



Dr. Senthil Kumaran Dharmaraj

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Time at UoN: Since 2024

Marital Status: Married.....

Academic Qualifications

FAIMER Fellowship (Leadership in Interprofessional Education), Manipal Academy of Higher Education, Manipal, India, 2019, Designing an Interprofessional Educational Module for Stroke Rehabilitation

Doctor of Philosophy (PhD), Manipal Academy of Higher Education, Manipal, India, 2015, Effectiveness and feasibility of a task and context-based exercise program in stroke patients: a randomized controlled trial

Master of Physiotherapy (MPT) (Neurosciences and Adult Neurology) , Manipal Academy of Higher Education, Manipal, India, 2006, Effectiveness of 'Stepping-in-Place' on Gait in Patients with chronic hemiplegia: a randomized clinical trial

Bachelor of Physiotherapy (BPT) , The Tamil Nadu Dr M.G.R Medical University , Chennai, India, 1998

Teaching Activities

Community Health Promotion, RSSE502

Rehabilitation Medicine, RSPT405

Neurosciences (Neuro-pathophysiology), RSOT204/RSPT204

Research Activities

- *Research Interests*

Stroke rehabilitation and recovery

Virtual reality and game-based rehabilitation

Physical activity

Kinematic and kinetic analysis

Action observation therapy

ICF framework

Interprofessional education

- *Conference Presentations*

Upper limb movement capacity following a game-based rehabilitation compared to task-based training in people with stroke: secondary analysis from a randomized clinical trial, 16th World Stroke Congress, Abu Dhabi, United Arab Emirates, 23/10/2024 - 26/10/2024

Keynote lecture on ``Extended reality (XR) Game-based Rehabilitation Post Stroke``, International Student Physiotherapy Conference 2023, Sharjah, UAE, 02/11/2023

Game based rehabilitation after Stroke, Mangalore PhysioCon 2023 , Mangalore, India, 08/09/2023

XR and Rehabilitation, Extended Reality and Healthcare -New Frontiers 2023, Manipal, India , 21/07/2023

e-Poster Presentation on "Effect Of Game-Based Rehabilitation Program Compared To Task-Based Training On Upper Limb Motor Function In People With Stroke: Preliminary Findings", World Physiotherapy Congress 2023, Dubai, UAE, 02/06/2023

Oral Presentation on "Effects Of Game-Based Rehabilitation Interventions On Upper Limb Function And Activity Following Acute And Sub-Acute Stroke: A Systematic Review And Meta-Analysis" , 14th World Stroke Congress, Singapore , 26/10/2022

Effects of a novel game-based arm rehabilitation device, the ArmAble, on improving upper limb function in people with stroke, 14th International Conference on Developments in eSystems Engineering (DeSE) 2021, Sharjah, UAE, 07/12/2021

Does a comprehensive physical activity promotion program help to improve physical activity levels and quality of life in community-dwelling adults with stroke - Early results from a cluster RCT, 9th Annual Conference of Indian Federation of Neurorehabilitation (IFNRCON 2021), Mumbai, India, 10/04/2021

Does action observation of error movement condition influence mirror neuron system and upper limb muscle activity in patients with stroke?, World Confederation of Physical Therapy (WCPT) Congress – Virtual, Dubai, UAE, 09/04/2021

Do dynamometric grip and pinch strengths correlate with upper limb capacity measured using the action research arm test in stroke survivors?, 7th International Conference on Neurology and Epidemiology (ICNE) - Virtual, 19/03/2021

Performance of prediction models targeting neurophysiological, neuroimaging and biomechanical outcomes for prognosticating upper extremity motor recovery following stroke- A systematic review, joint Virtual conference of World Stroke Organization and European Stroke Organization (2020), 07/11/2020

Measures of users' satisfaction with game-based rehabilitation in people with neurological disorders: A narrative review, Interdisciplinary Conference on Health and Technical Research, Manipal, India, 30/10/2020

Adaptive sports for improving physical activity among community-dwelling adults with stroke in a developing country: A mixed-method study, 11th World Congress for Neurorehabilitation, Virtual, 7/10/2020

Development and feasibility of adaptive sports for promoting physical activity in community-dwelling stroke survivors, 5th Annual Conference of Society of Indian Physiotherapists, Mumbai, India, 10/01/2020

