#### CONTACT

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### **RESIDENTIAL ADDRESS**

#946, 37th cross, 29th main Poornapragna layout, Uttarahalli, Bengaluru, Karnataka, India, 560061

#### **RESEARCH INTERESTS**

Brain Stimulation- transcranial electrical stimulation Neurobiology of psychiatric disorders Psychotropics - response, resistance and adverse effects

#### SCIENTIFIC PUBLICATIONS

Book Chapters: 7 Peer-reviewed publications: 74 Pre-prints: 2

#### **AFFILIATIONS:**

 Life Fellow of Indian Psychiatric Society (FIPS) (1906802019)
Member of IPS-South zone, Central zone and East zone
Member of IPS-Karnataka Chapter & Jharkhand Chapter
Fellow of Indian Association of Biological Psychiatry (FIABP)
Member of National Academy of Medical sciences (MNAMS)

## CURRICULUM VITAE: DR. SREERAJ V S

Assistant Professor, Clinical Research Centre for Neuromodulation in Psychiatry, DEPARTMENT OF PSYCHIATRY, NIMHANS

#### **EDUCATION**

# Post-Doctoral fellowship (PDF) in Clinical neurosciences and therapeutics in Schizophrenia

2015-2016

National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru

# Diplomate of National Board (DNB) (Psychiatry) 2012-2014

Institute of Mental Health and Hospital (IMHH), Agra [National Board of Examinations]

#### Diploma in Psychological Medicine (DPM)

2009-2011

Central Institute of Psychiatry, Ranchi [Ranchi University]

# Bachelor of Medicine & Bachelor of Surgery (MBBS) 2002-2008

Sri Siddhartha Medical College, Tumkur [Rajiv Gandhi University of Health Sciences, Bangalore]

### WORK EXPERIENCE

#### **Assistant Professor: 11 months**

Nov, 2020- Till Date: CRC in neuromodulation, Dept of Psychiatry, NIMHANS, Bengaluru

# Assistant Professor/Clinician Scientist: 2 years 6 months 2018- 2020: ADBS, Dept of Psychiatry, NIMHANS, Bengaluru

#### Post DNB-Senior Resident: 3 years 7 months

2014-2015: S. Nijalingappa Medical College, Bagalkot 2015-2018: NIMHANS, Bengaluru

#### **Non-PG-Resident: 9 months**

2011-2012: Central Institute of Psychiatry, Ranchi

#### **Junior Resident: 4 years**

2009- 2011: Central Institute of Psychiatry, Ranchi 2012-2014: Institute of mental Health and Hospital, Agra

#### AWARDS

Best paper award in CIPCON-2103 [Central zone-IPS] Young researcher for 2<sup>nd</sup> best paper in ICONS-2014 [International conference on Schizophrenia] ICMR Travel Grant award in 2017 WFSBP Young investigator award in 2019 ASHA Award 2021

## TRAINING & EXPERIENCE:

I have been trained from three of the premier, oldest and largest Psychiatric Institutes of India namely Central Institute of psychiatry (CIP), Ranchi {<u>http://cipranchi.nic.in/</u>}; Institute of Mental health and hospital (IMHH), Agra { <u>http://www.imhh.org.in/</u>} and National Institute of Mental health and Neurosciences (NIMHANS), Bangalore {<u>http://www.nimhans.ac.in/</u>} for my post-graduation diploma, national board diplomate (equivalent to master's degree) and post-doctoral fellowships, respectively. I have been posted in different psychiatric sub-specialities during Junior and Senior residency in these institutes, along with postings in **neurology departments of RML Medical college, New Delhi** (which has super-speciality (DM) courses in neurology) and **RIMS, Ranchi**.

- 1. "*Instructional Methods in Health Professions Education*" online course by University of Michigen with Coursera in 2021.
- 2. "Online FSL Course" by fMRIB & WIN of Oxford university in 2021
- Certified for administration of "Montreal Cognitive Assessment, MoCA" by developers of MoCA with the id: InSREVS1002017-01 in April 2021.
- Johns Hopkins University & University of Colorado Boulder with Coursera through online courses in 2020 on "Principles of fMRI 1" & "Principles of fMRI 2"
- 5. "Applied statistical modelling for data analysis in R" online course by Minerva Singh in Udemy in 2020
- John Hopkins University with Coursera through online course in "Fundamentals of Neuroimaging" in 2019.
- 7. NIDA Clinical Trials Network through online course in "Good clinical practices" in 2017
- 8. Harvard University with Edx through online course in "*Health in Numbers: Quantitative Methods in Clinical Public Health Research*" in 2013
- 9. "The Data Science Course 2020: Complete data science bootcamp Complete Data Science Training: Mathematics, Statistics, Python, Advanced Statistics in Python, Machine & Deep Learning" ongoing online course in Udemy.

#### Clinical Experience

Residency programs involved clinical activities in three of the largest psychiatric institutes of India. Also, my experience as Senior resident in S.Nijalingappa Medical college (SNMC), Bagalkot {<u>http://www.snmcbgk.in/</u>} has given me an opportunity in **General Hospital Psychiatry**. I worked in **Child and Adolescent psychiatry unit** at CIP, Ranchi as an SR post DPM and was also part of **Epilepsy clinic, Headache clinic and Lithium clinics.** I have been working in **General psychiatry** units at NIMHANS, since my tenure at NIMHANS. As an SR, I had worked for few months in **Geriatric psychiatry** clinic at NIMAHNS and **Perinatal Psychiatry Services** at NIMAHNS. Since Post doctor fellowship, I have been a part of **Schizophrenia and Metabolic clinic** at roles of Senior resident and Consultant over periods of time. I have been actively involved in the multi-pronged approach of the clinic under the rubric of Individualized schizophrenia treatment and reintegration (**InSTAR) program** that involves holistic interventions. I have been involved more closely with the **Weak Intensity**  Simulation for Enhancement and Reintegration (WISER) program utilizing transcranial electrical stimulation techniques for individualizing treatments using focal neuromodulation techniques. ClozR-Clozapine registry for closer monitoring of patients on clozapine is currently being rolled out. I have also been closely involved in Electroconvulsive therapy and repetitive transcranial magnetic stimulation therapy services at NIMHANS for more than a year. I have been involved with an aim at enhancing the standards of care, safety and user satisfaction of these neuromodulation services.

#### **Research Experience**

My research experience started with the dissertation and thesis in psychotic disorders. I feel proud in conducting the research under the guidance of esteemed academicians and researchers, Prof.(Late)CRJ Khess, Prof.Sudhir Kumar and Dr. Venkatasubramanian in the three respective courses. I started my work on endophenotypes of Bipolar disorder, Social aspects in psychiatry and safety and tolerability of psychotropic drugs. I have been working with transcranial electrical stimulation (tECS) methods which is promising a cheaper, safer and effective alternative/enhancer to pharmacotherapy. Under the able guidance of Dr. G Venkatasubramanian, I have gained experience in neuroimaging modalities, neurostimulation tools and molecular genomic techniques.

I have also been working with patients in different pharamaco-therapeutic stages of Schizophrenia and bipolar disorder from drug naïve to ultra-resistant cases and as part developing a scale to assess the level of treatment response- Retrospective assessment for definitive antipsychotic response (RADAR). I am also involved in translation and validation of different clinical tools like Hindi translation of Calgary depression scale for schizophrenia (CDSS); Kannada, Hindi & Tamil translation of Simplified negative and positive symptoms interview (SNAPSI) as well as validation of positive and negative syndrome scale (PANSS)-6 and Schizophrenia Symptoms Scale for Genetics (SSSG) in Indian population; validating MoCA as screening tool for cognitive deficits in Schizophrenia.

