineal skin. Weak pelvic floor muscles are primarily responsible for urinary incontinence. Different forms of pelvic floor muscle exercises are used to lessen the severity of stress urinary incontinence by improving the strength of the pelvic floor muscles.

**Methodology**-The Experimental study consists of 60 subjects between the age of 35 to 60 years randomly selected as per the inclusion and exclusion criteria. The participants were divided equally by alternate sampling method. 30 subjects were in group A (Pelvic Floor Muscle training) and the other 30 in group B (pelvic floor muscle training along with progressive resisted exercises of hip muscles) Pre and Post intervention scores were measured.

**Result** – Data analysis was done using InStat software. Parametric (paired T tests) or non-Parametric data (Wilcoxon test) was applied and the p value was obtained. For between the group analysis the independent T tests was applied to find the significance. The KHQ questionnaire also shows changes that signify that pelvic floor muscle training along with progressive resisted exercises of hip muscles improves quality of life in women with SUI.

**Conclusion**- This study concludes that pelvic floor muscle training along with progressive resisted exercises of hip muscles can be effective treatment to improve the quality of life and increase the strength of pelvic floor muscle in women with SUI.

**KEYWORD**- Stress Urinary Incontinence, Kings Health Questionnaire, Progressive Resisted Exercises.

## **Knowledge and awareness of PCOS (Polycystic ovarian syndrome) in adolescent female students in Pune city at moderate to high risk of PCOS - a cross sectional study**

**Authors:** Dr. Mankar Kalyani Jayant (PT)

**Current Institute:** Nanded college of Physiotherapy

**Introduction:** PCOS is a lifestyle disorder with an overall prevalence (9.1%) and poor diagnosis. During the pandemic, with limited physical activity and stress among adolescents, the risk of developing PCOS has only increased, making it important to identify the ones at moderate to high risk for the condition and check their knowledge and awareness about PCOS to prevent its future repercussions.

**Method:** This cross-sectional study was conducted among female adolescents, aged 14 to 18 years, with moderate to high risk for PCOS, identified using the modified standard PCOS risk assessment scores by Selvaraj et al. To test knowledge and awareness, a 17- item self-designed, validated questionnaire containing 3 components: causes and risk factors, knowledge and awareness, and management of PCOS was used for data collection and the results were analysed.

**Results:** Out of 528 students, 8.7% were at moderate risk and 5.1% were at high risk of PCOS; with a significant proportion of normal BMI adolescents in both groups. 65.8% of the girls were aware of PCOS. Most students at moderate to high risk had very limited knowledge about its causes, risk factors and management. 32.8% of students at risk had a healthy BMI.

**Conclusion:** There was poor knowledge and awareness amongst the adolescents about the causes, risk factors and signs and symptoms of PCOS. Most adolescents were aware that PCOS is manageable with lifestyle modifications but were not taking any measures to improve their lifestyle or diet.

**Key-words:** PCOS, risk, knowledge, adolescents, lifestyle modification.

## **Effectiveness of Conservative Physiotherapy Management in ACL Injury**

**Author:** Dr. Nuzhat Jahan

**Current Institute:** Sports I Care

The commonest injuries in sports are musculoskeletal injuries comprising 80% of injuries in sports. Joint injuries, especially of the knee, make up a significant percentage of injuries in all sportsmen, both professional and recreational out of which ACL tears, are a potentially devastating problem among athletes and impose substantial time loss in a player's career and financial burdens on athletes' families and the healthcare system. Not only can a knee injury often require surgery followed by long period of rehabilitation, but permanent disability related to both sport and work may be the outcome as documented.

The single case study was done to evaluate if Conservative ACL tear Management helps in ACL healing and in avoiding surgery. The badminton player of senior category presented with Knee Pain and instability while walking and doing his Daily activities. The Lachman's and Anterior Drawer test were positive. He had Partial thickness tear of Posterolateral bundle of ACL, which was confirmed on MRI. With patients consent for Conservative management we started the Rehabilitation which included tailor made exercise program for the patient which was inspired by commonly available protocols for ACL Rehabilitation. Post 3 months of Rehabilitation the Patient was able to run, jump and do balance drills effortlessly. Patient's repeat MRI showed completely intact ACL. Within 6 months of Rehabilitation he could return back to his sports.

It can be concluded that this protocol support enhancement of healing and improve functional outcomes. However single case study design limits generalisation of the results. More such studies on a larger scale should be conducted to confirm similar findings in larger population.



## **Mini Foot Core Training Device**

**Authors:** Pallavi Basaprabhu Chougale

**Current Institute:** Krishna college of physiotherapy KVV karad

The human foot is a very complex structure, which allows it to serve many diverse functions. It has a significant medial longitudinal arch (MLA), which can compress and recoil, making it a flexible structure. It is governed by a number of structures, including intrinsic foot muscles. The MLA must be properly stabilised in order to carry out this process, which presents the idea of the foot core. There is evolutionary evidence that the foot arch architecture and musculature developed in response to the increased demands of load carriage and running. The stability of this arch, which we proposed to be the central ‘core’ of the foot, is requisite to normal foot function. The intrinsic muscles are largely ignored by therapists and clinicians. The conventional rehabilitation programs include external supporting of the foot rather than training these muscles. The proposed “**MINI FOOT CORE TRAINING DEVICE**” is an innovative manual and portable device designed with the ultimate aim of providing strengthening for intrinsic and extrinsic muscles of the foot. It has adjustable resistance springs and detachable resistance bands. This device can be used for strengthening purposes in gym setups as well as for rehabilitation purposes after any injury in clinical setups.

## **Knee Instability Corrector Device**

**Author:** Raiwad Shiwali Anilkumar

**Current Institute:** Krishna College Of Physiotherapy, KVV, Karad.

**Knee rotary instability** is observed excessive rotation of the tibia in relation to the femur. The popliteus muscle in the leg is used for unlocking the knees when walking, by laterally rotating the femur on the tibia during the closed chain portion of the gait cycle. In open chain movements, the popliteus muscle medially rotates the tibia on the femur. A **trick knee** is a condition where your knee suddenly buckles beneath you. This means that your knee loses the ability to support your weight and gives out.

The proposed innovation titled “**KNEE INSTABILITY CORRECTOR DEVICE**” is an innovative device conceptualized with the ultimate goal of addressing the exact etiology of the knee locking and unlocking mechanism.

In contrast to different pharmaceutical therapies that just cure symptoms while leaving the underlying cause unaddressed, the aim was to give knee locking prevention and treatment with a better, more trustworthy, and safer alternative. The goal was to create a device that could be used for both treatment and prevention that would be affordable, simple to use, have few to no side effects.

Passive knee locker is an elastic adjustable brace, worn by individuals unable to actively lock and unlock their knees. It is the device which assists the person during Flexion and extension of knee as the patient cannot do it actively.

## **Dynamic Postural Control Training Device**

**Author:** Anusha Prakash Ingale

**Current Institute:** Krishna College Of Physiotherapy, KVV, Karad

The core can be described as muscular box composed of many more muscles than just the abdominals. Core stability is necessary for the spine, pelvis, and kinetic chain to balance loads appropriately. The core has been recently described as the lumbopelvic hip complex. In essence, core strengthening refers to the muscle control needed to preserve functional stability around the lumbar spine. Almost all kinetic chains of daily activities revolve around the core, which plays a crucial role in supplying local strength and balance. Core stability is the capacity to regulate the posture and motion, according to of the trunk over the legs and pelvis, enabling the terminal segment of integrated kinetic chain activities to produce, transfer, and control force and motion at its best. In order to initiate functional limb movements—which are necessary for athletics—it has been demonstrated that core stability and its motor control are crucial. To enhance performance and reduce injury risk, sports medicine professionals employ core strengthening exercises. To address these point of issues, **Dynamic Postural Control Training Device** has been conceptualized. The summary of the innovation is to provide progression of core strengthening, balance, postural control, athletic training. It is a tool that enhances equilibrium and consistency in addition to strengthening the core muscles.