Upper Limb Muscle Activity and EEG Functional Connectivity during Action Observation of Reaching Task in Stroke Survivors, 7th Annual Conference of Indian Federation of Neurorehabilitation, Mumbai, India, 19/04/2019

Upper limb muscle activity during action observation of reaching task in stroke survivors -A pilot study, 4th Annual Conference of Society of Indian physiotherapists , New Delhi, India, 15/02/2019

Action observation therapy: Efficacy in upper limb rehabilitation following stroke: A review, International conference on the essentials of stroke care, Kerala, India, 17/11/2018

Development of a Physical Activity Program for Stroke Survivors Living in Community, 10th World Congress for Neurorehabilitation (WFNR), Mumbai, India, 08/02/2018

Effect of a Task And Context Based Exercise Program (TCEP) on improving walking function in Community Dwelling Stroke Survivors: A Randomized Controlled Trial, 10th World Stroke Congress (WSC), Hyderabad, India, 26/10/2016

Effect of structured neonatal physiotherapy intervention on neurobehavior of moderate to late preterm infants—a randomized controlled trial, World Confederation for Physical Therapy (WCPT) Congress 2015, Singapore, 01/05/2015

Community Participation among Stroke Survivors in Rural India: A Qualitative Study, Asia Pacific Stroke Conference (APSC 2014), Taipei, Taiwan, 12/09/2014

- Conference Attendance

16th World Stroke Congress, Abu Dhabi, United Arab Emirates, 23/10/2024 - 26/10/2024

International Student Physiotherapy Conference 2023, Sharjah, 02/11/2023

World Association for Photobiomodulation Therapy Congress (WALTCon) 2023 , Manipal, India, 14/09/2023

World Physiotherapy Congress 2023, Dubai, UAE , 02/06/2023

14th World Stroke Congress , Singapore , 26/10/2022

10th Annual Conference of Indian Federation of Neurorehabilitation (Virtual IFNRCON 2022), Virtual, 22/04/2022

14th International Conference on Developments in eSystems Engineering (DeSE) 2021 , Virtual, 07/12/2021

World Confederation of Physical Therapy (WCPT) Congress, Virtual, 09/04/2021

Indo-Canadian perspectives on the application of United Nations Convention of Rights of Persons with Disabilities in different policy domains, Manipal, India, 11/03/2021

7th Annual Conference of Indian Federation of Neurorehabilitation , Mumbai, India, 19/04/2019

9th Annual Conference of Indian Federation of Neurorehabilitation (IFNRCON 2021), Virtual, 10/04/2019

10th World Congress for Neurorehabilitation (WFNR) , Mumbai, India , 08/02/2018

5th Annual conference of Indian Federation of Neurorehabilitation (IFNRCON 2017), Mumbai, India , 31/03/2017

10th World Stroke Congress (WSC), Hyderabad, India, 26/10/2016

Asia Pacific Stroke Conference (APSC 2014), Taipei, Taiwan, 12/09/2014

Asia Pacific Geriatric Conference (APGC 2012), Hong Kong , 21/10/2012

International congress on Neurology and Rehabilitation (ICNR 2012), Chennai, India, 27/01/2012

46th Annual Conference of the Indian Association of the Physiotherapists, Dehradun, India , 10/01/2008

International Spine and Spine Injuries Conference (ISSICON 2006), New Delhi, India, 03/03/2006

- Publications

Article:

1. 2024 [Poojari, D. P., Umakanth, S., Maiya, G. A., Rao, B. K., Khurana, S., Kumaran D, S., Attal, R., & Brien, M. \(2024\). Effect of family-centered care interventions on well-being of caregivers of children with cerebral palsy: a systematic review. , F1000Research, 12, 790](#)
2. 2024 [Ali, A. S., Kumaran, D. S., Unni, A., Sardesai, S., Prabhu, V., Nirmal, P., Pai, A. R., Guddattu, V., & Arumugam, A. \(2024\). Effectiveness of an Intensive, Functional, and Gamified Rehabilitation Program on Upper Limb Function in People With Stroke \(EnterTain\): A Multicenter Randomized Clinical Trial. , Neurorehabilitation and neural repair, 38\(4\), 243-256](#)
3. 2024 [Arumugam, A., Alsaafin, N., Shalash, R. J., Qadah, R. M., Al-Sharman, A., Moustafa, I. M., Shousha, T. M., Kumaran, S. D., Migliorini, F., & Maffulli, N. \(2024\). Concurrent validity between self-reported International Physical Activity Questionnaire Short Form and Fibion accelerometer data among young adults in the UAE. , European journal of medical research, 29\(1\), 426.](#)
4. 2023 [Arumugam, A., Phillips, L. R., Moore, A., Kumaran, S. D., Sampath, K. K., Migliorini, F., Maffulli, N., Ranganadhababu, B. N., Hegazy, F., & Botto-van Benden, A. \(2023\). Patient and public involvement in research: a review of practical resources for young investigators. , BMC rheumatology, 7\(1\), 2](#)
5. 2023 [Shelke, A., B, A. P., M, G. B., Kumaran, S. D., & G, P. R. \(2023\). Immediate effect of craniocervical flexion exercise and Mulligan mobilisation in patients with mechanical neck pain - A randomised clinical trial. , Hong Kong physiotherapy journal : official publication of the Hong Kong Physiotherapy Association Limited = Wu li chih liao, 43\(2\), 137-147.](#)
6. 2023 [Sardesai, S., Solomon, J. M., Ali, A. S., Arumugam, A., Nazareth, E. D., Pai, A. S.,](#)

- [Guddattu, V., & Kumaran D, S. \(2023\). Do kinematic measures, added to clinical measures, better predict upper extremity motor impairments at three months post-stroke?.](#) , Journal of stroke and cerebrovascular diseases : the official journal of National Stroke Association, 32(8), 107245.
7. 2023 [Sardesai, S., Solomon M, J., Arumugam, A., Dylan Nazareth, E., R Pai, A., & Kumaran D, S. \(2023\). Upper extremity kinematics of a 3D reach-to-grasp-to-mouth task in sub-acute stroke survivors in comparison with healthy controls.](#) , F1000Research, 12, 779.
8. 2023 [GBD 2019 Meningitis Antimicrobial Resistance Collaborators \(2023\). Global, regional, and national burden of meningitis and its aetiologies, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019.](#) , The Lancet. Neurology, 22(8), 685-711.
9. 2023 [GBD Spinal Cord Injuries Collaborators \(2023\). Global, regional, and national burden of spinal cord injury, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019.](#) , The Lancet. Neurology, 22(11), 1026-1047
10. 2022 [Nayak, P., Kumaran D, S., Mahmood, A., Manikandan, N., Unnikrishnan, B., & Solomon, J. M. \(2022\). Feasibility of context-specific activities for improving physical activity levels among Indian adults with stroke.](#) , European Journal of Physiotherapy, 24(5), 280-286.
11. 2022 [Mahmood, A., Deshmukh, A., Natarajan, M., Marsden, D., Vyslysel, G., Padickaparambil, S., Ts, S., Direito, A., Kumaran, S., N, G., Sachdev, H., Kumar Veluswamy, S., Karthikbabu, S., Unnikrishnan, B., English, C., & Solomon, J. M. \(2022\). Development of strategies to support home-based exercise adherence after stroke: a Delphi consensus.](#) , BMJ open, 12(1), e055946.
12. 2022 [Sardesai, S., Solomon M, J., Arumugam, A., Guddattu, V., Gorthi, S. P., Pai, A., & Kumaran D, S. \(2022\). Predicting post-stroke motor recovery of upper extremity using clinical variables and performance assays: A prospective cohort study protocol.](#) , Physiotherapy research international : the journal for researchers and clinicians in physical therapy, 27(2), e1937.
13. 2022 [Chaudhary, C., John, S., Kumaran D, S., Guddattu, V., & Krishnan, G. \(2022\). Technological interventions in stuttering: A systematic review.](#) , Technology and Disability, 34(4), 201-222.
14. 2021 [Nayak, P., Kumaran, S. D., Babu, A. S., Maiya, A. G., & Solomon, J. M. \(2021\). Levels of physical activity and quality of life among community-dwelling adults with stroke in a developing country.](#) , European Journal of Physiotherapy, 23(3), 165-170.
15. 2021 [Ali A, S., Arumugam, A., Gururaj, S., & Kumaran D, S. \(2021\). Effects of game-](#)

[based rehabilitation on upper limb function in adults within the first six months following stroke: protocol for a systematic review and meta-analysis.](#), JBI evidence synthesis, 19(8), 1954-1963.