I have been exploring newer avenues in tECS by studying "önline" stimulation methods, utilising direct (tDCS), alternative (tACS) and high definition (HD-tDCS) modalities in different psychiatric conditions and special population. Application of computerized Simulation of brain stimulation, Neuronavigation/neurotargeting, neurobiologically informed stimulation for individualized NIBS. I have experience in both hypotheses driven randomized controlled and open label studies as well as hypotheses generating brain stimulation experiments. I also have experience in application of electroconvulsive therapy (ECT) and repetitive transcranial magnetic stimulation (rTMS).

Also, I have been involved in clinical research using psychophysical tools and have gained experience in acquisition and analysis of electroencephalography (EEG/ERP), Magnetic resonance imaging (MRI), heart rate variability (HRV), functional near-infrared spectroscopy (fNIRS) and eye movement tracking (EMT). I have gained familiarity in molecular and genetic studies involving blood sample collection and processing, DNA extraction and storage, organization of wet lab samples as well as techniques like enzyme linked immunosorbent assay (ELISA) and conventional & real-time polymerase chain reaction (PCR and RT-PCR).

Recently, I was working in the long-term large-scale cohort study - Accelerator program for discovery in brain disorders using stem cells (ADBS). ADBS is a flagship project sponsored by DBT which evaluates dense families with major psychiatric disorders in order to explore the neurobiological underpinning of them through stem cells molecular genetics, magnetic resonance imaging (MRI), functional near infrared spectroscopy (fNIRS), electroencephalography (EEG), neuropsychology and eye movement tracking. I have worked as a clinician scientist/Assistant professor, where I was directly involved in supervising clinical and neurophysiological modalities. The work profile included Training the research staff with different clinical and neurobiological tools, maintaining quality of acquisition by regular training activities like framing SOPs, inter-rater reliability exercises and so on. I have active contribution in development of software in ADBS as well as in WISER program for acquiring and auditing of

multimodal data in liaison with software designers and developers, as well as in maintaining and managing of data bases. I have experience in working in collaboration with experts from within and outside the institute and people with different scientific/technical background for administrative as well as scientific activities of research projects.

Currently, I am working as Assistant professor in Clinical Research Centre for Neuromodulation in Psychiatry. The centre applies Neuromodulatory techniques [Electroconvulsive therapy (ECT), Transcranial Magnetic Stimulation (TMS), and transcranial Direct current Stimulation (tDCS)] offer alternative treatment avenue to these pharmacoresistant psychiatric disorders. Translational disease modelling studies are being conducted by advanced data science analysis of 'big data' derived from multi-modal neurobiological assessments in patients with pharmacoresistant psychiatric disorders (depression/ schizophrenia) in comparison with healthy subjects. Biomarkers that can predict differential clinical response of these pharmacoresistant patients to neuromodulatory interventions (ECT, TMS & tDCS) are being evaluated to impart "Precision Medicine".

## **Specialized trainings**

1. Training on quantitative methodology in medical epidemiology:

Harvard University with Edx through online course in "*Health in Numbers: Quantitative Methods in Clinical Public Health Research*" in 2013. 6 months online certification course by professors of Harvard University. Certificate issued after completion of weekly assignments and end of course online examination.

2. Training on qualitative methodology in psychiatric research:

Participated in preconference workshop on "Qualitative Research in Psychiatry" at International Conference on schizophrenia (ICONS-2012) at Chennai. The workshop dealt with methodology in planning, conducting and analysing qualitative research in psychiatric disorders.

3. <u>Training in using Statistical software in psychiatric research:</u>

Attended 1-week training and hands-on workshop on biostatistics and using statistical software in psychiatry by Dr. K Thennarasu at CIP, Ranchi in 2010.

### 4. Training on publication:

One day workshop on "How to publish a scientific article" 2016 at NIMHANS, Bangalore. I had hands on training on manuscript preparation, using referencing software and manuscript submission and review processes.

### 5. <u>Training on pedagogy:</u>

Three-day workshop on Pedagogy held on 22<sup>nd</sup> to 24<sup>th</sup> December, 2016 at Department of psychiatry, NIMHANS. I had training in interactive sessions on different principles, methods and practice of teaching and mentoring.

6. <u>Training in Brain stimulation methods in psychiatric disorders:</u>

One day seminars and demonstration of non-invasive brain stimulation in psychiatric disorders in 1<sup>st</sup> symposium on non-invasive brain stimulation in psychiatry in May, 2015 at NIMHANS, Bangalore. Sessions on theoretical and practical aspects of ECT, rTMS and tDCS were conducted. The conference training augmented my skills learnt with rTMS at CIP, Ranchi and tDCS during PDF at NIMHANS, Bangalore.

### 7. <u>Training in Obsessive compulsive disorder:</u>

Two days symposium on OCD with pre-symposium workshop on OCD for psychiatry residents and mental health trainees in 2<sup>nd</sup> symposium on OCD and related disorders: An update on research & treatment practices held on 27-29<sup>th</sup> October, 2017 at NIMHANS, Bengaluru. Workshop sessions targeted on diagnostic aspects, pharmacological and psychological management aspects of OCD and symposium covered the new advances in the OCD.

8. Training in Good clinical practices:

Certified by online course on "Good clinical practices" in 2017, a course run by National institute for drug abuse (NIDA) National Drug abuse and treatment - Clinical Trials Network of United States. The Good Clinical Practice (GCP) course helped me in getting trained with the utmost ethical standards in conduct of clinical trials with human participants. The 12 modules included in the course are based on ICH GCP Principles and the Code of Federal Regulations (CFR) for clinical research trials. Certificate is issued after completion of assignments and online examination after each module.

## 9. Training in Appraising Epidemiological studies:

One day workshop on "Appraising Epidemiological studies" conducted by Prof. Mathew Hickman organised by consortium on vulnerability to externalising disorders and addictions (cVEDA) NIMHANS, Bangalore on January 23rd, 2018 at NIMHANS, Bengaluru

## 10. Training in DTI Processing using AFNI:

Diffusion tensor imaging processing and analysis by hands-on training using AFNI software was conducted by Prof Paul Taylor and team organised by consortium on vulnerability to externalising disorders and addictions (cVEDA) NIMHANS, Bangalore on 24<sup>th</sup> and 25<sup>th</sup> January, 2018 at NIMHANS, Bengaluru

## 11. Training in ICD 11 diagnostic guideline:

One day workshop on Clinician Training for ICD 11 Diagnostic Guideline for psychiatric disorders was conducted by Dr. Pratap Sharan. It was organised to train clinician-raters for field trial on ICD 11 on 2<sup>nd</sup> February 2018 at NIMHANS, Bengaluru.

## 12. Training in functional imaging

Thorough three different online courses in Coursera on the principles and applications of fMRI in neurocognitive research in 2019 and 2020.

### 13. Training in data science

Completed training in data science with an online course on R and undergoing training on using Python. I have developed basic coding skills with R. Learning further on advanced Statistics in Python, Machine & Deep Learning.

## 14. Training in TMS-EEG

Attended one-day hands-on workshop on TMS-EEG from acquisition to analysis at NIMHANS.

## Research skills and trainings:

### Research work in the following areas:

- 1. tDCS and tACS for various symptom domains in schizophrenia, affective disorders and OCD and in special populations- elderly, pregnancy and organic cognitive disorders
- 2. Clinimetrics, phenomenology and psychopathology in psychiatric disorders.
- 3. Behavioural endophenotypes in psychiatric disorders
- 4. Translational applications of clinical neuroscience involving Magnetic resonance imaging (MRI), Functional near infrared spectroscopy (fNIRS), electroencephalography (EEG/ERP), heart rate variability (HRV) and eye movement tracking in psychiatric disorders.
- 5. Genotyping for predicting treatment response and imaging genetics.
- 6. Cultural influences, stigma, negative attitude in health workers and influences on patients
- 7. Safety and adversities of psychotropic drugs

## Experience with clinical tools in research

- 1. Mini-International Neuropsychiatric Interview (M.I.N.I.)
- 2. Schizophrenia and related disorders: Brief psychiatry rating scale, Scale for assessment of positive symptoms and negative symptoms, Calgary depression rating scales in schizophrenia,

Insight scale, VAGUS scale for insight, scale for assessment of thought language and communication, Bush-Francis catatonia rating scale, Northoff's catatonia rating scale.