## **Correlation between Gluteus Maximus Muscle Strength And Dynamic Balance In Recreational Kabaddi Players – A Pilot Study**

**Authors:** Aditi Abhay Kulkarni

**Current Institute:** Laxmi Memorial College of Physiotherapy

**Introduction:** Kabaddi is an intermittent vigorous contact sport that consists movements of quick manner. This sport requires a high amount of physical fitness in the players to execute offensive push, falls, turns, sudden change of direction holding, bending, jumping, leg and hand touch and hop toward the opponent. Good muscles strength and dynamic balance are the most important components of hopping. The external rotational power of Gluteus Maximus creates a torque like force at the hip joints. Dynamic balance is needed to perform such movements well. The Gluteus Maximus plays a significant role in maintaining the dynamic balance of the players. The objective of the study is to find the correlation between Gluteus Maximus muscle strength and dynamic balance in recreational Kabaddi players.

**Method:** A total of 20 recreational kabaddi players for included in the study (10 males and 10 females) aged between 20-30 years under normal BMI. The Gluteus Maximus muscle strength was evaluated using a hand held dynamometer. Dynamic balance was evaluated using LQYBT. Karl Pearson's correlation test was used to find the correlation between Gluteus Maximus muscle strength and dynamic balance.

**Results:** In this study a total of 20 individuals were included. Using Karl Pearson's correlation coefficient, statistically highly significant positive correlation was found between Gluteus Maximus Strength and dynamic balance in Right lower extremity with a mean value of ( $r=+0.457$  ;  $p<0.01$ ) as well as Left lower extremity ( $r=+0.369$  ;  $p<0.01$ ). Data was analyzed using SPSS version 20.0 and p value  $<0.01$  was consider statistically significant.

**Conclusion:** The study concludes that a good muscle strength of Gluteus Maximus is important for the player to maintain a good dynamic balance and there is a good correlation between the Gluteus Maximus muscle strength and the dynamic balance.

**KEYWORDS:** Muscle strength; Sports; Postural balance; Sports/ physiology; India.

## **Effect Of Forward Head Posture on Pulmonary Function among Chess Players”: An Observational Study**

**Authors:** Dr.Simran Singh

**Current Institute:** DVVPPF’s college of physiotherapy, Ahmednagar

**Introduction:** FHP is one of the commonest postural malalignments found in today’s Chess Players. FHP is commonly described as forward head with hyperextension of cervical spine.

**Procedure:** Craniovertebral angle measured using ON protractor smartphone, marking the C7 vertebra and the tragus of ear with appropriate marker and pulmonary function test were measured. Spirometry was performed by all subject and values of FEV1, FVC and FEV1/FVC values were noted.

**Result:** The Study Show that Forced vital capacity, Forced Expiratory volume in 1 second, FEV1/FVC ratio and peak expiratory flow rate were not significant in Chess Player with forward head posture. There is a negative correlation was found with FVC (r value=-0.1744), FEV1(r value =-0.2732), FEV1/FVC ratio (e value=-0.7637) and PEFr (r value=-0.6047) in Chess Player with forward head posture.

**Conclusion:** The pulmonary function showed no direct correlation in Chess Player with forward head posture but it is found that decreased craniovertebral angle cause some restriction of pulmonary function which is clinical and has some other side effects on body posture and ergonomics.

**Keywords:** Craniovertebral angle, Forward head posture, Pulmonary Function test, Force Vital Capacity, Forced Expiratory Volume in 1 sec, Peak Expiratory Flow Rate.

## **Evaluation of Anxiety, Depression and Physical Activity in Sports Players among the Undergraduate Physiotherapy Students**

**Authors:** Richa Kashinath Ingle

**Current Institute:** DVVVPF's College of Physiotherapy, Ahmednagar.

**Background:** Psychological morbidities such as anxiety and depression are the most common mental health conditions in the modern world. Depression is the most prevalent mental illness, according to the WHO characterised by melancholy, loss of interest or pleasure, guilt or low self-worth feelings, low energy, difficulty concentrating, disturbed sleep or appetite, and low energy. Anxiety disorders are characterised by excessive fear and worry as well as related behavioural disturbances. WHO defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure.

**Aim:** The aim of this study was to evaluate depression, anxiety and physical activity in sport players among the undergraduate physiotherapy students.

**Objectives:** To see the level of Anxiety, Depression and Physical activity in undergraduate physiotherapy students and the impact of physical activity on anxiety and depression in sport players among physiotherapy students.

**Methods:** This is an observational study conducted in Physiotherapy College in Nagpur city. The total duration of this study was 2 months, November and December 2023. Data was collected from 120 undergraduate physiotherapy students from first to fourth year. Beck Anxiety Inventory, Beck's Depression Inventory and International Physical Activity Questionnaire were used to evaluate anxiety, depression and physical activity.

**Result:** The level of anxiety was found to be **41.83%**, while depression **32.38%** and physical activity **43.66 %** respectively in the undergraduate physiotherapy students. Whereas, the students involved in sports reported anxiety level **13.34%**, depression **10.51%** and physical activity is **96.66%**.

**Conclusion:** Psychological illness in the form of anxiety and depression have been reported in substantial proportion of undergraduate physiotherapy students who doesn't play sports. Whereas physically active students who plays sports such as badminton, basketball, football and volleyball shows less level of anxiety and depression.

**Key Words:** Anxiety, Depression, Physical Activity, Sports players, Undergraduate Physiotherapy students.

## **Prevalence and Severity Of Hamstring Tightness Among Recreational Sports Players: A Cross Sectional Study**

**Authors:** Dr. Vipin Anilprakash Beldar

**Current Institute:** DVVPPF's college of physiotherapy, Ahmednagar

**Background:** Flexibility is important for normal biomechanical function. Muscle tightness is caused by a decrease in the ability of the muscle to deform. Hamstring tightness leads to a high risk of recurrent injury, decreases performance in athletes, leads to post-exercise soreness, and decreases coordination among athletes. Hence, the objectives of this study were to find out the prevalence and severity of hamstring tightness among recreational sports players.

**Aim:** The aim of this study is to study prevalence and severity of hamstring tightness among recreational sports players (age group 18-25) using active knee extension test in supine position.

**Method:** In this cross-sectional study, 40 participants with hamstring tightness were included using purposive sampling. The tightness was measured by the AKE test. Three measurements were taken, and the average of their readings was noted.

**Result:** Analysis showed a higher prevalence of hamstring tightness among recreational sports players. More students were affected by the AKE angle between 30° and 45°.

**Conclusion:** The prevalence of hamstring tightness is very high in recreational sports players in the age group of 18–25 years.