16. 2021 [Sulfikar Ali, A., Arumugam, A., & Kumaran D, S. \(2021\). Effectiveness of an intensive, functional, gamified Rehabilitation program in improving upper limb motor function in people with stroke: A protocol of the EnteRtain randomized clinical trial.](#), Contemporary clinical trials, 105, 106381.

17. 2021 [Shetty, V., Sulfikar Ali, A., Natarajan, M., & Kumaran D, S. \(2021\). Interventions to improve upper extremity reaching function in persons with stroke: a scoping review protocol.](#), Physical Therapy Reviews, 26(5), 398-402.

18. 2021 [Khurana, S., Rao, B. K., Lewis, L. E., Kumaran, S. D., Kamath, A., Einspieler, C., & Dusing, S. C. \(2021\). Neonatal PT Improves Neurobehavior and General Movements in Moderate to Late Preterm Infants Born in India: An RCT.](#), Pediatric physical therapy : the official publication of the Section on Pediatrics of the American Physical Therapy Association, 33(4), 208-216.

19. 2021 [Nayak, P., Mahmood, A., Kumaran D, S., Natarajan, M., Unnikrishnan, B., & Solomon, J. M. \(2021\). Adaptive sports for promoting physical activity in community-dwelling adults with stroke: A feasibility study.](#), Journal of bodywork and movement therapies, 28, 341-347.

20. 2021 [Kumaran, D. S., Swathi, G. A., Raja, R. A., Ali, A. S., Nayak, N., & Arumugam, A. \(2021, December\). Effects of a Novel Game-Based Arm Rehabilitation Device, the ArmAble, on Improving Upper Limb Function in People With Stroke.](#), In 2021 14th International Conference on Developments in eSystems Engineering (DeSE) (pp. 259-264). IEEE.

21. 2020 [Sardesai, S., Arumugam, A., Durairaj, S., Guddattu, V., Solomon, J. M., Gorthi, S. P., & Kumaran, S. D. \(2020\). Performance of neurophysiological, neuroimaging, biomechanical and clinical predictors and prediction models of upper extremity motor recovery following stroke-a systematic review protocol.](#), Physical Therapy Reviews, 25(2), 73-80

22. 2020 [D'souza, J., Natarajan, D. M., & Kumaran D, D. S. \(2020\). Does the Environment Cause Changes in Hemiparetic Lower Limb Muscle Activity and Gait Velocity During Walking in Stroke Survivors?.](#), Journal of stroke and cerebrovascular diseases : the official journal of National Stroke Association, 29(10), 105174

23. 2019 [Arumugam, A., Chandrasekaran, B., & Dharmaraj, S. K. \(2019\). Letter to the editor concerning the assessment of range and quality of neck movement using a smartphone-based application.](#), Musculoskeletal science & practice, 43, e1.