- 3. Affective disorders: Montgomery-Asberg depression rating scale, Hamilton depression rating scale, Young mania rating scale, Beck's depression rating scale
- 4. Anxiety, OCD, addiction and related disorders: Yale brown obsessive-compulsive scale, Hamilton anxiety rating scale, Barratt impulsiveness scale, Reasons for substance use in schizophrenia Alcohol Dependence scale, Severity of alcohol dependence questionnaire, Fagerstrom test for nicotine dependence, Alcohol, Smoking and Substance Involvement Screening Test, Clinical dementia Rating scale.
- 5. Social and cultural psychiatry: Stigma scale, attitude towards mental illness questionnaire, Addiction Belief scale, belief of causation of illness scale, Interview for Recent life events, Adverse Childhood Experience International Questionnaire
- 6. Neurocognition: Montreal cognitive assessment, mini mental status examination, Brief cognitive assessment tool for schizophrenia, Trail making test, Stroop test, Porteus maze test, Verbal fluency test, MATRICS- equivalent neuropsychology tools, computerised neurocognitive tests (like nBACK, DSST, Mental rotation test, auditory signal detection test) etc.

#### Experience in application of the technical tools

- Transcranial electrical stimulation (tDCS and tACS) and High definition transcranial direct current stimulation (HD-tDCS & HD-tACS).
- 2. Neuro-targeting
- 3. Electroconvulsive therapy
- 4. Repetitive transcranial magnetic stimulation (rTMS).
- 5. EEG-monitored ECT
- 6. Electroencephalography/Event related potentials (EEG/ERP)
- 7. Functional near-infra red spectroscopy (fNIRS)
- 8. Eye movement tracking
- 9. Magnetic Resonance Imaging (MRI)
- 10. Familiarity with nucleic acid extraction using Spin column method, spectrophotometer, conventional PCR and RT-PCR.

#### Experience with database, statistical and referencing software

- 1. Statistical package for the social sciences (SPSS) and R Studio.
- 2. Using Python and Matlab based tools
- 3. G-power for sample size estimation.
- 4. Endnote and Zotero referencing software.
- 5. Familiarity with Microsoft ACCESS and Structured Query Language (SQL) databases.
- Statistical parametric mapping (SPM) software (Wellcome department of cognitive neurology) and Computational anatomy toolbox (CAT) for voxel-based morphometry (VBM), surface-based morphometry (SBM) and region-based morphometry (RBM) of MRI.

- 7. Manual morphometry using software like MANGO (Research Imaging Institute, UTHSCSA), 3Dslicer.
- Conn connectivity tool box and Analysis of functional imaging (AFNI) software suite for fMRI processing
- 9. Familiarity with EEG data processing using Curry software, BrainVision Analyzer2, Brainstorm and EEGlab.
- 10. Familiarity with basic techniques with hand on training initiated in molecular biology techniques such as genotyping assays, gene expression, and ELISA.
- 11. NIRScout tool for Statistical parametric mapping (SPM) software for fNIRS analysis.
- Galileo New technology, Nexus 4 system and for Heart rate variability/ECG recording and GNT software for spectral analysis using fast Fournier transformation for obtaining time and frequency domain measures of Heart rate variability.
- 13. E-prime software for computerised neurocognitive assessments.
- 14. LabVIEW system design software by national informatics for Eye tracking analysis.

#### Peer Review

Scientific reviewer for reputed international journals: NPJ Schizophrenia, Asian Journal of Psychiatry, BMJ Case Reports, Canadian journal of Psychiatry, Journal of Psychiatric Research, Schizophrenia Research, Journal of Psychiatry Research, Neurophysiologie Clinique (International journal of clinical neurophysiology), Neurocase, and Neuropsychiatric disease & treatment, Frontiers in Human Neuroscience and Frontiers in Psychiatry.

## Projects:

### Funded:

- 1. Site Principal investigator in "Center for Depression Diagnosis and Medication Adherence" funded by Department of biotechnology, Department of Science and Technology, Govt. of India under India-Korea Bilateral Collaborations scheme started in 2020 for 3 years Rs.34,35,960.
- Co-investigator in the "Translational Research on Brain Connectivity in Schizophrenia: Neuromodulatory Effects of transcranial Direct Current Stimulation" funded by Department of Science and Technology as part of S. Ramachandran National Bioscience Grant Award for 3 years starting from 2020 Rs.15,00,000.
- 3. Co-investigator in the "Accelerated Discovery of Brain disorders using stem-cells" funded by DBT-Pratiksha Trust for 60 months with Rs1,44,00,00,000.
- 4. Co-investigator in the Intramural funded project "A Study of interactions between the Gut Microbiome and the human host biology to elucidate novel aspects of the pathophysiology and pathogenesis of Schizophrenia" for 2 years from Feb 2020 with Rs.9,99,300.

## Non-funded:

- 1. Principal investigator of "Exploring the utility and mechanistic basis of transcranial alternating stimulation (tACS) in Schizophrenia." 2018-2020.
- 2. Principal investigator of "Retrospective assessment for definitive antipsychotic response (RADAR): A validation study". 2019-2022.
- Co-Principal investigator of "Application of multi-modal psychophysical techniques in Psychiatry: Eye Tracking, fNIRS & EEG Studies in Schizophrenia and Obsessive-Compulsive Disorder" 2020 to 2022
- 4. Investigator of "Effectiveness and tolerability profile of psychiatric interventions and their impact on course and outcome in Schizophrenia: A retrospective chart review" 2020 to 2022
- 5. Investigator of "Schizophrenia Symptoms Scale for Genetics: Study on Clinimetric Properties & Neuroanatomical Correlates" 2018 to 2022.
- 6. Investigator of "Clinical Utility of Brief Symptom Rating Scales in Schizophrenia: A Clinimetric Study" 2018 to 2022.
- 7. Principal investigator of "Training needs of Early career Indian Psychiatrists in neuromodulation in Psychiatry" 2021 to 2022.
- Co-investigator in the project "Evaluation of systemic hemodynamics and cerebral functions in children, adolescents and young adults undergoing modified electroconvulsive therapy – A prospective observational study" funded by Department of Biotechnology supported Clinical research center for neuromodulation in psychiatry from 2021 to 2023.