**Keywords:** prevalence, active knee extension test, hamstring tightness severity.

## **To Compare Effectiveness Of Myofacial Release Technique Versus Cyriax Approach In The Management Of Patient Of Lateral Epicondylitis Among With Tennis Player**

**Author:** Dr Swati Ganesh Ade

**Current Institute:** DVVPPF's College Of Physiotherapy, Ahmednagar.

**Background:** Tennis elbow is a degenerative or failed healing tendon response characterized by the increased presence of fibroblasts, vascular hyperplasia, and disorganized collagen in the origin of extensor carpi radialis brevis, is the most commonly affected structure. And it is an extremely common injury appeared in a high proportion of tennis player.

**Objective:** To compare the effects of myofascial release technique and cyriax within the management of the patient with lateral epicondylitis.

**Method:** An experimental study was started with random allocation. Twenty-eight diagnosed lateral epicondylitis individuals from the community were divided equally into two groups [A&B], group A was given MFR technique and the group B was given CYRIAX for 1 week. Outcome measure functional disability and pain was measure by Taken PTREE

**Result:** The study used outcome measures, Patient- Rated Tennis Elbow evaluatio . Paired sample 't' test was used to analyse the day 1, day 6 and day 12 difference for pain and improve function compared using Wilcoxon rank signed test. Independent 'T' was used to know the difference between experimental and study groups for pain and improve function. The level of significance was set at  $p < 0.05$  for all An experimental study was started with random allocation. Twenty-eight diagnosed tennis elbow individuals from the community were divided equally into two groups [A&B], group A was given MFR technique and the group B was given CYRIAX for 1 week.

**CONCLUSION:** The Result shows both the Myofascial release technique and Cyriax technique equally effective in reducing pain and disability.



# **Effect of Agility And Balance Training On Sports Performance In Recreational Football Players**

**Authors:** Akshay desai

**Current Institute:** Krishna College of physiotherapy Karad

**Introduction:** Football requires a player to be agile to quickly change their directions in response to the ball's movement. Agility is a fundamental base to perform well and has a great influence in determining the skill set and performance of a player. Balance is determined as a key factor in training agility as changing directions requires balancing skills to avoid falls. This study aims at determining the effect of agility training on the performance of football players with and without an additional balance training program.

**Methodology:** The study was conducted in Karad. 40 subjects were selected according to inclusion and exclusion criteria and were randomly divided into Group A (n=20) that received agility training and Group B (n=20) received agility combined with balance training for 4 weeks for 3 days/week. Subjects were evaluated pre and post-treatment by the Illinois test, Flamingo balance test, and 30-M sprint test, and results were statistically analyzed.

**Result:** Data was statistically analyzed using Paired and Unpaired t-tests.

For group A: post-intervention Illinois test was ( $18.8 \pm 2.968$ ) with  $p < 0.0001$ , flamingo of right was ( $2.2 \pm 1.105$ ) and left was ( $0.9 \pm 0.9119$ ) with  $p < 0.0001$ , and 30 M sprint test ( $5.08 \pm 0.9841$ ) which shows extremely significant.

For group B: post-intervention Illinois test was ( $16.86 \pm 2.448$ ) with  $p < 0.0001$ , flamingo of right was ( $0.5 \pm 1$ ) and left was ( $0.3 \pm 0.6569$ ) with  $p < 0.0001$ , and 30 M sprint test ( $4.47 \pm 0.7094$ ) which shows extremely significant.

Between-group comparison Illinois test for group A ( $18.8 \pm 2.968$ ) and group B ( $16.86 \pm 2.448$ ) with a p-value of 0.0288 shows significance. The Flamingo test for group A right ( $2.2 \pm 1.105$ ) and B ( $0.5 \pm 1$ ) with p-value  $< 0.0001$  shows significance. Group A left ( $0.9 \pm 0.9119$ ) and B ( $0.3 \pm 0.6569$ ) with a p-value of 0.022 shows significance, and 30 M sprint test for group A ( $5.08 \pm 0.9841$ ) and group B ( $4.47 \pm 0.7094$ ) with p-value 0.0287, shows significant.

**Conclusion:** The study concludes that balance training should be incorporated with agility training to further enhance the performance of football players.

**Keywords:** Agility, balance, football players

## **To Compare Effectiveness Of Cyriax Technique (DFTM) Versus Muscle Energy Technique (MET) In A Patient With Bicipital Tendinitis Among Basket Ball Player**

**Author:** Rohini Vitthalrao Sarode

**Current Institute:** DVVPPF's College of Physiotherapy, Ahmednagar.

**Background:** Bicipital tendinitis, or bicep tendinitis, is an inflammatory process of the long head of the bicep tendon and is a common cause of shoulder pain due to its position and function. In basketball player, bicipital tendinitis occurs due its overhead activity. Several treatment techniques are existing for the improvement of bicipital tendinitis, MET and cyriax technique used to improve tendinitis.

**Objective:** To compare the effects of cyriax and muscle energy technique within patient with bicipital tendinitis among basketball player

**Method:** An experimental study was started with random allocation. Forty diagnosed bicipital tendinitis individuals from the community were divided equally into two groups, one group was given cyriax technique and the other group was given MET for 1 week pain and range of motion of shoulder.

**Result:** The study used outcome measures, numerical pain rating scale, Range of motion (ROM). Paired sample 't' test was used to analyse the pre and post difference for abduction, flexion and internal rotation ROM. Pre and post pain scores were compared using Wilcoxon rank signed test. Independent 't' was used to know the difference between experimental and study groups for abduction, flexion and internal rotation. NPRS scores between groups were compared with Mann Whitney U test. The level of significance was set at  $p < 0.05$  for all tests.

**Conclusion:** The study concluded that both cyriax (DFTM) and muscle energy technique (MET) are effective in bicipital tendinitis but MET show more immediate effect in bicipital tendinitis patient.

**Key words:** Muscle energy technique, cyriax (DFTM), tendinitis NPRS and goniometer.

# **Immediate Effect Of Positional Release Therapy Vs Ischemic Compression Therapy For Gastrocnemius Latent Trigger Point To Reduce Pain In Football**

**Authors:** Dr. Arshee Saud Bagdadi

**Current Institute:** DVVPPF's College of Physiotherapy, Ahmednagar.

**BACKGROUND:** Sports is categorized into collision and contact sports. Football is a moderate contact sports which leads to rough play and increased exposure to injury and demands high levels of physical fitness like speed, agility, strength, power and endurance. Maximum injured site in footballers was found to be the region around the calf (29.62%). Myofascial trigger point defined as a hyperirritable spot in the skeletal muscle and that is associated with a hypersensitive palpable nodule in a taut band of muscle. Ischemic Compression is the application of progressively strong, painful pressure on trigger point to eliminate the trigger point. Positional Release Therapy is also known as strain counter strain therapy, is an indirect and passive treatment accomplished by placing the involved tissues in an ideal position of comfort. Both techniques have been proved to be effective. The **aim** and **objective** of this study was to compare the effectiveness of PRT and ICT in reducing pain to understand which intervention will give better results and can be used as first line of intervention for the players.

**METHODOLOGY:** 38 professional footballers having trigger point in gastrocnemius was selected using pressure algometer according to inclusion and exclusion criteria and was randomly distributed between grp A (PRT) and grp B (ICT). Both groups received treatment 90 sec each. Pre and post VAS values for pain was measured.

**RESULT:** Immediate intergroup comparison of VAS between Group 1 and 2 where mean value for PRT post intervention is 5.39 and ICT is 5.55 with  $p < 0.05$ , highlighting insignificant minimal difference in VAS score between the groups.

**CONCLUSION:** The present study concludes that both Positional Release Therapy and Ischemic Compression Technique showed statistically equal significant results in reducing pain and can be use onfield to improve performance of football players.

