**SRINIVAS UNIVERSITY**

**Mangalore-575001, Karnataka (India)**

**RESEARCH CENTRE IN MUSCULOSKELETAL PAIN AND NEUROREHABILITATION**

**COLLEGE OF PHYSIOTHERAPY**

**SRINIVAS UNIVERSITY**



**Dr. S. Rajasekar**

The research centre in Musculoskeletal pain and Neurorehabilitation focuses on implementing best research with clinical expertise and patient values. Physical therapy, being the widely recognized health care profession has to upgrade its practice to remain alive in the era of scientific research. As the number of Physiotherapy trials and systematic reviews are increasing our main aim is to develop a robust evidence base to inform patient care. Physiotherapists are key players in the health care system today. They help in restoring and improving movements, keeping patients healthy and active thereby improving the quality of life. Besides it plays a crucial role in avoiding surgery and long term use of medications. Research centre is well designed and highly equipped to establish services to the mankind and inculcate the habit of sensitive and healing touch to the patients.

**OBJECTIVES:**

1. Create a preeminent centre for learning and discovery in rehabilitation science at the doctoral level
2. Research centre focuses on integration of implementing best research with clinical expertise and patient values
3. Possess a breadth of knowledge in the cardiopulmonary, musculoskeletal and sports or neuromuscular speciality areas as they relate to impairment, functional limitation and disability
4. Designed to advance the student’s abilities to independently develop and carry out research projects that strive to establish the scientific basis for the prevention, evaluation and treatment of impairments, functional limitations and disability.

# RESEARCH PUBLICATIONS:

# Acharya Upasana Gayathri, Ajay K, Rajasekar S, Samuel AJ. Reliability and validity of Kannada version of Victorian Institute of Sports Assessment for patellar tendinopathy (VISA-P-K) questionnaire. Journal of Clinical Orthopaedics and Trauma. 2018 August

1. Rajasekar S, Kumar A, Patel J, Ramprasad M, Samuel AJ. Does Kinesio taping correct exaggerated dynamic knee valgus? A randomized double blinded sham-controlled trial. Journal of Body work and Movement therapy. 2018 July;22:72-732.
2. Nair R, Rajasekar S, Abraham A, Samuel AJ. Awareness among Indian professional football players about injury prevention strategies: A national survey. Journal of Clinical Orthopaedics and Trauma.2018 March;9:76-79.
3. Jeyaganesh Vellaisamy, Rajeswari Muthusamy. A study to analyze the relationship between the decline of cognition and fine motor skills in elderly population. International Journal of Physiotherapy. 2018 August; 5(4): 145-148.
4. Rajasekar S, Bangera RK, Sekaran P. Inter-rater and intra-rater reliability of a movement control test in shoulder. Journal of Body work and Movement therapy. 2017 July;21:739-742.
5. **Shwetha S, Hrishikesh Yadav, Ranjith Anumasa, Makhecha Komal. Physical Therapy management in Myofascial pain syndrome of shoulder complex.** International Journal of Advanced Research. 2017 May;5:1957-1962.
6. Rajasekar S, Marchand AM. Fascial Manipulationfor persistent knee pain following ACL and meniscus repair. Journal of Body work and Movement therapy. 2017 April;21:452-458.
7. Ilona Gracie De Souza, Rathish M, Thrishala N. **Substantial aspects of balance in patients with Diabetic Neuropathy: A Physical Therapist’s perspective**. International Journal of Innovative Research in Medical Science in 2017 February;1:389-394.
8. **Shwetha S.**, Hrishikesh K, Ranjitha A, Komal M, Naga Sumanth G, Sateesh K. Physical therapy management in myofascial pain syndrome of shoulder complex. International Journal of Advanced Research. 2017 May;5(5):1957-62.
9. **N Mageswaran, Sharan, Nancy N.** A Study on effect Of the Lumbar Stabilization Exercises for improving the Endurance of Back Muscles in School Volleyball Players in an International Journal of current Research and Development. 2017 January;5:84-90.
10. N Mageswaran, E Prasad. Effectiveness of movement impairment correction on classified movement impairment syndromes in knee osteoarthritis. International Journal of Current Research and Development. 2016 July;4:202-213.
11. Girishchandra Shah Jalpa & Rajasekar Sannasi, Shah Sanket. Development and analysis of validity and reliability of the Kannada version of Oswestry Disability Index. Indian Journal of Rheumatology. 2016 April;11:91-96.
12. Allan Abraham, Rajasekar Sannasi, Rohit Nair. [Normative values for the functional movement screening in adolescent school aged children](https://www.researchgate.net/publication/272842782_Normative_values_for_the_functional_movement_screentm_in_adolescent_school_aged_children). International Journal of Sports Physical Therapy. 2015 February;10:29-36.