## **Publications**

## **Publications in Peer-reviewed Scientific Journals**

### Publications in Pubmed Indexed Journals

(\*Corresponding author, <u>Underlined</u> first author/joint-first author)

- Chandran S, Sreeraj VS, Venkatasubramanian G, Sathyaprabha TN, Murthy P. Corpus callosum morphometry in children with prenatal alcohol exposure. Psychiatry Res Neuroimaging. 2021 Dec 30;318:111405. doi:10.1016/j.pscychresns.2021.111405. Epub 2021 Oct 22. PMID: 34743066. (IF:2.38)
- Nayok SB, Pathak H, Suhas S, Thimmashetty VH, Shivaprakash P, Madhu Sudhan RM, Sreeraj VS\*, Narayanaswamy JC, Venkatasubramanian G. Concurrent conventional & high-definition transcranial direct current stimulation for treatment of schizophrenia with co-morbid obsessive-compulsive disorder: A case report. Brain Stimul. 2021 Nov-Dec;14(6):1483-1485. doi: 10.1016/j.brs.2021.09.010. Epub 2021 Sep 28. PMID: 34597856. (IF: 8.96)
- Rangarajan SK, Suhas S, Reddy MSS, Sreeraj VS, Sivakumar PT, Venkatasubramanian G. Domiciliary tDCS in Geriatric Psychiatric Disorders: Opportunities and Challenges. Indian J Psychol Med. 2021 Jul;43(4):351-356. doi:10.1177/02537176211003666. Epub 2021 Apr 27. PMID: 34385730; PMCID: PMC8327869. (IF: 1,01)
- Sreeraj VS, Puzhakkal JC, Holla B, Nadella RK, Sheth S, Balachander S, Ithal D, Ali F, Viswanath B, Muralidharan K, Venkatasubramanian G, John JP, Benegal V, Murthy P, Varghese M, Reddy YJ, Jain S; Accelerator Program for Discovery in Brain disorders using Stem cells (ADBS) Consortium. Cross-diagnostic evaluation of minor physical anomalies in psychiatric disorders. J Psychiatr Res. 2021 Oct;142:54-62. doi: 10.1016/j.jpsychires.2021.07.028. Epub 2021 Jul 20. PMID: 34325233. (IF:4.47)
- Shivakumar V, Sreeraj VS, Kalmady SV, Gangadhar BN, Venkatasubramanian G. Pars Triangularis Volume Asymmetry and Schneiderian First Rank Symptoms in Antipsychotic-naïve Schizophrenia. Clin Psychopharmacol Neurosci. 2021 Aug 31;19(3):507-513. doi: 10.9758/cpn.2021.19.3.507. PMID: 34294619; PMCID: PMC8316654. (IF:2.58)
- Moideen S, Anver PC, Uvais NA, Sreeraj VS, Ul Haq Katshu MZ. Positive Naproxen Test in Psychogenic Fever. Prim Care Companion CNS Disord. 2021 Jun 17;23(3):20l02630. doi: 10.4088/PCC.20l02630. PMID: 34139109. (IF: 4.4)
- Bhalerao GV, Sreeraj VS, Bose A, Narayanaswamy JC, Venkatasubramanian G. Comparison of electric field modeling pipelines for transcranial direct current stimulation. Neurophysiol Clin. 2021 Aug;51(4):303-318. doi: 10.1016/j.neucli.2021.05.002. Epub 2021 May 20. PMID: 34023189. (IF: 3.73)
- Parekh P, Bhalerao GV, Rao R, Sreeraj VS, Holla B, Saini J, Venkatasubramanian G, John JP, Jain S; ADBS Consortium. Protocol for magnetic resonance imaging acquisition, quality assurance, and quality check for the Accelerator program for Discovery in Brain disorders using Stem cells. Int J Methods Psychiatr Res. 2021 Sep;30(3):e1871. doi: 10.1002/mpr.1871. Epub 2021 May 7. PMID: 33960571; PMCID: PMC8412227. (IF: 4.04)
- Parlikar R, Vanteemar VS, Shivakumar V, Narayanaswamy C J, Rao P N, Ganesan V. High definition transcranial direct current stimulation (HD-tDCS): A systematic review on the treatment of neuropsychiatric disorders. Asian J Psychiatr. 2021 Feb;56:102542. doi: 10.1016/j.ajp.2020.102542. Epub 2021 Jan 6. PMID: 33486461. (IF: 3.54)
- Balachander S, Meier S, Matthiesen M, Ali F, Kannampuzha AJ, Bhattacharya M, Kumar Nadella R, Sreeraj VS, Ithal D, Holla B, Narayanaswamy JC, Arumugham SS, Jain S, Reddy YJ, Viswanath B. Are There Familial Patterns of Symptom Dimensions in Obsessive-Compulsive Disorder? Front Psychiatry. 2021 Apr 20;12:651196. doi: 10.3389/fpsyt.2021.651196. PMID: 33959055; PMCID: PMC8093508. (IF: 3.53)

- Segar R, Chhabra H, Sreeraj VS, Parlikar R, Kumar V, Ganesan V, Kesavan M. fNIRS study of prefrontal activation during emotion recognition-A Potential endophenotype for bipolar I disorder? J Affect Disord. 2021 Mar 1;282:869-875. doi: 10.1016/j.jad.2020.12.153. Epub 2020 Dec 30. PMID: 33601730. (IF: 4.84)
- Selvaraj S, Chhabra H, Dinakaran D, Sreeraj VS, Venkataram S, Narayanaswamy JC, Kesavan M, Varambally S, Venkatasubramanian G. Auditory signal detection in schizophrenia: Correlates with auditory verbal hallucinations & effect of single session transcranial direct current stimulation (tDCS). Psychiatry Res. 2021 Mar;297:113704. doi: 10.1016/j.psychres.2021.113704. Epub 2021 Jan 4. PMID:33453498. (IF: 3.22)
- Ali F, Sreeraj VS\*, Nadella RK, Holla B, Mahadevan J, Ithal D, Balachander S, Viswanath B, Venkatasubramanian G, John JP, Reddy YCJ, Jain S. Estimating the familial risk of psychiatric illnesses: A review of family history scores. Asian J Psychiatr. 2021 Feb;56:102551. doi: 10.1016/j.ajp.2021.102551. Epub 2021 Jan 10. PMID: 33453492. (IF: 3.54)
- Sreeraj VS, Holla B, Ithal D, Nadella RK, Mahadevan J, Balachander S, Ali F, Sheth S, Narayanaswamy JC, Venkatasubramanian G, John JP, Varghese M, Benegal V, Jain S, Reddy YJ; ADBS Consortium, Viswanath B. Psychiatric symptoms and syndromes transcending diagnostic boundaries in Indian multiplex families: The cohort of ADBS study. Psychiatry Res. 2021 Feb;296:113647. doi: 10.1016/j.psychres.2020.113647. Epub 2020 Dec 16. PMID: 33429328. (IF: 3.22)
- Kumar V, Nichenmetla S, Chhabra H, Sreeraj VS, Rao NP, Kesavan M, Varambally S, Venkatasubramanian G, Gangadhar BN. Prefrontal cortex activation during working memory task in schizophrenia: A fNIRS study. Asian J Psychiatr. 2021 Feb;56:102507. doi: 10.1016/j.ajp.2020.102507. Epub 2020 Dec 20. PMID: 33388563. (IF: 3.54)
- 16. Someshwar A, Holla B, Pansari Agarwal P, Thomas A, Jose A, Joseph B, Raju B, Karle H, Muthukumaran M, Kodancha PG, Kumar P, Reddy PV, Kumar Nadella R, Naik ST, Mitra S, Mallappagiri S, Sreeraj VS, Balachander S, Ganesh S, Murthy P, Benegal V, Reddy JY, Jain S, Mahadevan J, Viswanath B; ADBS Consortium. Adverse childhood experiences in families with multiple members diagnosed to have psychiatric illnesses. Aust N Z J Psychiatry. 2020 Nov;54(11):1086-1094. doi: 10.1177/0004867420931157. Epub 2020 Jun 15. PMID: 32538179. (IF: 5.74)
- Dinakaran D, Tholasappa V, Lhamu T, Sreeraj VS\*, Venkatasubramanian G. Treating post-dengue mania: Is role of valproate and quetiapine related to histone deacetylase inhibition? Bipolar Disord. 2020 Aug;22(5):543-545. doi: 10.1111/bdi.12948. Epub 2020 Jun 21. PMID: 32511878. (IF: 6.74)
- Sreeraj VS\*, Suhas S, Parlikar R, Selvaraj S, Dinakaran D, Shivakumar V, Narayanaswamy JC, Venkatasubramanian G. Effect of add-on transcranial alternating current stimulation (tACS) on persistent delusions in schizophrenia. Psychiatry Res. 2020 Aug;290:113106. doi: 10.1016/j.psychres.2020.113106. Epub2020 May 23. PMID: 32474070. (IF: 3.22)
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- Shakeel M, Khess CRJ, Sreeraj VS, Uvais NA\*. Medication adherence in schizophrenia: A hospital based cross-sectional study of family related factors. Journal of psychosocial rehabilitation and mental health. 2017; 4(2):215-19.
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- 73. Rasmina V, Hafeeq B, Uvais NA\*, <u>Sreeraj VS</u>. Attitudes of Dental Interns Towards Mental Illness. International Journal of Medicine and Public Health. 2019; 9(1):28-30.
- 74. <u>Uvais N A\*</u>, **Sreeraj VS**. Clozapine prescribing pattern in 10-year-old community psychiatry clinic in South India. Indian journal of Social Psychiatry. 2020; 36(3):262-63.
- 75. <u>Arivazhagan K</u>, Sharma S, Dubey I, **Sreeraj VS**, Uvais NA. Perceived Stigma Towards Psychiatric Illnesses in Mental Health Trainees: A Cross-Sectional Study. Journal of Psychosocial Rehabilitation and Mental Health. 2020;**7**,169–74.

