Tan Xiao Wei

Senior Research Fellow, Department of Mood and Anxiety, Institution of Mental Health

Research Interests:

- Neurostimulation
- Mood disorders
- Clinical trial

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Biography

I completed my medical degree in China in 2001 and obtained my PhD in National University of Singapore in 2007. I am skilled in advanced statistical analyzing and medical device operation. I had been trained with multiple research skills such as grant proposals writing, teaching students, scientific publication etc. Since I joined IMH in 2018, I had been actively involved in a large number of research projects in the area of mental health/illness. I had been working on several neurostimulation related clinical trials to develop novel and non-invasive brain neurostimulation treatment techniques for patients with psychiatric disorders to improve patients' treatment response, symptoms remission and quality of life etc. My research activities in those clinical trials include the patient recruitment, clinical assessment and supervised non-invasive brain stimulation interventions. I received practical Transcranial Magnetic Stimulation (TMS) training from the Black Dog Institute, Australia to enhance my TMS medical device operation skills and obtained approval to independently deliver TMS pulse on patients with psychiatric illness by medical board IMH. Currently I am leading the collaboration research network for advanced neurostimulation medical technologies in IMH with various internal and external research collaborators and industry partners.

Selected Publications

- **Tan XW**, Abdin E, Tor PC. Accelerated transcranial magnetic stimulation (aTMS) to treat depression with treatment switching: study protocol of a pilot, randomized, delayed-start trial. Pilot Feasibility Stud. 2021;7(1):104.
- **Tan, X. W**., Martin, D., Lee, J., & Tor, P. C. The Impact of Electroconvulsive Therapy on Negative Symptoms in Schizophrenia and Their Association with Clinical Outcomes. Brain Sci. 2022;12(5):545.
- **Tan XW**, Tor PC, Martin D, Loo C, Association of Anaesthesia-ECT time interval with ECT clinical outcomes: A retrospective cohort study. J Affect Disord. 2021;285:58-62.

- **Tan XW**, Oon LK, Tsang YY, Ong HS, Tor PC. A Pilot Study of Switching Electroconvulsive Therapy for Patients With Treatment Resistant Schizophrenia or Mood Disorder..J ECT. 2021;1;37(3):202-206.
- **Tan XW**, Chan CYW, Lum AWM, Lee ES, Mok YM, Fung DSS, Tor PC Association of cardiovascular metabolic risk factor measurements with psychiatric readmission among in-hospital patients with severe mental illness: a retrospective study. BMC Psychiatry. 2022 ;22(1):43.
- Tor PC, **Tan XW**, Martin D, Loo C. Comparative outcomes in electroconvulsive therapy (ECT): A naturalistic comparison between outcomes in psychosis, mania, depression, psychotic depression and catatonia. Eur Neuropsychopharmacol. 2021;51:43-54.
- Tang KWA, **Tan XW**, Tor PC A Retrospective Study of Patients Undergoing Acute Electroconvulsive Therapy for Predominately Manic or Mixed Episodes With and Without Lithium in Singapore. J ECT. 2021;37(4):243-246.

Notable Research Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
MOH Traditional Chinese Medicine Research grant. Acupuncture augmentation therapy for in-hospital patients with major depression disorder: a pragmatic, randomized controlled trial.	2021
Temasek Funding. Personalised Transcranial Magnetic Stimulation Treatment For Depression.	2023
NMRC Individual Research Grant New Investigator Grant (IRG NIG): An open label, single arm study of the efficacy of accelerated intermittent theta burst stimulation in schizophrenia patients with persistent negative symptoms.	2023

Translating Research Into Healthcare

My research interests include neurostimulation medical technologies and clinical trials in mental health. I have been actively involved in the setting-up and development of TMS-EEG and TMS-neuronavigational research platform in IMH to improve the treatment efficacy of patients with psychiatric disorders. I am current leading or overseeing several clinical trials related with neurostimulation interventional studies including:

1. A pilot study of intermittent accelerated burst transcranial magnetic stimulation (aTBS) to treat depression: a randomized, single-blind, delayed-start trial.

2. A Feasibility Test of Co-Registered Electroencephalogram (EEG) to Guide the Individualized Transcranial Magnetic Stimulation (TMS) Treatment for Patients with Drug Resistant Depression

3. Acupuncture augmentation therapy for in-hospital patients with major depression disorder: a pragmatic, randomized controlled trial.

4. A pilot study of intermittent accelerated burst transcranial magnetic stimulation (aTBS) to treat depression: a randomized, single-blind, delayed-start trial.

5. A Feasibility Test of Co-Registered Electroencephalogram (EEG) to Guide the Individualized Transcranial Magnetic Stimulation (TMS) Treatment for Patients with Drug Resistant Depression

6. Acupuncture augmentation therapy for in-hospital patients with major depression disorder: a pragmatic, randomized controlled trial.

7. Validation of a novel functional magnetic resonance imaging connectome targeting localization approach for precision psychiatry treatments -recruitment ongoing.

Our study results can be rapidly updated to the College of Psychiatrists, Academy of Medicine Singapore as well as published in a peer reviewed journal to enhance local and international neurostimulation treatment guidelines for patients with mental illnesses. There are also potential IP generation with our recently awarded study about a novel utilization of individualized fMRI coupled TMS technology to treat patients with treatment-resistant depression.