**KEYWORD:** positional release, ischemic compression, gastrocnemius trigger point.

## **Nutri Bite- Modify Food Produced Designed For Resistance and Strength Training Sports Personal Developments**

**Author:** Momin Iram Anjum Ahmed

**Current Institute:** Dr.BMN College of home science, (autonomous)

**Introduction:** The Nutri bite is an alternative version of croissant. The product is rich in protein and energy which enhances therapeutic aspect. Hence preferred for young athlete who involved in endurance sport.

**Method and procedure:** Nutri bite was developed using wheat (50g) instead of maida which has high protein and energy. The stuffing was prepared with tofu and soya chunks in the proportion of 2:1(gm). The sensory evaluation of the product was conducted to assess the acceptability of the food product. The product was air fried rather than deep fried hence the oil content less. The moisture percentage was found to be 40% and acceptability on the basis of texture colour and test was 90%.

**Results:** This product enhance muscle mass and give instant energy before training. These food products aid in weight gain for athletes. Product have 396kcal energy, 43gm carbohydrate, 26gm protein, and 13gm fat.

**Conclusion:** Hence these nutri bite can be recommended for sport with high resistance and strength training sport person.

**Keyword:** High energy and protein, tofu, muscle mass, strength training and resistance.

## **Development of modified food product Bongond ladoo for endurance sports**

**Author:** Sujata Santosh Irada

**Current Institute:** Dr. BMN College of Home Science, Mumbai

**Introduction:** The bongond ladoo provides instant energy and healthy fats to the endurance athlete as it is made with coconut sugar, ghee, Gond (edible gum) and sorghum.

**Methodology:** A modified energy dense ladoo was developed using millets. The ladoo was prepared using conventional technique. The main raw ingredients were Sorghum and Wheat in 1:1 proportion. The sugar was replaced with coconut sugar as GI of the sugar is 65 which induces blood glucose levels. The 15 g Coconut sugar is added with 15g of ghee to enhance its calorie value. Nuts (10 g) were incorporated to make the product rich in Omega 3 fatty acid.

**Results/Conclusion:** Hence, this modified product can be recommended as energy dense ladoos for endurance sports.

**Keywords:** edible gum, bone health, millet ladoo, innovative ladoo.

## **Modified Food Product “Paan Truffle” for Sports Athletes**

**Authors:** Chettiyar Muthuselvi Masanam

**Current Institute:** Dr.BMN College of Homescience

**Introduction:** A Modified food product “Paan Truffle” was developed for sports athletes. It was a energy densed product. The primary ingredient betel leaves as it induces digestion.

**Methods & Procedure:** The Paan truffle was developed using Betel leaves (20gm), sunflower seeds (10gm) instead of Almond to reduce the cost of the product and sunflower seeds are high in antioxidants and selenium. The main ingredients used are betel leaves, sunflower seeds, desiccated coconut, condensed milk, gulkand, fennel seeds. The product can taste best at room temperature for 3-4 days. it combines a wide range of tastes, aromas, and textures. The sensory attributes showed the significant acceptance of (85%) of this betel truffle. When examine by panel members (N=25). Hence the product can be recommended for endurance sports person.

**Results/Conclusion:** This product helps to the athlete who has sweet tooth and it gives instant energy post training. Thus it can be recommended for sport athletes.

**Keywords:** Betel leaves, improve digestion, antioxidant, sunflower seeds, regulate the blood pressure and heart rate, betel truffle, paan truffle, sensory evaluation, innovative recipe.

## **Modified food product Palak Shepu Fitters for endurance sports**

**Authors:** Bhagyashree Ajgaonkar

**Current Institute:** Dr. BMN College of home science

**Introduction:** The palak shepu vadi (Spinach dill Fitter) is a delicious savoury crisp/sider. Optimal performance in sports requires a balanced diet rich in carbohydrates, healthy fats, and protein along with micronutrients.

**Aim & Objective:** 1. To introduce innovative food products to sports personnel. 2. To offer energy-dense snacks and nutrients for athletes.

**Methodology:** The palak shepu vadi was made with conventional mode. The palak shepu fitter was made with spinach, dill leaves, sorghum flour and some bengal gram and flour served with red chutney. It is energy dense and also rich in Calcium & phosphorus micronutrients. The sensory evaluation of the palak shepu fitter was done to evaluate its acceptability to naive Panel (w5) participants who examined its organoleptic properties such as the texture, aroma, taste, appearance and overall acceptability and the scores were 4.4, 4.3, 4.6, 4.1 and 4.4 respectively.

**Results/Conclusion:** The palak shepu fitter serves the purpose of consuming energy dense snacks along with micronutrients, it can be recommended for athletes alongside isotonic drinks.

**Keywords:** dill leaves, spinach, innovative recipe, sensory evaluation, spinach fitters, dill fitters, millet fitters.

## **Correlation between Foot Posture with Hamstring Muscle Tightness in the gym individuals with age group of 17-30 years. A Cross-sectional study**

**Author:** Rashi Agrawal

**Current Institute:** DVVPPF's College of Physiotherapy, Ahmednagar.

**Background:** Tight hamstrings are associated with dysfunction in the lumbar spine, pelvis, and lower limb, also in conditions like low back pain and abnormal gait. The kinematic chain's distal elements dysfunctions may affect the body's proximal segments, but there is a lack of research that focuses on the correlation between foot posture and hamstring muscle tightness. The study aimed to find the correlation between hamstring muscle tightness and foot posture using the foot posture index in gym individuals.

**Methods:** After obtaining ethical committee approval, participant were screened. Informed consent was obtained from every participant, accompanied by explanation of the study. Screening of participants was conducted based on specific inclusion and exclusion criteria. The foot posture was assessed using foot posture index and hamstring tightness using Active knee extension test.

**Result:** In our study, which included 30 participants aged between 21 and 26 (mean age:  $22 \pm 1.6$ ), using Pearson's correlation coefficient, we found a statistically significant correlation between the FPI and AKE test results. The total, the r-value was 0.8345 (p-value < 0.0001). These findings indicate a significant relationship between the FPI and AKE test results.

**Discussion:** The findings of our study revealed a significant relationship between hamstring tightness and pronation of the foot in gym individuals, as measured by the FPI. Our study contributes in providing information to prevent injuries relating to alternate foot biomechanics. Moreover, the study serves as a stepping stone for future research.

**Key Words-** Hamstring tightness, FPI, gym individuals, AKE test, Pronation of foot



## **Impact Of Total Knee Replacement On Psychological Wellbeign In Patients With Total Knee Replacement- A Cross-Sectional Study**

**Author:** Rohan Balaji Birajdar

**Current Institute:** DVVVPF's College of Physiotherapy, Ahmednagar.

**INTRODUCTION:** Total Knee Replacement (TKR) has emerged as a cornerstone in the management of advanced knee osteoarthritis, offering a transformative solution to alleviate pain and restore functional mobility. While the physical benefits of this surgical intervention are well-established, an evolving body of research recognizes the importance of psychological well-being among TKR recipients. Acknowledging the symbiotic relationship between physical health and psychological states, our investigation seeks to contribute valuable insights that extend beyond the traditional boundaries of physiotherapy outcomes.

**Methods:** Total 50 patients who were studied, who were planned to undergone TKR were included, patients having malignant tumors and psychiatric disorders were excluded

**PROCEDURE:** Approval of the ethical committee were taken. The HADS (hospital anxiety & depression scale) scale was administered pre-op day 1 of the surgery and post-op day 1 and Data were taken.