### **Published Preprints**

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- 77. Lakkireddy SP, Balachander S, Dayal P, Bhattacharya M, Joseph MS, Kumar P, Kannampuzha AJ, Mallappagari S, Shruthi S, Chandy AA, Kumaran M, Sheth S, Ramesh V, Puzhakkal JC, Selvaraj S, Ithal D, Sreeraj VS, Mahadevan J, Holla B, Venkatasubramanian G, John JP, Murthy P, Benegal V, Reddy YCJ, Jain S, ADBS Consortium, Viswanath B. Neurocognition and its association with adverse childhood experiences and familial risk of mental illness. medRxiv. 2021 Jan 1. doi: https://doi.org/10.1101/2021.11.28.21266887

### **Chapter in Books**

 <u>Khess CRJ</u>, Umesh S, Sreeraj VS, Simlai J. (2017) Childhood epilepsies. In: JN Vyas, Christoday RJ Khess, PB Behere, I Sharma, NK Bohra, SR Ghimire (eds). Textbook of Child & Adolescent Psychiatry, Edition: 1. pp.497-509. Paras Medical Publisher: New Delhi. ISBN: 9788181914729

- Sreeraj VS, Venkatasubramanian G. (2019) Gender and Brain Stimulation. In: Chandra P., Herrman H, Fisher J, Riecher-Rössler A. (eds) Mental Health and Illness of Women. Mental Health and Illness Worldwide. Springer, Singapore. https://doi.org/10.1007/978-981-10-0371-4\_35-1
- <u>Dinakaran D</u>, Sreeraj VS, Venkatasubramanian G. Biological Markers for Outcome and Recovery in Schizophrenia. In: Shrivastava A, De Sousa A (eds). *Schizophrenia Treatment Outcomes: An Evidence-Based Approach to Recovery*. Springer International Publishing: Cham, 2020, pp 85-89. <u>https://doi.org/10.1007/978-3-030-19847-3\_9</u>
- Sreeraj VS, Shivakumar V, Vijaya Kumar G, Rao NP. (2020) Role of neuroimaging in understanding mental health effects of yoga. In: Varambally S, George, S, Srinivasan, TN. (eds) The Science and Art of Yoga in Mental and Neurological Healthcare. Jaypee Brothers Medical Publishers: New Delhi. ISBN: 9788194802815
- <u>Verma R</u>, Sreeraj VS, Damodharan D, Venkatasubramanian G. (2021) Basic biological sciences for psychiatry. In: Singh PK, Singh OP, Kumar V. (eds) IPS Textbook of undergraduate psychiatry. Jaypee Brothers Medical Publishers: New Delhi. ISBN: 9789352704231
- Sreeraj VS, Shivakumar V, Rao NP, Venkatasubramanian G. (2021) Long-acting drug delivery systems for schizophrenia treatment. In: Donelly R, Thakur R, Lorraneta E.(eds). Long-acting drug delivery systems. Elsevier Publisher. https://doi.org/10.1016/B978-0-12-821749-8.00009-4
- 7. <u>Sreeraj VS,</u> Damodaran D, Venkatasubramanian G\*. (2021) Long-term mental health consequences of COVID-19 Pandemic. In: Jaisoorya TS, Reddy YCJ. (Eds) Mental Health in the times of COVID-19 Pandemic. Guidelines for General Medical and Specialized Mental Health Care Settings. NIMHANS Publications: Bengaluru.

## **Dissertation and thesis**

- 1. Dissertation on "Study of impulsivity and anxiety as endophenotypes in bipolar affective disorder" with correlation of heart rate variability and lipid profile as a part of partial fulfilment for the course of DPM under the guidance of Prof (Dr). CRJ Khess and co-guide Dr. S K Munda.
- 2. Thesis on "Anxiety and impulsivity as endophenotype in bipolar disorder: a comparative study" with correlation of heart rate variability and executive functions as a part of partial fulfilment for the course of DNB under the guidance of Prof. Sudhir Kumar and co-guidance of Dr. Rakesh Kumar and Dr. A K Sisodia.
- Thesis on "Effect of single-session tDCS on Cognition in Schizophrenia: A randomized double blind cross-over study" as part of Post-doctoral fellowship under the guidance of Dr.G Venkatasubramanian and co-guidance of Dr. Shivarama Varambally, Dr. K Muralidharan, Dr. Naren P Rao and Dr. Janardhanan C Narayanaswamy.

# **Research Awards**

- As first and presenting Author of "Impulsivity and executive function as endophenotype in Bipolar disorder" Awarded as the Best Paper in Central Zone - Indian Psychiatric Society Conference (CIPCON-2013) and represented Central Zone for Bombay Psychiatric Society Silver Jubilee Award at Annual National Conference of Indian Psychiatric Society Conference (ANCIPS-2014) at Pune.
- As first and presenting Author of "Impulsivity and executive function as endophenotype in Bipolar disorder: A transactional approach" Awarded the YOUNG RESEARCHER AWARD for the second-Best Paper in the sixth International Conference on Schizophrenia (ICONS-2014) at Chennai
- 3. As first and presenting author of "Effect of single-session tDCS on cognition in Schizophrenia: A randomized double-blind cross-over study" in 2<sup>nd</sup> International Brain stimulation conference held at Barcelona, Spain from 5<sup>th</sup> to 8<sup>th</sup> March, 2017. Awarded with International Travel Grant Award for Non ICMR scientist by Indian Council of Medical research.
- As first author of "Cortical thickness correlates of neurological soft signs in antipsychotic naïve schizophrenia" and awarded with WFSBP Young Investigator award in World congress of biological psychiatry Vancouver, Canada 2-6 2019.
- As first Author of "Resting state functional connectivity correlates of antipsychotic treatment in unmedicated schizophrenia" and awarded with ASHA award for best paper by young researcher in Annual National Conference of Indian association of Biological Psychiatry on 25-26<sup>th</sup> September, 2021.