24. 2017 [Davis F, Kumaran D S, Nair S, Vijayamuniraj J. Physical fitness training for people with spinal cord injury.](#), Cochrane Database Syst Rev. 2017 Mar 7;2017(3):CD007955. doi: 10.1002/14651858.CD007955.pub2. PMCID: PMC6464204
25. 2017 [Chandrasekaran B, Arumugam A, Davis F, Kumaran D S, Sanathombi Devi R. Resistance exercise training for hypertension.](#), Cochrane Database Syst Rev. 2017 Sep 13;2017(9):CD008822. doi: 10.1002/14651858.CD008822.pub2. PMCID: PMC6483760.
26. 2017 [Saxena, S., Rao, B. K., & Senthil, K. D. \(2017\). Short-term balance training with computer-based feedback in children with cerebral palsy: A feasibility and pilot randomized trial.](#), Developmental neurorehabilitation, 20(3), 115–120.
27. 2017 [Mohapatra, S., Nandakumar, G., & Dharmaraj, S. K. \(2017\). Barriers Encountered by Accredited Social Health Activists \(ASHA\) in Arthritis Rehabilitation: A Qualitative Study.](#), Journal of clinical and diagnostic research : JCDR, 11(3), YC01–YC04.
28. 2017 [Quadros, X. H., Rao, S., & Dharmaraj, S. K. \(2017\). Additional Virtual Reality Sitting Balance Training Using Xbox Kinect™ in Patients with Neurological Disorders: A Pilot Study.](#), Journal of Clinical & Diagnostic Research, 11(10).
29. 2016 [Saxena, S., Kumaran, S., & Rao, B. K. \(2016\). Energy expenditure during standing in children with cerebral palsy: A brief report1.](#), Journal of pediatric rehabilitation medicine, 9(3), 241–245.
30. 2016 [Khurana, S., Rao, B. K., Lewis, L. E., Bhat, R., Purkayastha, J., Kamath, A., & Dharmaraj, S. K. \(2016\). Neurobehavioral Profile of Moderate to Late Preterm Infants Admitted in a Tertiary Care Centre in South India.](#), Online Journal of Health and Allied Sciences, 15(2)
31. 2016 [Khurana, S., Rao, B. K., Lewis, L. E., Bhat, R., Purkayastha, J., Kamath, A., & Dharmaraj, S. K. \(2016\). Development and Validation of Educational Leaflet for Caregivers of Preterm Infants.](#), Journal of clinical and diagnostic research : JCDR, 10(7), YC01–YC4.
32. 2015 [Dixit, S., Maiya, A., Shasthry, B. A., Kumaran, D. S., & Guddattu, V. \(2015\). Postural sway in diabetic peripheral neuropathy among Indian elderly.](#), The Indian journal of medical research, 142(6), 713–720.
33. 2014 [Saxena, S., Rao, B. K., & Kumaran, S. \(2014\). Analysis of postural stability in children with cerebral palsy and children with typical development: an observational study.](#), Pediatric physical therapy : the official publication of the Section on Pediatrics of the American Physical Therapy Association, 26(3), 325–330.
34. 2013 [Samuel, A., Solomon, J., Senthilkumaran, D., & D'souza, N. \(2013\). A Report of Body weight Supported Overground Training in Acute Traumatic Central Cord Syndrome.](#), Indian Journal Of Physiotherapy & Occupational Therapy-An International Journal, 7(1),

96-98.

35. 2011 [Gupta, S., Rao, B. K., & S D, K. \(2011\). Effect of strength and balance training in children with Down`s syndrome: a randomized controlled trial.](#), Clinical rehabilitation, 25(5), 425-432.

36. 2011 [Narekuli, A., Raja, K., & Kumaran, D. S. \(2011\). Impact of physical therapy on burden of caregivers of individuals with functional disability.](#), Disability, CBR & Inclusive Development, 22(1), 108-119.

Conference or Workshop:

1. 2024 [Girish N, Kumaran S. Community Participation Among Stroke Survivors in Rural India: A Qualitative Study: PF-18.](#), Abstracts of the Annual Conference of the Asia Pacific Stroke Organization (APSO). Taipei, Taiwan, September 12-14, 2014: Abstracts Cerebrovasc Dis (2014) 38 (Suppl. 1): 1-114.

2. 2023 [Ali, A Sulikar; Kumaran D, Senthil; Arumugam, Ashokan. Day III: Saturday, March 25, 2023; 9.00 AM Agenda. AB No 43 User satisfaction with a game-based rehabilitation program in people with stroke A pilot study.](#), Journal of Society of Indian Physiotherapists 7(1):p 83, Jan-Jun 2023. | DOI: 10.4103/2456-7787.379307

3. 2022 [Sardesai, S., Solomon, J., Arumugam, A., Pai, A., Ravishankar, N., & Kumaran, D. \(2022, October\). Do kinematic variables have an added advantage over clinical variables in predicting upper extremity motor recovery post-stroke?](#), 14th World Stroke Congress, Singapore, 26-29 October 2022. International Journal of Stroke. 2022;17(3_suppl): pp. 74-74.doi:10.1177/17474930221125973.