**RESULT:** INSTAT software is used for the analysis. The pre-op & post-op data were compared. The mean value for depression pre-op& post-op (5.34 &4.14) & The mean value for anxiety pre-op& post-op (6.06& 3.78). The unpaired t-test were used for analysis.

**CONCLUSION:** This study concluded that the pre-& post-operative depression & anxiety does occur in the individuals with Total knee replacement surgery.

## **Awareness about Role of Physiotherapy in Stroke among Community Dwelling Individuals Using Self-Structured Questionnaire**

**Authors:** Pooja Rohit Solanki

**Current Institute:** DVVPPF's College of Physiotherapy, Ahmednagar.

**Purpose:** AIM: To assess the extent of awareness about role of 'Physiotherapy in Stroke' among community dwelling individuals using self-structured questionnaire.

**OBJECTIVES:** To develop a questionnaire about awareness of Physiotherapy in Stroke. To analyze the components of awareness based on the responses.

**Methods:** Observational study. Community Dwelling individuals not exposed to Physiotherapy Intervention were included. A questionnaire was prepared with 23 questions in different response formats with specific marks to each response. Total maximum score of the questionnaire was 59.

With the help of Social worker visit was made to the nearby village for collection of data. The questionnaire was administered and responses were noted.

**Results:** Quantitative data was derived from the questionnaire. Responses to each questions were analysed in terms of percentages and described. Out of 100 participants 57 were males and 43 were females. The obtained data shows that very few participants (17%) have heard and have knowledge about Physiotherapy more than a half population (50%) had never heard about Physiotherapy. Only very few participants (33%) had an idea about when to visit a Physiotherapist and knowledge about exercise therapy and modalities given during Physiotherapy treatment.

**Conclusion:** The study reveals that most individuals in Ahmednagar are unaware of Physiotherapy and have minimal knowledge about the specialized services offered by Physiotherapy professionals. Therefore, public awareness about Physiotherapy and the conditions that a physiotherapist can deal with needs to be improved.

**Keywords:** Community Awareness, Physical Therapy, Stroke.

## **“Effect of Intervention to increase Awareness about Physiotherapy for Stroke Rehabilitation in Community Dwelling Individuals- A pre post-test study.”**

**Authors:** Neha Kishor Jadhav

**Current Institute:** DVVPPF'S College of Physiotherapy, Ahmednagar-414111

### **Introduction:**

The Aim is to study the efficacy of awareness module to increase awareness about ‘Physiotherapy in Stroke Rehabilitation’ among community dwelling individuals using self-structured PPT.

The objective is to develop a module to create awareness about the Physiotherapy in Stroke in a local language along with pamphlet to establish the carryover effect in the community dwelling individuals, using a self-structured PowerPoint presentation (PPT).

**Procedure:** The procedure involved preparing a self-structured PPT, and administering pre-screening questionnaires to patients in the local OPD and villagers. The six-month experimental study was conducted in and around tertiary care hospital and neighbouring villages.

People who haven't experienced stroke within last 6 months or never received Physiotherapy were included for the study. After obtaining consent an awareness session was held using the PPT, with pre and post-screening questionnaires to assess the impact.

The outcome measures included a self-structured questionnaire, prepared in Marathi which had maximum score of 59.

**Result:** 4 sessions were conducted for the awareness in 3 villages around the tertiary care hospital. Total 86 individuals, 36 males and 50 females, attended the session. The average score was 53 indicating better awareness after the orientation session.

**Conclusion:** The awareness module is effective in improving awareness about Role of Physiotherapy in Stroke and can be widely used.

**Implications:** This module can be used as a sample for creating awareness about other conditions as well and the impact of the same can be investigated.

**Keywords:** Stroke, Physiotherapy, Awareness.

## **Awareness Of Iyengar Yoga Therapy In Geriatric Population In PCMC Area**

**Authors:** Swarada Kumar Deshpande

**Current Institute:** LSFPEF's College of physiotherapy

**Introduction:-** Of the many styles of yoga taught, Iyengar yoga is the most prevalent. It is based on the teaching of the yoga master, B.K.S. Iyengar (1976) who has taught yoga for 70 years and has applied yoga to many health problems. It is distinguished from other styles of yoga by the emphasis on precise structural alignment, use of props and sequencing of poses. He systemized over 200 classical yoga asanas and 14 different types of pranayamas with many variations. The use of props to help perfect the poses, reasoning that the use of props stimulates the practitioners body and mind and creates the zeal to stay longer. The aids include cloth belts, blankets, bolsters, wooden benches and many more. Then trainer will decided which props are needed to achieve the correct alignment without strain, facilitating the practitioner to experience an inward journey of self-discovery. It helps to strengthen the muscles of the body responsible for posture. But, even today most people do not know about iyengar yoga therapy and their benefits. And hence they do not prefer iyengar yoga as a therapy to recover from any musculoskeletal condition. Therefore, the need of the study is to see that how many people know about iyengar yoga therapy and how many don't.

**Procedure :-** Ethical approval had taken. In this study, 101 geriatric individuals were taken. An self made questionnaire form had been formed on paper and circulated among geriatric people.

**Result :-**Awaited.

**Conclusion :-**Awaited.

**Keywords :-**Iyengar yoga therapy, structural alignment, use of props, sequencing of poses, strengthen the muscles.

## **Assessment of Locomotor Functional Loss among Frail and Non-frail elderly individuals residing in community- An Observational Study**

**Authors:** Samruddhi S Petkar

**Current Institute:** DVVPPF's College of physiotherapy Ahmednagar

**Introduction:** Frailty can relate to the loss of physical, psychological and/or social domains, causing vulnerability to adverse outcomes like cognitive decline, disability, falls, hospitalization and death. The high prevalence of frailty in older adults, especially among rural elderly population in India is well documented. Locomotor system diseases are the main causes of disability associated with aging, and one of the main targets for their prevention. Data show that 21.5% of these patients have some disease of the musculoskeletal system such as osteoporosis, fractures, spondyloarthritis, and osteoarthritis. As there are less literature on frailty and locomotor functional loss among elderly population. Hence, the study is conducted to assess locomotor functional loss as well as frailty and to compare locomotor functional loss among frail and non-frail community dwelling elderly individuals.

**Procedure: Research Setting:** Community setup

**Study Design:** Observational

**Inclusion Criteria:** 1) Age group 60 and above

2) Frail and non frail with Locomotor syndrome

**Exclusion Criteria:** 1) Mental illness

2) Past history of fracture of lower limb

3) Severe pulmonary, renal, coronary or hepatic diseases.

After obtaining institutional ethical clearance 100 community dwelling individuals were included according to the inclusion criteria. Informed consent was taken from the individuals. Demographic and clinical characteristics of individuals was obtained. Locomotor function loss and frailty score was assessed using Geriatric locomotive function scale (GLFS-25) and FRAIL Scale respectively. Geriatric Locomotor Function Scale (GLFS-25) is a questionnaire which includes 25 questions based on 7 domains namely, Pain, Mobility, Self-care, Interpersonal interaction, Domestic life, Social life, Anxiety. FRAIL scale includes 5 domains namely, Fatigue, Resistance, Ambulation, Illnesses, Loss of weight. Data will be analysed.