#### Awards as co-author

- 6. As co-author of the paper "Comparative profile of Auditory Signal Detection in Patients with Schizophrenia and healthy subjects", the first author Dr.Selvaraj S awarded with the travel fellowship as part of 'Young Fellowship Program' of WPA XVII World Congress of Psychiatry to at Berlin, Germany in October 2017.
- 7. As co-author of the paper "Comparative profile of Auditory Signal Detection in Patients with Schizophrenia and healthy subjects", the first author Dr.Damodaran D was awarded with the **travel fellowship as part of 'Young Fellowship Program'** of WPA XVII World Congress of Psychiatry held at Berlin, Germany in October 2017.
- As co-author of the paper "Gene polymorphisms and response to transcranial direct current stimulation for auditory hallucinations in schizophrenia" presented at TSS NIMHANS INA Conclave winning "Gandhi Bursary Award" to the first author Chhabra H, at Bangalore on 15<sup>th</sup> February 2018.
- As co-author of the paper "Super-refractory schizophrenia: factors influencing the clozapine response" presented at WPA thematic conference to at Melbourne, Australia from 25<sup>th</sup> to 28<sup>th</sup> February 2018 with author Nagendrappa S gaining "ICMR international travel grant award for non-ICMR scientists".
- As co-author of the paper "<u>Neural correlates of the effect of add-on transcranial direct current</u> stimulation on persistent auditory verbal hallucinations in schizophrenia: A functional MRI <u>study</u>" presented at International Brain stimulation Conference 2018 at Vancouver winning best paper for young researcher award to the first author Dr. Bose A (Abstract in Brain Stimulation 12(2):487-488)

- 11. As co-author of the paper "Neuropsychological Functioning in Individuals with Shared Vulnerability for Bipolar Disorder and Obsessive-Compulsive Disorder" presented at World Bipolar Day CME-2019 winning 2<sup>nd</sup> best poster award to the first author Bhattacharya M at NIMHANS, Bengaluru
- 12. As co-author of the paper "Effect of Single Session tDCS on Auditory Signal Detection in Schizophrenia" first author Dr.Selvaraj S awarded with "Young investigator award" from the 14th World congress of biological psychiatry held in Vancouver, Canada in June 2019.
- 13. As co-author of the paper "Predictive pursuit abnormalities in patients with schizophrenia" first author Dr.Damodaran D was awarded with "**Young investigator award**" from the 14th World congress of biological psychiatry held in Vancouver, Canada in June 2019.
- 14. As co-author of the poster "Impact of family history density and adverse childhood experiences on age of onset of psychiatric illness in multiplex families" presented in World congress of psychiatric genetics 2019 at Anaheim USA winning "Early career investigator award" to the first author Dr.Jayant Mahadevan. (Abstract in European Neuropsychopharmacology 29:S239)
- 15. As co-author of the paper "Composite endophenotypes for bipolar I disorder: investigating oculomotor abnormalities and aberrant neurodevelopmental markers" presented at ISBD 2020 winning "Samuel Gershon Junior Investigator Awards" to the first author Dr Ritish D at Chicago (Conducted Online)
- 16. As co-author of the paper "Analysis of Neuroprogression, genetic loading, & neurodevelopment markers to predict neuropsychological deficits in bipolar disorder" presented at World Bipolar Day CME-2020 winning 2<sup>nd</sup> best poster award to the first author Bhattacharya M at NIMHANS, Bengaluru
- As co-author of the paper "Minor physical anomalies as transdiagnostic endophenotypes in psychiatric disorders" to be presented at presented in the Virtual World congress of psychiatric genetics 2020 winning "Early career investigator award" to the first author Dr.Joan Puzzhakkal. (Abstract in European Neuropsychopharmacology 29:S239)

#### Other conference presentations

- 18. As a co-author of the paper "Attitude of Hospital Staff towards Mental Illness and Patients' Satisfaction with Treatment Services: An Exploratory Study" presented in free paper session in Annual national Conference of Indian Psychiatric Society (ANCIPS-2011) at New Delhi.
- 19. As first and presenting author of "Reasons for substance use: A comparative study of alcohol use in tribals and non-tribals" in International Conference on Transcultural Psychiatry-2011 at Ranchi.
- 20. As second author of paper "Study of type of substance use in Tribal and non tribals" presented in International Conference on Transcultural psychiatry-2011 at RINPAS, Ranchi.
- As first and presenting Author of "Anxiety and Heart rate variability as Endophenotype in Bipolar disorder" Presented Paper in Jharkhand Psychiatric Society Conference (ASICON-2011) at Ranchi, 2011
- 22. As first and presenting Author of "Anxiety and Heart rate variability as Endophenotype in Bipolar disorder" Presented for best Paper award in Conference of Eastern Zone of Indian Psychiatric Society (CEZIPS-2011)
- 23. As first and presenting author of paper "Anxiety and heart rate variability as endophenotype in Bipolar Disorder" **finalist for the Award paper presentation at International conference on**

#### Schizophrenia (ICONS-2012) at Chennai

- As co-author of paper "Auditory P300 event- related potential and aging: normative data for Indian population" presented a poster in International conference on schizophrenia (ICONS-2012) at Chennai
- 25. As first and presenting Author of "Does Impulsiveness lead to Bipolar Disorder?" Presented Paper in Annual national Conference of Indian Psychiatric Society (ANCIPS-2013) at Bangalore.
- 26. As second author of paper "Treatment seeking behaviour in care givers of patients with severe mental illness" presented as poster in Annual National Conference of Indian Psychiatric Society (ANCIPS-2013) at Bangalore.
- 27. As a co-author of the paper "Mental health of Doctors-to be": a cross sectional study" presented at Annual national conference of Indian psychiatric society (ANCIPS-2015) at Hyderabad.
- 28. As second author of the poster "Course of Transvestism A case report" presented at Annual national conference of Indian psychiatric society (ANCIPS-2015) at Hyderabad.
- 29. As first and presenting author of the poster "Impact of patient exposure and training on nursing students' attitude towards mental illness" in the fifth Asia Pacific regional conference on Psychosocial Rehabilitation-2015 at Bangalore
- 30. As co-author of the poster "Influence of COMT and NRG-1 gene polymorphisms on the effect of tDCS on Auditory Verbal Hallucinations in Schizophrenia" presented at 2<sup>nd</sup> International Brain stimulation conference held at Barcelona, Spain from 5<sup>th</sup> to 8<sup>th</sup> March, 2017
- 31. As second author of the poster "Effect of transcranial direct current stimulation on smooth pursuit eye movements in schizophrenia" presented at WPA XVII World congress of psychiatry held from 8<sup>th</sup> to 12<sup>th</sup> October 2017 in Berlin, Germany.
- 32. As co-author of the poster "Comparative profile of auditory signal detection in patients with schizophrenia and healthy subjects" presented at WPA XVII World congress of psychiatry held from 8<sup>th</sup> to 12<sup>th</sup> October 2017 in Berlin, Germany.
- 33. As first and presenting author of the poster "HD-tDCS for auditory hallucinations in Schizophrenia" presented at Annual national conference of Indian psychiatry society (ANCIPS-2018) held at Ranchi, India from 5<sup>th</sup> to 8<sup>th</sup> February 2018.
- 34. As co-author of the paper "Effect of tACS on working memory and processing speed in schizophrenia: an open label study" presented at 6<sup>th</sup> Biennial schizophrenia international research society conference to be held at Florence, Italy in April 2018.
- 35. As first and presenting Author of the poster "RADAR Retrospective Assessment for Definitive Antipsychotic Response: Scale Development & Validation" in the 8<sup>th</sup> International Conference on Schizophrenia (IConS VIII) at Chennai from 30<sup>th</sup> August to 1<sup>st</sup> September, 2018.
- 36. As co-author of the paper "Clinical utility of transcranial direct current stimulation (tDCS) in perinatal mental health" at International MARCE society biennial scientific meeting 2018 from 26<sup>th</sup>-28<sup>th</sup> September 2018 at NIMHANS, Bengaluru.
- 37. As co-author of the paper "White Matter Correlates of Electric Field Activity in HD-tDCS for Schizophrenia: A Computational Neuromodeling Study" presented at International Brain stimulation Conference 2018 at Vancouver (Abstract in Brain Stimulation 12(2):487-488)
- 38. As co-author of the paper "Effect of High-definition transcranial direct current stimulation (HD-

tDCS) on auditory hallucinations in schizophrenia: Correlates with Gray Matter Volume" Presented a poster for participation in "SOBP" in Chicago, US.