4. 2022 [Kumaran, S. D., Sardesai, S., Nazareth, E., & Solomon, J. \(2022, October\). Upper Extremity Kinematics Of A 3d Simulated Drinking Task In Acute To Sub-Acute Stroke Survivors In Comparison With Normal Individuals.](#), 14th World Stroke Congress, Singapore, 26-29 October 2022. International Journal of Stroke. 2022;17(3_suppl):3-288.doi:10.1177/17474930221125973.

5. 2022 [Ali, S. A., Gururaj, S., Arumugam, A., & Kumaran, S. D. \(2022, October\). Effects Of Game-Based Rehabilitation Interventions On Upper Limb Function And Activity Following Acute And Sub-Acute Stroke: A Systematic Review And Meta-Analysis.](#), 14th World Stroke Congress, Singapore, 26-29 October 2022. International Journal of Stroke. 2022;17(3_suppl):3-288.doi:10.1177/17474930221125973.

6. 2022 [Sardesai, Sanjukta; Solomon, John M; Nazareth, Elton; Kumaran, Senthil D. Stroke Rehabilitation: AB No. 124. Do Kinematic variables have an added advantage over clinical variables in Predicting Upper Extremity Motor Recovery Post-Stroke?.](#), Journal of Society of Indian Physiotherapists 6(2):p 76, Jul-Dec 2022. | DOI: 10.4103/2456-7787.361075.

7. 2021 [Nayak P, Kumaran D, Unnikrishnan B, Solomon J. Physical Activity Promotion in Challenging Times-Development and Testing the Effectiveness of a Novel Physical Activity Promotion Program Among Community-Dwelling Stroke Survivors.](#), Cerebrovascular Diseases 50 (SUPPL 1, pp 87) 2021.
8. 2020 [S. Sardesai., S. Durairaj., A. Arumugam., V. Guddattu., J. Solomon., S. Gorthi., and S. Kumaran. \(2020, November\). Performance of prediction models or predictors targeting neurophysiological, neuroimaging and biomechanical outcomes for prognosticating upper extremity motor recovery following stroke – a systematic review.](#), International Journal of Stroke, 15(1_suppl), pp. 646-646. <https://doi.org/10.1177/17474930209633>
9. 2020 [Nayak, P., Solomon, J., & D, SK. \(2020, November\). Are context-specific activities feasible for improving physical activity among community-dwelling stroke survivors in India?.](#), ESO-WSO 2020 joint meeting abstracts. International Journal of Stroke, 15(1_suppl), pp. 264-264. <https://doi.org/10.1177/1747493020963387>
10. 2020 [Manikandan, N., D`Souza, J., & D, SK. \(2020, November\). Does Variable Dimensions In Real-Life Environment Influence Walking Speed Of Stroke Survivors?.](#), ESO-WSO 2020 joint meeting abstracts. International Journal of Stroke, 15(1_suppl), pp. 260-260. <https://doi.org/10.1177/1747493020963387>.
11. 2019 [Khurana, S., Rao, B., Senthil, K., Lewis, L., Kamath, A., & Dusing, S. \(2019\). Effect of structured neonatal physical therapy \(SNP\) intervention on neurobehavior and quality of general movements in moderate to late preterm \(MLP\) infants: TP-SP06. \(2019\),](#) Scientific Posters. Dev Med Child Neurol, 61: pp 211-211. <https://doi.org/10.1111/dmcn.14354>.
12. 2018 [Solomon JM, Rajagopalan V, Sankar AM, Kumaran DS, Natarajan M. Development of a Physical Activity Program for Stroke Survivors Living in Community.](#), WCNR 2018 Poster Abstracts. Neurorehabilitation and Neural Repair 2018 32:4-5, 363-538.
13. 2018 [Biswas A, Manikandan N, Kumaran DS. Correlation of Muscle Activity During Trunk Training Activities with Trunk Performance in Stroke Survivors.](#), WCNR 2018 Poster Abstracts. Neurorehabilitation and Neural Repair 2018 32:4-5, 363-538.
14. 2018 [Lalakia PI, Kumaran DS, Ramachandran S. Influence of Ankle Loading on Standing Postural Control and Lower Limb Muscle Activation in Persons with Stroke.](#), WCNR 2018 Poster Abstracts. Neurorehabilitation and Neural Repair 2018 32:4-5, 363-538.
15. 2018 [Asha G, Solomon J, Kumaran DS. Effect of Mirror Therapy on Lower Extremity Muscle Activation in Patients with Stroke.](#), WCNR 2018 Poster Abstracts. Neurorehabilitation and Neural Repair 2018 32:4-5, 363-538.
16. 2018 [Doshi DB, Kumaran DS, Manikandan N. Effect of Observation with Intent to Imitate Therapy on Upper Limb Muscle Activation In Patients with Stroke- Randomized Controlled](#)