**Result & Conclusion:** analysis of the result is done by descriptive method.

**Key Words:** Locomotor function loss, elderly, Frail, Non-frail.

## **The Variance between Gender and Emotional Intelligence among Undergraduates in the Colombo District**

**Authors:** Tharindi Wijerathne<sup>1</sup> Thanuja Liyanage<sup>2</sup> Dina Keumala Sari<sup>3</sup> Ranil Kumaranayake<sup>4</sup>  
Dilantha Adithya<sup>5</sup>

**Current Institute** - University of Peradeniya, Galaha Rd, 20400

### **Introduction:**

Emotions are vigorous characteristics of human nature and the inspiration for behavior. The ability to recognize and succeed in one's own emotions is stated as Emotional Intelligence (EI). Thus, the aim of the present study was to examine the variance between gender and the EI of university undergraduates.

### **Methods:**

A descriptive quantitative correlation research design was used to conduct the study. A total of 400 Colombo district State University undergraduates were included in the sample. The participants filled out the Wong and Low questionnaire standard questionnaire to measure the EI. Convenience sampling has been used in order to collect the data. SPSS 25.0 software was used to process and analyze the data with the Mann Whitney U test.

### **Results:**

The rate of significance is 0.00 and as it is less than 0.05, the test result is statistically significant in relation to the gender, the hypothesis was accepted, and the null hypothesis was rejected. The test results indicate that males had significantly greater emotional intelligence than females, ( $z = - 3.829$ ,  $p = .000$ ).

### **Conclusion:**

The findings provide a basis for research aimed at determining the variance between gender and EI. Potential underlying mechanisms and directions for future research are suggested.

**Keywords:** emotion, emotional intelligence, psychological, youth, State University

# **Comparison of Pain threshold in elite Athlete and non-athlete by Pressure Algometer**

**Authors:** Nausheen Tamboli

**Current Institute:** BV DU School of Physiotherapy, Pune.

## **Introduction:**

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.

Pain threshold is one of the inseparable element that an athlete has to deal with in order to achieve the best of their physical abilities.

It may vary considerably as compared to a normal individual due to various factors such as physical conditioning, environmental and psychological factors associated to the athlete.

## **Need of study:**

The ability to maintain performance in painful conditions is crucial to continued participation in most sports and is a deciding factor in whether an athlete is successful or not.

Hence it is imperative to differentiate and objectify the in pain threshold in an elite athlete and non-athlete.

## **Method:**

50 athletes from badminton, tennis, hockey and running 18years to 25 years of age having experience  $\geq 1$  year in field were included and for control group 50 same age group individuals selected by a simple random sampling method. Those who have any neurological diagnosis, orthopaedic, cognitive problem were excluded.

Ethical Permission from Institute and Written consent taken. Demographic data collected. The pain threshold was measured by using Pressure Algometer.

For the measurement sitting position given to the Participants. The reading were taken on two reference point on the participant's body as follows;

Upper extremity - centre of upper fibres of the trapezius muscle.

Lower extremity- 1 cm distal from the medial knee joint line with the knee flexed at 90°

Results are awaiting.

## **Effect of Body Mass Index (BMI) on Auditory and Visual Reaction Time in Formula Car Racers Using INQUISIT 4.0**

**Authors:** Shraddha Jayesh Kanekar

**Current Institute:** LSFPEF'S College of Physiotherapy.

**Introduction:** Reaction time is the measure to know how person responds to any given stimulus. A Stimulus can be auditory, visual or both. BMI is index found by dividing weight to square of height. A quick reaction time is important for sports for better results. Motorsport is not only recreational activity but also high-profile international sport. A lot of studies have been conducted in motorsports for technical aspects of car, but very limited studies had been conducted regarding motor, perceptual, and cognitive skills of athlete performance in motorsports. INQUISIT 4.0 is application-based reaction time test which had a good inter and intra rater reliability compared to the ruler drop test.

**Procedure:** Permission from Ethical Committee had been taken. Consent from participants and authorities was taken. 28 Participants were selected according to inclusion criteria. BMI was calculated. Visual and Auditory reaction time were measured with INQUISIT 4.0 application.

**Result:** Using ANOVA test, the mean difference for all reaction time tests for all the BMI categories was statistically insignificant.

**Conclusion:** BMI has no effect on auditory and visual reaction time in formula car racers.

**Keywords:** Body Mass Index, Reaction Time, Motorsports, Formula Cars.



## **Effectiveness Of Cyriax's Physiotherapy Vs Phonophoresis in Tennis Players with Lateral Epicondylitis**

**Authors:** Navnit Gurwinder Sehra

**Current Institute:** DVVPPF'S College of Physiotherapy

**Introducton:** Tennis elbow is an overuse syndrome which has been termed as an extra-articular affection with significant decreased grip strength, functional limitation due to pain. Even though signs and symptoms of tennis elbow are clear, to date no ideal treatment has emerged.

**Aim & Objective:** The aim of this study is to find out the efficacy of cyriax's physiotherapy vs phonophoresis in subjects with tennis elbow. The objective was to investigate whether the cyriax's physiotherapy is more successful than Phonophoresis coupled with static stretching and eccentric strengthening exercises provided to the wrist extensors in improving pain, grip strength and functional outcome in patients with tennis elbow.

**Method:** Approval from ethical committee was taken. Total of 60 individuals in the age group of 18-25 years were included in the study. Participants were randomly allocated into two groups: - group A-control group (cyriax's physiotherapy) & group B- experimental group (phonophoresis coupled with supervised exercise program). Patients were evaluated for pain severity (VAS- pain), pain free grip strength (Jamar hand dynamometer) and functional status (Tennis Elbow Functional Scale) at baseline (week 0), at end of week- 2, 4 & 8 respectively.

**Result:** Descriptive statistical analysis was used. Before & after intervention, the mean value of pain group A (8.10,5.60) group B (8.20,3.16). Before & after intervention, the mean value of pain free grip strength group A (17.33,28.26) group B (16.53,42.00). Before & after intervention, the mean value of tennis elbow functional scale group A (33.10,21.20) group B (33.66,12.73). The p values for all the domains were <0.05.

**Conclusion:** This study concluded that Cyriax's physiotherapy was more effective than phonophoresis coupled with supervised exercise programme.

**Keywords:** Tennis players, Cyriax's physiotherapy, Phonophoresis, Effectiveness, lateral epicondylitis.

## **Correlation Between Balance & Ankle Range of motion in badminton players of Ahmednagar - A cross-sectional study**

**Author:** Mrudula Dohe, Dr Saqib Syed

**Current Institute:** DVVVPF's College of Physiotherapy, Ahmednagar.

**Introduction:** Badminton is a popular sport played worldwide which requires fast & power shots & agile foot work. In this study the dynamic balance & ankle range of motion were correlated between Badminton players of Ahmednagar.

**Aim & Objective:** The aim of the study was to determine bilateral dynamic Balance & ankle range of motion in badminton players aged between 19-30 years. The objectives were to correlate between dynamic balance & ankle range of motion in badminton players of Ahmednagar.

**Methodology:** 30 badminton players aged between 19-30 years participated in this study. The study design was cross-sectional study. The dynamic balance was evaluated by Y-Balance test using Y-Balance instrument (lower Quarter). The ankle range of motion was measured by Goniometer. The data was collected & analysed statistically with Pearson correlation test

**Result:** In the study the correlation was done between bilateral Y-Balance & ankle range of motion. The mean value for right side Y-Balance was found to be 68.76 & for left side it was 66.38. Mean value for right leg dorsiflexion was 24.66, for left dorsiflexion was 23.33 whereas the mean value for right leg plantarflexion was 40.83 & for left leg it was 39.10. The study was not significant.