- 39. As co-author of the paper To Explore the Relationship of Age at Onset of Illness with Adverse Childhood Life Experiences in an Indian Population." Presented at ISBD 2019
- 40. As co-author of "Differential association of minor physical anomalies with family history of psychiatric syndromes in multiplex families" presented at World Bipolar Day CME-2019 at NIMHANS, Bengaluru.
- 41. As co-author of the paper "Is ICM based model necessary for Indian settings: Looking in the mirror of bipolar disorder case" presented at World Bipolar Day CME-2019 at NIMHANS, Bengaluru.
- 42. As co-author of the paper "Cross cutting affective symptoms in "unaffected" individuals of multiplex families" presented at World Bipolar Day CME-2019 at NIMHANS, Bengaluru.
- As first author of the poster "A transdiagnostic approach with multiplex families for genetic studies in psychiatric disorders." in World congress of psychiatric genetics at Anaheim USA. (Abstract in European Neuropsychopharmacology 29:S136-137)
- 44. As co-author of the poster "Transdiagnostic neurocognitive endophenotypes in major psychiatric illness" in World congress of psychiatric genetics at Anaheim USA. (Abstract in European Neuropsychopharmacology 29:S2)
- 45. As co-author of the poster "Familial patterns of symptom dimensions in obsessive-compulsive disorder" in World congress of psychiatric genetics at Anaheim USA. (Abstract in European Neuropsychopharmacology 29:S250)
- 46. As co-author of the paper "fNIRS study of prefrontal activation during facial emotion recognition task- a potential endophenotype for bipolar disorder" presented at World Bipolar Day CME-2020 at NIMHANS, Bengaluru.
- 47. As co-author of the e-poster "Role of booster session tDCS for persistent auditory hallucinations in schizophrenia" in "Schizophrenia International Research Society (SIRS)" 2020.
- As co-author of the e-poster "Independent Effect of Temperament and Family Density on First Intake in Alcohol Dependence Syndrome" in "Virtual World Congress of Psychiatric Genetics" 2020.
- 49. As corresponding author of the paper "Reliability of SNAPSI in clinical assessment of patients with schizophrenia" at 9<sup>th</sup> International Conference on Schizophrenia ICONS-2021.
- 50. As corresponding author of the poster "RADAR- Retrospective Assessment of Definitive Antipsychotic Response: Psychometric properties" at 9<sup>th</sup> International Conference on Schizophrenia ICONS-2021.
- 51. As corresponding author of the poster "Treatment resistance in individuals with Schizophrenia receiving Clozapine" at 9<sup>th</sup> International Conference on Schizophrenia ICONS-2021.

## **Teaching experience**

**Developing teaching skills** have been an integral part of the academic program in post- graduation training. I have been **mentoring** the primary DNB and MD residents of the institute during DNB (post-DPM) as well as during senior residency and post-doctoral fellowship in clinical, academic as well as research activities. Conducting **classes**, **lectures and topic discussions** as well as mentoring of **postgraduate residents**, **medical graduation students**, and **para-medical students of nursing**, **clinical psychology and social work** are also been part of my engagement in professional service. I have also attended **Pedagogy workshop** conducted at NIMAHNS in 2017 and online Pedagogy course "*Instructional Methods in Health Professions Education*" by University of Michigen with Coursera in 2021-2022. I have incorporated many pedagogy principles in teaching and training.

I was the primary coordinator and one of the trainers of "**Individualized schizophrenia treatment module**" for residents conducted at NIMHANS during the tenure as PG and Post DNB Senior Resident. I was the **academic in-charge SR** of unit for teaching and training programs in Unit 1 during Senior residency for two years as post-DNB Senior resident.

As an Assistant professor, I have taken lectures on various topics, chaired case-conferences and journal discussions for the JRs and SRs at the department, unit as well as part of the training programs of the ADBS and neuromodulation related projects.

I have also been **mentoring thesis/research activities of MD, DM, MPhil, PhD scholars and post-Doctoral fellows** from clinical and basic bioscience backgrounds in different capacities. Also, has been involved in training fellow psychiatry and other medical/para-medical colleagues as detailed below.

## **CMEs/Conferences organized**

- 1. Organising committee member of "Psychiatry CME-2015" at SNMC, Bagalkot in January 2015.
- 2. Organising committee member of "World Bipolar Day-CME-2019" at NIMHANS, Bengaluru in March 2019
- 3. Organising team member of "ADBS workshop on brain imaging" at NIMHANS, Bengaluru on 6<sup>th</sup> July 2019.
- 4. Organising committee member of "World Bipolar Day-CME-2019" at NIMHANS, Bengaluru in March 2020
- 5. Organising team of "PG-CME on Schizophrenia" in September 2018 at NIMHANS, Bengaluru.
- 6. Organising team member of online CME on "Clozapine -Therapeutic Drug Monitoring & Current Clinical Perspectives" in October 2020 at NIMHANS, Bengaluru.
- Organising team member one-day workshop on "TMS-EEG" at NIMHANS, Bengaluru in 30<sup>th</sup> July, 2020.
- 8. Organising team member of "5-day CRC hands-on training and workshop" at NIMHANS, Bengaluru from 22<sup>nd</sup> to 26<sup>th</sup> November, 2021.

### Invited lectures, symposiums and workshop

1. Lecture in Training programme on substance use disorders conducted at CIP with support from National fund for control of Drug abuse programme in 2011 for primary care physicians.

- 2. As guest speaker in International Conference on Integrated Psychiatry and Clinical psychology -2012 (December 3-5) at Agra.
- 3. Presented Symposium on "Cognitive neurophysiology in Schizophrenia: bridging laboratory and clinics at Annual National Conference of Indian Psychiatric society (ANCIPS-2016) at Bhopal.
- 4. tDCS- Demonstration in tDCS workshop at "Postgraduate training programme 2015" by IPS KC in association with Department of Psychiatry, NIMHANS, Bengaluru.
- 5. Demonstration of tDCS in "tDCS CME" at Institute of Aerospace medicine, Bangalore.
- Training and interactive session on tDCS in "Workshop on Non-Invasive Brain Stimulation in psychiatry" organised by Indian Psychiatry Society and NIMHANS on 11-13 July 2016, Bengaluru.
- 7. Training and interactive session on tDCS in "Workshops on Non-Invasive Brain Stimulation in psychiatry" organised by NIMHANS in Jan-April 2018 at Bengaluru.
- 8. Lecture in PG-CME on Schizophrenia in September 2018 on "Adverse effects of antipsychotics: Evaluation and Management" at NIMHANS, Bengaluru.
- 9. Training and interactive session on tDCS in "Workshops on Non-Invasive Brain Stimulation in psychiatry" organised by NIMHANS in Jan-April 2019 at Bengaluru.
- 10. Training and interactive session on tDCS in "Workshops on Non-Invasive Brain Stimulation in psychiatry" organised by NIMHANS in Jan 2020 at Bengaluru.
- 11. Resource person in 5-day CRC hands-on training and workshop at NIMHANS, Bengaluru from 22<sup>nd</sup> to 26<sup>th</sup> November, 2021.
- "Hands-on workshop on Electroconvulsive therapy: Patient Preparation to Recovery" in one-day CME-cum-workshop on electroconvulsive therapy at Central Institute of Psychiatry, Ranchi on 18<sup>th</sup> December 2021.