- [Trial.](#), WCNR 2018 Poster Abstracts. Neurorehabilitation and Neural Repair 2018 32:4-5, 363-538.
17. 2018 [Kumaran DS, Rao BK, Rao SN, Kamath A. Patient's Perception of Problems in Body Structure/Function, Activity and Participation and Contextual Factors Following Stroke in India.](#), WCNR 2018 Poster Abstracts. Neurorehabilitation and Neural Repair 2018 32:4-5, 363-538.
18. 2016 [Quadros, X., Solomon, J. M., Kumaran, S. D., Levin, M. F., & Archambault, P. S. \(2016, October\). Effect Of Kinect Based Virtual Reality Training On Sitting And Reaching In Patients With Stroke.](#), Abstracts for the 10th World Stroke Congress, 2016. International Journal of Stroke 2016 11:3_suppl, 4-288.
19. 2016 [Nayak, P., Kumaran, S. D., Babu, A. S., Maiya, A. G., & Solomon, M. J. \(2016, October\). Physical activity in stroke survivors living in coastal karnatak.](#), Abstracts for the 10th World Stroke Congress, 2016. International Journal of Stroke 2016 11:3_suppl, 4-288.
20. 2016 [Kumaran, S. D., Rao, B. K., Rao, S. N., & Kamath, A. \(2016, October\). Effect of a task and context based exercise program \(TCEP\) on improving walking function in community dwelling stroke survivors: a randomized controlled trial.](#), Abstracts for the 10th World Stroke Congress, 2016. International Journal of Stroke 2016 11:3_suppl, 4-288.
21. 2015 [Khurana, S., Rao, B. K., Lewis, L. E., Kumaran, D. S., & Kamath, A. \(2015\). Effect of structured neonatal physiotherapy intervention on neurobehavior of moderate to late preterm infants—a randomized controlled trial.](#), Physiotherapy, 101, e745.
22. 2014 [Kumaran, D. S., Rao, B. K., & Rao, S. N. \(2014, September\). Effectiveness of task based exercise program using ICF on quality of life in stroke patients. PF-17.](#), Abstracts of the Annual Conference of the Asia Pacific Stroke Organization (APSO). Taipei, Taiwan, September 12-14, 2014: Abstracts Cerebrovasc Dis (2014) 38 (Suppl. 1): 1-114.
23. 2013 [Mohapatra S, Kumaran SD, Girish N, Agrawal PR. Educating patients with arthritis: Experiences of accredited social health activists in rural India. 2013.](#), Proceedings of the Stride'13, International Journal of Pharma and Bio Sciences, p. 83.
24. 2012 [Mayya, A., Shastry, B. A., Kumaran, S. D., & Guddattu, V. \(2012\). Postural Stability in Subjects with Diabetic Peripheral Neuropathy.](#), 72nd Scientific Sessions Abstract Book, the June 2012 supplement to the Journal Diabetes, 1-2.

Faculty Administrative Experience

2022 - 2024: Member, Institutional Innovation & Entrepreneurship cell - Manipal College of Health Professions, Manipal Academy of Higher Education, Manipal, India

2018 - 2024: Chairperson, Quality and Compliance Committee - Manipal College of Health Professions, Manipal Academy of Higher Education, Manipal, India

2018 - 2024: Coordinator, Internal Quality Assurance Cell - Manipal College of Health Professions, Manipal Academy of Higher Education, Manipal, India

2016 - 2018: Coordinator, Student Welfare Committee - Manipal College of Health Professions, Manipal Academy of Higher Education, Manipal, India