**Conclusion:** No significant differences were found between Y balance test and Ankle range of motion.

**Key words:** Badminton, Dynamic Balance, Ankle range of motion.

## **Assesment of Lumbo pelvic stability in adolescent fast bowlers**

**Authors:** Sameer vijay Ushkewar

**Current Institute:** PES Modern college of Physiotherapy

**Introduction:** Lumbo pelvic stability is the ability to control the motion of Lumbar spine and pelvis relative to a position of equilibrium such that forces acting and resultant moment on the structures are same. Lumbo pelvic stability is required to generate pace in fast bowlers. During Fast bowling there are large vertical and horizontal ground reaction forces experienced with vigorous 3D motion of trunk, thus reducing the performance and putting the adolescent fast bowlers at risk of variety of low back injuries like spondylolysis, spondylolystheis and even career ending injuries like lumbar stress fractures.11-55% of adolescent fast bowlers have reported these injuries. Thus early assessment and diagnosis of the poor Lumbo pelvic hip control becomes important.

**Method:** An Observational study with 70 participants was performed. Participants were selected using inclusion and exclusion criteria and written consent was taken. They were assessed for the lumbo pelvic stability using Dip test and stabilizer pressure biofeedback unit. Data was analyzed and participants were rated good or poor Lumbo pelvic stability.

**Results:** out of 70 participants - **43** had **Poor** lumbo pelvic stability and **27** participants had good lumbo pelvic stability.

**Conclusion:** Maximum Adolescent fast bowlers developed poor lumbo pelvic stability putting them at the risk of low back injuries.

**Keywords:** Lumbo Pelvic Stability, Adolescent Fast bowlers, Stabilizer pressure biofeedback unit, Dip Test.

## **Effectiveness Of Proprioceptive Training on Eye Hand Coordination and Footwork Skills In Amateur Badminton Players**

**Authors:** Sanuja Prasad Kher

**Current Institute:** LSFPEF's college of physiotherapy, Nigdi, Pune

**Introduction:-** Badminton is a racket sport for two or four people with a temporal structure characterised by actions of short duration and high intensity. Eye hand coordination plays a crucial role in visual motor function that facilitates goal directed use of the arm, hand and fingers to produce controlled, accurate and rapid movements. Footwork skill plays important role as it allows the player to move faster and more efficiently throughout the court. Correct footwork helps players maintain balance and stability, which is essential for executing accurate shots and powerful smashes. Proprioception allows for more efficient changes in direction, landing ability and movement becomes more efficient and powerful.

**Procedure:-** In this study,30 Amateur badminton players were taken which were divided into two groups. Group A(15 players) was control group and group B(15 players) was experimental group. Experimental group was given Proprioceptive training for 3 weeks alternate days while the control group continued their regular training. The procedure included assessment of eye hand coordination by Throw Overhead And Underarm Arrest Test and assessment of footwork skills by Ya Lan Chiu Footwork measurement test. The experimental group was given proprioceptive training was given for 3 weeks on alternate days. The control group continued to perform their previous training throughout the study. The proprioceptive training included periods of warm up, proprioceptive exercises and cool down. After the training post assessment of eye hand coordination and footwork skills test was taken. Both the pre and post assessment of control and experimental groups were compared by t tests.

**Result:-**Awaited

**Conclusion:-**Awaited

**Keywords:-**Badminton, eye hand coordination, footwork skills, proprioception.

# **Artificial Intelligence: The Future of Sports Rehabilitation & Injury Prevention Among Athletes: A Survey Based Study**

**Authors:** Yukti Agrawal

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**Introduction:** This study explores the awareness, knowledge and attitude of Artificial Intelligence (AI) in the realm of sports rehabilitation and injury prevention among athletes. With an increasing emphasis on optimizing athletic performance and minimizing injury impact, the integration of AI technologies offers a promising avenue for personalized and data-driven approaches. The introduction provides context for the survey-based study, highlighting the prevalent challenges in traditional rehabilitation methods and the growing awareness of AI solutions within the athletic community.

**Methods:** To understand the current landscape and attitudes toward AI integration in sports rehabilitation, a comprehensive survey was designed and will be administered to athletes, sports professionals, and coaches. The survey encompassed key aspects such as the awareness, knowledge and perception of artificial intelligence (AI) among athletes from field of sport. The methodology aimed to capture diverse perspectives within the athletic ecosystem and gather qualitative data to inform the study's objectives. The questionnaire is intended to collect information regarding various aspect of artificial intelligence (AI) among athletes from field of sport. The response provided by you will helps us to develop more futuristic goals towards the sustainable development of sports and addressing the preventive measure towards physical injuries.

**Result:** Result awaited. This survey-based exploration will shed light on the intersection of AI and sports rehabilitation, offering valuable insights into the perceptions and expectations of athletes and sports professionals.

**Conclusion:** Conclusion awaited. This study will contribute to the ongoing discourse on the role of AI in sports medicine, signaling a promising future where data-driven, personalize approaches and redefine the landscape of athletic care, facilitate and enhance performance and reduce injury impact.

**Keywords:** Artificial Intelligence, Athletes, Sport Injury, Sport Rehabilitation, Injury Prevention

## **Prevalence of Musculoskeletal Injuries in Artistic Gymnastics**

**Authors:** Gayatri Mujumdar and Disha Shinde

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**Background** - Gymnastics is a type of sport that includes physical exercises requiring balance, strength, flexibility, agility, coordination, artistry and endurance. The movements involved in gymnastics contribute to the development of the arms, legs, shoulders, back, chest, and abdominal muscle groups. Artistic Gymnastics is a sport well known for requiring a heavy and difficult training load from a younger age to reach a high level of performance. This also is associated with an injury risk.

The most common form of competitive gymnastics is artistic gymnastics (AG), which consists of, for women (WAG), the events floor, vault, uneven bars, and beam; and for men (MAG), the events floor, vault, rings, pommel horse, parallel bars, and horizontal bar.

Types of gymnastics:

1. Women's Artistic Gymnastics
2. Men's Artistic Gymnastics
3. Rhythmic Gymnastics
4. Trampoline
5. Tumbling
6. Acrobatic Gymnastics
7. Group Gymnastics

**Aim**-To determine the prevalence and types of musculoskeletal injuries in artistic gymnastics

**Methodology** – Study type-cross-sectional observational research.

Sample size-60

Data was collected using a questionnaire administered directly to the individuals practicing artistic gymnastics at various sport centers. All the participants are administered an online questionnaire consisting of 12 questions regarding injuries experienced, treatment received. Data will be analyzed to find out the prevalence and types of common musculoskeletal injuries in artistic gymnastics.

**Result** -Awaiting

## **A Comparative Study of Visual and Auditory Reaction Time in Tennis Players with Non-Athletes**

**Authors:** Miss Khushi Sharma, Dr. Swati Bhise

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**Introduction:** Reaction time [RT] is the length of time taken for a person or system to respond to a given stimulus or event [1]. Sports such as badminton, table tennis and squash have been classified as reaction sports. Various factors such as age, sex, exercise, central and peripheral vision, fatigue, medical condition influence reaction time.[2]

**Need Of Study:** Badminton and table tennis have in mutual a quick progression speed, resistance, strength, co-ordination, reaction, expectancy of game skills and technical achievement.

The purpose of this study is to measure and compare simple visual reaction time [VRT] and auditory reaction time [ART] of athletes and with non-athlete.