#### Public Out-reach Programs:

- 1. Organised a program on "Living a healthy life with Schizophrenia" for person living with mental illness and care givers at SNMC Bagalkot in October 2014 on the occasion of World Mental Health Day.
- 2. Annual NIMHANS Science Day programmes at NIMHANS representing the ADBS project and WISER neuromodulation programs in 2018 and 2019.
- 3. Introduction to biological research in psychiatry to lay public in the "Walking tour of NIMHANS" organised by Department of Mental Health Education, NIMHANS in 2019 and 2020.
- 4. Webinar on "Is schizophrenia heritable" in symposium for person living with mental illness and care givers organised by COOJ mental health foundation, Goa on the occasion of "World Schizophrenia Day" in May 2021.
- 5. Webinar on "Brain Stimulation therapies for Elderly" organised by Vayomanasa Sanjeevini webinar on 27<sup>th</sup> December 2021.

## **Mentoring**

### As Thesis co-guide

- 1. Co-guide of Dr. Dibyendu in MD thesis on "The Nucleus Accumbens volume in drug-naïve schizophrenia" submitted in 2020.
- Co-guide of Dr. Harsh Pathak on Post-doctoral fellowship work in clinical neurosciences and therapeutics in schizophrenia on the topic "Effects of tDCS in patients with negative symptoms of schizophrenia – An open label study" in 2021.
- 3. Co-guide of Dr. Radhika Khelkar on Post-doctoral fellowship work in Brain stimulation on the topic ""Utility of digital phenotyping in predicting response to theta burst stimulation in depression" in 2021.
- 4. Co-guide of the psychiatry MD thesis of Dr. Visalakshi comparing the dimensions of obsessive compulsive symptoms in schizo-obsessive disorder and OCD submitted in 2021.
- 5. Co-guide of the ongoing DM thesis of Dr. Gaurav evaluating the changes in fNIRS based hemodynamics during cognitive flexibility with anticraving medications under the guidance of Prof. Vivek Benegal.
- 6. Co-guide of Dr.Rajkumar Sanahan on ongoing MD Psychiatry thesis "Response to clozapine and its predictors in treatment resistant schizophrenia: A retrospective chart review".
- 7. Co-guide of Dr.Kranti Kumar on ongoing MD Psychiatry thesis "Response to clozapine and its predictors in treatment resistant schizophrenia: A retrospective chart review".

#### Others

- 8. "Factors associated with treatment adherence in schizophrenia" submitted as a part of Mphil PSW dissertation by Mr. Md Shakeel under the guidance of Prof CRJ Khess at CIP, Ranchi submitted in 2009.
- 9. "Burden and expressed emotion in caregivers of schizophrenia and bipolar affective disorder patients" submitted as a part of DNB (Psychiatry) thesis by Dr. Seema Parija under the guidance of Dr OP Gangil to National Board of examinations submitted in 2014.
- 10. "Prevalence of metabolic syndrome in drug naïve patients with schizophrenia" submitted as a part of DNB (Psychiatry) thesis by Dr. D B Tiwari under the guidance of Prof Sudhir Kumar to National Board of examinations submitted in 2016.
- 11. "A study of factors associated with treatment adherence in patients suffering from schizophrenia" submitted as a part of DNB (Psychiatry) thesis by Dr. Shivaprasad D under the guidance of Dr A K Sisodia to National Board of examinations submitted in 2016.
- 12. "Clinical, Cognitive and Eye Movement Correlates of Insight Modulation by Add-On TDCS in schizophrenia" submitted as part of MD thesis by Dr. Dinakaran Damodharan under the guidance of Prof G Venkatasubramanian at NIMHANS submitted in 2016.
- "Effect of single session tDCS on auditory signal detection in schizophrenia" submitted as part of MD thesis by Dr. Soumya Selvaraj under the guidance of Prof G Venkatasubramanian at NIMHANS submitted in 2017.
- 14. "Effect of transcranial alternating current stimulation (tACS) on working memory in schizophrenia" submitted as part of MD thesis by Dr Vandita Shanbhog under the guidance of Prof. G Venkatasubramanian at NIMHANS submitted in 2018.

- 15. "Neurohemodynamic correlates of prefrontal function in bipolar disorder-fNIRS study of composite endophenotype" submitted as part of MD thesis by Dr Ram Kumar S under the guidance of Dr. Muralidharan K at NIMHANS submitted in 2018.
- "Clinical cognitive & neurobiological profile of clozapine-treated schizophrenia patients" thesis by Dr Sachin Nagendrappa under the guidance of Prof. G Venkatasubramanian at NIMHANS submitted in 2019.
- 17. "Eye movement tracking as endophenotype in first episode mania" thesis by Dr Daniel Ritish Paul under the guidance of Prof. G Venkatasubramanian at NIMHANS submitted in 2019.
- 18. "Study of montreal cognitive assessment (MoCA) and digit symbol substitution test (DSST) as a screening tool for evaluation of cognitive deficits in schizophrenia" thesis by Dr Mukesh Chand Daderwal under the guidance of Prof. G Venkatasubramanian at NIMHANS submitted in 2020.
- 19. "Studying the neurohaemodynamics of Panic Disorder" by Dr.Pavithra under the guidance of Dr.Manjunath submitted in 2020.
- "Studying the neurobiology of tDCS for persistent auditory hallucinations in schizophrenia" Partaken as a coresearcher in the PhD awarded theses of clinical psychologist Dr. Anushree Bose submitted in 2019.
- Mentored on Postdoctoral fellowship in brain stimulation work of Dr.Milind Thanki investigating the metaplastic effects of brain stimulation techniques by combining rTMS and HD-tDCS in 2019.
- 22. Mentored PhD awarded thesis of biotechnologist Dr. Harleen Chhabra on RCTs evaluating efficacy and neurobiology of tDCS and HD-tDCS in persistent auditory hallucinations submitted in 2020.
- 23. Mentored Mr. Raghuram on dissertation titled "Eye movement measures in schizophrenia" on partial fulfilment of BS-MS dual degree programme at the Indian Institute of Science Education and Research (IISER), Pune represents with study carried out at NIMHANS submitted in 2020.
- 24. Mentored PhD work of Psychiatrist Dr. Sowmya Selvaraj working on evaluating efficacy of tDCS in negative symptoms of schizophrenia under the guidance of Prof. Venkatasubramanian submitted in 2021.
- 25. Mentored PhD work of Clinician scientist Dr. Rujuta Parlikar working on evaluating the efficacy of HD-tDCS in auditory hallucinations in schizophrenia under the guidance of Prof. Venkatasubramanian submitted in 2021.
- 26. Mentored PhD work of Eng. Gaurav Bhalero evaluating the neurobiological markers of treatment response in schizophrenia using advanced machine learning techniques under the guidance of Prof. Venkatasubramanian submitted in 2021.
- 27. Mentored the DM thesis of Dr. Debanjan Banerjee evaluating the resting state markers of late onset depression under the guidance of Prof. PT Shivakumar submitted in 2021.
- 28. Mentoring the ongoing PhD work of Psychiatrist Dr. Shubhashini Rangarajan working on evaluating the utility of tDCS in MCI and Dementia under the guidance of Prof. PT Shivakumar.
- 29. Mentoring the ongoing PhD works of Psychiatrist Dr.SwarnaBuddha evaluating the role of Vagal nerve stimulation in schizophrenia.
- 30. Mentoring the ongoing PhD work of Psychiatrist Dr.Kiran Bagali evaluating the neurobiology of thought disorder in schizophrenia

- 31. Mentoring the ongoing PhD work of Psychiatrist Dr.Chitra U evaluating the neurobiology of social cognition through neuromodulatory techniques
- 32. Mentoring the DM thesis of Neurologist Dr. Subham Gupta evaluating "TMS EEG in idiopathic generalized epilepsy" under the guidance of Dr. Ajay Kumar.
- 33. Mentored PDF work of Dr. Suhas Satish on Post-doctoral fellowship work in clinical neurosciences and therapeutics in schizophrenia on the topic "Domiciliary use of tDCS in schizophrenia" working under the guidance of Dr.Venkatasubramanian