2016 - 2018: Faculty Coordinator – MCHP - Voluntary Services Organization, Manipal Academy of Higher Education, Manipal, India

Community Services

23/02/2010: Outreach camp on Community Based Stroke Rehabilitation conducted by Department of Physiotherapy, Manipal College of Allied Health Sciences, Manipal University, Manipal, India in association with Udyavara Grama Panchayat at Udyavara Village, Udupi, Karnataka , India

31/01/2009: Camp conducted by Department of Physiotherapy, Manipal College of Allied Health Sciences, Manipal University, Manipal, India at T.M.A.Pai Rotary Hospital, Karkala, Karnataka, India

11/01/2009: Community Health Screening and Dysfunction Survey conducted by Department of Physiotherapy, Manipal College of Allied Health Sciences, Manipal University, Manipal, India in association with Udyavara Grama Panchayat and Lions Club Udupi Prakrathi at Udyavara Village, Udupi, Karnataka, India

12/12/2008: Camp conducted by Department of Physiotherapy, Manipal College of Allied Health Sciences, Manipal University, Manipal, India at T.M.A.Pai Hospital, Udupi, Karnataka, India

01/10/2008: Geriatric Camp conducted by Department of Physiotherapy, Manipal College of Allied Health Sciences, Manipal University, Manipal, India in view of celebrating World Geriatric Day held at Milagres School Premises, Kallianpur, Udupi, Karnataka, India

Consultancy Activities

Clinical advisor, BeAble Health Pvt Ltd, Centre for Healthcare Entrepreneurship, IIT Hyderabad, Kandi, Sangareddy, Telangana 502285, March 2018

Membership in Professional Bodies

2024-Present: World Stroke Organisation (WSO)

2018-Present: Society for Indian Physiotherapists (SIP)

2017-Present: Indian Federation of Neurorehabilitation (IFNR)

2015-2018: Neurodevelopmental Therapy Association (NDT Certified)

2002-Present: The Indian Association of Physiotherapists (IAP)

Award and Recognitions

2023 'Significant contribution award' for contributions in physiotherapy for the benefit of society, Scintilla 2023 National Physiotherapy Conference, JDT Islam College of Physiotherapy

2023 World Physiotherapy Congress 2023 Bursary Programme Award Recipient , World Physiotherapy, Dubai, UAE

2022 Effectiveness of an intensive, functional, gamified Rehabilitation program on upper limb motor function in people with stroke: A randomized clinical trial (EnteRtain Trial) - Society for Indian Physiotherapists (Research Grant), India

2022 Clinical and kinematic measures for predicting upper extremity recovery in stroke survivors - Indian Association of Physiotherapists (Research Grant), India

2022 Role of biomimetic control mechanisms in game-based rehabilitation on upper limb motor function in patients with stroke: Pilot randomized control trial - United State-India Science and Technology Endowment Fund (USISTEF) (Industry Grant)

2022 Home-based Gamified, Intensive, and Functional Tele-rehabilitation (Home-GIFT) device to improve Upper Limb function following Stroke - Department of Science and Technology (DST) BioHub (Research Grant), India

2021 Clinical and kinematic measures for predicting upper extremity recovery in stroke survivors - Society for Indian Physiotherapists (Research Grant), India

2021 Effectiveness of an intensive, functional, gamified Rehabilitation program on upper limb motor function in people with stroke: A randomized clinical trial (EnteRtain Trial) - BeAble Health Pvt Ltd (Industry Grant), India

2019 Development and feasibility of adaptive sports for promoting physical activity in community-dwelling stroke survivors - Society for Indian Physiotherapists (Research Grant), India

2019 iPitch Seed Investment Award for Project Innovation, Unconvention 2019, Villgro, Bengaluru, India

2018 Influence of environmental dimensions on lower limb muscular activity in ambulatory stroke survivors - Society for Indian Physiotherapists (Research Grant), India

2018 ARM-ABLE: An interactive arm training rehabilitative device. Fun therapy, Better recovery - BIRAC-BIG (Industry Grant), India

2018 Best Paper Prize (Senior Category), 46th Annual Conference of the Indian Association of Physiotherapists, Dehradun, India

2018 Professional contribution award, The Oxford College of Physiotherapy, Bangalore, India

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