**CONFERENCES:**

1. National shoulder symposium was conducted on 6th July 2019



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**RESEARCH PROJECTS APPLIED:** NIL

**FACULTY DEVELOPMENT PROGRAMMES:** NIL

**PATENT WORKSHOPS:**

**2016**

1. A two day workshop on “ **Visceral Manipulation**” in the month of June 2016
2. A three day workshop on **Dynamic Neuromuscular stimulation** in the month of December 2016

**2017**

* 1. A one day workshop on **“Pulmonary Rehabilitation”**  in March 2017.
  2. A three day workshop on “**Viscerosomatic Manipulation**” in the month of November 2017.
  3. 2 day workshop on “**Research Methodology and Biostatistics**” in the month of January 2017.
  4. A one day workshop on “**Research Methodology and Biostatistics**” in the month of December 2017.

**2018**

1. International certificate course on “**Dynamic Neuromuscular Stabilization (DNS)**” Level 1 and 2 certified by Prague school in January 2018.
2. One day workshop was conducted by Dr. John Solomon, on the topic of interest **Vestibular Rehabilitation** in March 2018.

**2019**

1. A two day **IAP Pre-Conference workshop on “Level ‘A’ Kinetic Chain Activation technique (K-CAT)** , January 2019

2. A one day workshop was conducted on 08th September 2019 “ Basic life support” by Dr. Mageswaran.

**RESEARCH SCHOLARS TRAINING PROGRAMMES: NIL**

1. Dr. S. Rajasekar-
2. Dr. Sonali Srivastava
3. Dr. Ajay Kumar

**RESEARCH EQUIPMENTS:**

1. Virtual reality
2. Electromyography (EMG)
3. Electrodiagnosis (NCV)
4. Forceplate
5. Hand held dynamometer
6. Pulmonary function test monitor
7. Cardiopulmonary resuscitation simulator\
8. Pressure pain threshold algometer

**MAJOR RESEARCH FINDINGS:** NIL

**BOOKS AND CHAPTERS:** NIL

**COURSE WORK:**

**RESEARCH METHODOLOGY**

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| 1. | Unit 1: Introduction:   * Introduction to Biostatistics and Research Methodology, * Types of Variables and Scales of Measurements, * Measures of Central Tendency and Dispersion * Rate, Ratio, Proportion, Incidence and Prevalence. |
| 2. | Unit 2: Sampling:   * Random and Non-Random Sampling, * Various methods of Sampling – Simple Random, Stratified, Systematic, Cluster and Multistage * Sampling and Non-Sampling Errors and Methods of Minimizing these errors. |
| 3. | Unit 3: Basic Probability Distributions and Sampling Distributions:   * Concept of Probability and Probability Distribution. * Normal, Poisson and Binomial distributions, Parameters and Application. * Concept of Sampling Distributions. * Standard Error and Confidence Intervals, Skewness and Kurtosis. |
| 4. | Unit 4: Tests of Significance:   * Basics of Testing of Hypothesis :Null and Alternate Hypothesis * Type I and Type II Errors, * Level of Significance and Power of the Test, P value. * Tests of Significance (Parametric) * T-test (Paired and Unpaired) * Chi square test and test of Proportion * One way analysis of Variance * Repeated measures Analysis of Variance * Tests of Significance (Non-Parametric) * Mann-Whitney U Test, Wilcoxon test, * Kruskal-Wallis Analysis of Variance. Friedman’s Analysis of variance. |
| 5. | Unit 5: Correlation & Regression:   * Simple Correlation – Pearson’s and Spearman’s; * Testing The Significance of Correlation Coefficient, * Linear and Multiple Regressions. |
| 6. | Unit 6: Sample Size Determination:  General Concept  Sample Size for Estimating Mean and Proportion,  Testing of Difference in Means and Proportions of Two Groups |
| 7. | Unit 7: Study Designs  Descriptive Epidemiological Methods  Case Series Analysis and Prevalence Studies  Analytical Epidemiological Methods  Case Control and Cohort Studies.  Clinical trials/Intervention Studies  Odds Ratio and Relative Risk  Stratified Analysis |
| 8. | Unit 8: Multivariate Analysis:  Concept of Multivariate Analysis,  Introduction to Logistic Regression and Survival Analysis |
| 9. | Unit 9: Reliability and Validity Evaluation of Diagnostic Tests. |
| 10. | Unit 10: Format of Scientific Documents.  Structure of Research Protocol  Structure of Thesis/Research Report  Formats of Reporting in Scientific Journals  Systematic Review and Meta-analysis |

**REFERENCE:**

1. Foundations of Clinical Research by Leslie G. Portney.