**Aim:** The aim is to compare VRT and ART of tennis players with non- athletes.

A cross-sectional study was carried out on 52 healthy tennis players participating in under 14 years tournament since minimum 2 years and 52 non-athletes of the same age group of non-athletes by simple random sampling from sport clubs and schools respectively. Individuals with any hearing or visual impairments and cognitive disorder were excluded.

Ethical approval from institute and written Consent was taken. Reaction time was measured by computerized reaction time software.

For VRT the stimuli was '**blue colored circle**' displayed on the screen and after seeing the participants has to press any key. For ART the stimuli was '**sound of a bell**' was produced after hearing the stimuli, participants asked to press any key of the laptop. And for mixed both stimuli were presented.

10 readings of each stimulus were taken and their respective fastest RT's were recorded.

**Results:** Results are awaiting.

## **Prevalence of lower extremity injuries and associated risk factors in runners**

**Authors:** Neha Anil Doshi, Mehek Vishal Parekh, Krisha Paun

**Current Institute:** BVDU School of Physiotherapy, Pune.

### **Introduction:**

Sports activities and exercises are known to have a positive influence on a person's physical fitness, as well as to reduce the incidence of obesity, cardiovascular disease, and many other chronic health problems.

Running in the adult population is one of the most popular physical activities around the world. Various studies have reported on the prevalence and incidence of running injuries occurring in long distance runners during training or races. To help prevent such injuries it is necessary to summarise knowledge about potential risk factors.

### **Aim:**

The purpose of this study is to present an overview of prevalence of injury in lower extremity and associated potential risk factors of lower extremity running injuries using lower extremity functional scale.

### **Objective:**

Prevalence of lower extremity injury

Associated risk factors in runners

### **Methodology:**

Self made questionnaire along with LEFS was sent to recreational as well as elite runners recruited through social media and QS scanner asking for personal and training characteristics. Self-reported data from 40 questionnaires will be analyse and associated risk factors will be investigate.

### **Results:**

Results are expected to be display as soon as all the data will be gathered and analyse.

**Conclusion:** awaited

**Key words:** prevalence, lower extremity, LEFS, Running related injuries.



## **Correlation of Functional Movement Screening and Sports Anxiety Scores in Young Adult Football players: An observational Study**

**Authors:** Richa Jadhav, Abhishek Kulkarni, Riddhi Pawar, Saurabhi Purandare

**Current Institute:** BVDU School of Physiotherapy, Pune.

**Introduction:** Football is a globally renowned sport that boosts widespread popularity both in terms of active participation and enthusiastic spectatorship. In the context of adolescent football players recovering from acute injuries, understanding how Functional movement Screening (FMS) correlates with sports anxiety becomes crucial for tailoring effective rehabilitation strategies and optimizing the return-to-play process. Football players face the dual challenge of navigating acute injuries and the psychological aftermath that accompanies such setbacks. The sports anxiety scores, representing the psychological response to injury, encapsulate the emotional and cognitive aspects of an athlete's experience during rehabilitation. Need arises to find the correlation between functional movement screening and sports anxiety in adolescent football players recovering from acute injuries. Injuries not only have physical consequences but also impact athletes psychologically, leading to increased sports anxiety. Therefore, there is a need to explore and analyze the relationship between flexibility and sports anxiety in football players.

**Methods:** Permission was taken from concerned ethical committee and consent was taken from the subjects. An observational study was conducted on 35 football player selected on the basis of inclusion criteria & exclusion criteria. Mobility and stability was assessed using FMS and Competitive trait anxiety was assessed using Sports Anxiety questionnaire.

**Statistical Analysis:** All the data was collected and validate, analysis was carried out with the Instat software and MS Excel.

**Results:** Awaited

**Keywords:** Functional movement screening, Sports anxiety questionnaire, Football players, Acute injuries, Sports Psychology, Adolescent Football Players.

## **Comparison Of Muscle Energy Technique Versus Stretching For Glenohumeral Horizontal Abductors And External Rotators To Improve Glenohumeral Internal Rotation Deficit In District Level Badminton Players**

**Author:** Rabiya Sande

**Institute:** M.A Rangoonwala College of Physiotherapy and Research, Pune.

### **Introduction:**

Badminton, a high-paced and demanding racquet sport, often leads to GIRD among players due to repetitive overhead motions. GIRD, characterized by reduced internal rotation in the throwing shoulder is linked with musculoskeletal injuries in overhead players. This study compared the effects of Muscle Energy Technique (MET) and stretching on Glenohumeral Internal Rotation Deficit (GIRD) in district-level badminton players. athletes.

### **Methods/Procedure:**

Forty-four district-level badminton players participated, randomly assigned to MET or stretching groups. The four-week intervention included five sessions per week, targeting glenohumeral horizontal abductors and external rotators. The outcome measure was glenohumeral internal range of motion measured by the universal goniometer pre and post intervention.

### **Results:**

Both MET and stretching significantly improved Glenohumeral Internal Rotation Range of Motion ( $p < 0.05$ ). MET demonstrated notable enhancements, attributed to reflex relaxation, viscoelastic changes, and improved stretch tolerance. Isometric contractions in MET may contribute to increased muscle strength.

Stretching also showed significant improvements in GIRD, linked to elongation of muscle fibres and connective tissues. The study emphasized the time-dependent viscoelastic properties of tissues and the role of stretching in triggering microtears, leading to increased ROM.

### **Conclusion:**

The research concludes that MET and stretching are effective interventions for GIRD in district-level badminton players. MET, with its combination of muscle contraction, relaxation, and stretch, appears to be more clinically significant, potentially offering additional benefits in terms of muscle activation, strength, and control.

### **Keywords:**

Muscle Energy Technique, stretching, Glenohumeral Internal Rotation Deficit, badminton players, range of motion.

## **Case Report: The Effectiveness of Physical Therapy on a Volleyball Athlete with Distal Semimembranosus Muscle Tendon Injury and Lateral Posterior Horn Meniscus Injury**

The 30-year-old male volleyball athlete presented with left knee pain and declining performance. An MRI revealed a suspected partial tear in the distal end of the semimembranosus muscle (hamstring) and tendon, as well as in the lateral posterior horn of the meniscus, without involvement of the ACL and PCL. The management involved physiotherapy three times a week, specific exercise programs, and strength conditioning. Before the therapy, the patient could not play after two sets, but with Kinesio tape and chloroethyl spray, the condition improved, allowing the patient to play up to 3 sets. This case demonstrates that significant improvement can be achieved with scheduled physical therapy and supportive tools without surgical intervention.

The semimembranosus muscle is one of the three hamstring muscles and calf strain injuries in this muscle account for only 12% of total hamstring injuries. Calf strain distal and patellar tendon rupture in the semimembranosus muscle is rarely reported. The management of such injuries typically involves physiotherapy, which, in this case, resulted in significant improvement without the need for surgical intervention.

The uniqueness of this case lies in the successful management provided, which only involved scheduled physical therapy and supportive tools such as kinesio tape before training or competition, without the need for surgical intervention. The patient is still undergoing physical therapy with specific exercise programs and strength conditioning, showing significant daily improvement.

In summary, the case of the volleyball athlete with a partial tear in the semimembranosus muscle and tendon, as well as the meniscus, highlights the effectiveness of physiotherapy and supportive tools in managing such injuries without the necessity of surgical intervention. This approach has significantly improved the patient's condition and ability to participate in matches.

**Keywords:** Semimembranosus Muscle Tendon, Lateral Posterior Horn Meniscus, Hamstring, Physiotherapy, Volleyball Athlete.

