Nastaran Malmir

Ph.D. Candidate in Psychology

Academic Background

- **Ph.D. Student of Psychology**
  Islamic Azad University, Science and Research Branch, Tehran, Iran
- **M.Sc. in Clinical Psychology**
  Islamic Azad University, Science and Research Branch, Tehran, Iran
- **B.Sc. in Molecular Biology**
  Islamic Azad University, North Branch, Tehran, Iran

Personal Statement

Nastaran Malmir graduated with an M.Sc. in Clinical Psychology and is currently a Ph.D. candidate at Islamic Azad University, Science and Research Branch (ranked top 10 in entrance exams). Since 2010, she has been a member of the Neurocognitive Laboratory at the Iranian National Center for Addiction Studies (INCAS).
During her M.Sc. program, she worked as a graduate research assistant at the Psychiatry and Psychology Research Center of Tehran University of Medical Sciences (TUMS). Her thesis examined the effects of neural training on executive functions and symptoms in children with ADHD using local EEG, with results published in the *Iranian Journal of Psychiatry* (2015).
Her Ph.D. research focuses on modulating psychological and neural responses to food craving in individuals with obesity using transcranial direct current stimulation (tDCS) combined with functional MRI. This work aims to expand understanding of neurocognitive mechanisms underlying habitual behaviors, with a focus on top-down regulation through neuroimaging and neuromodulation techniques. Her Ph.D. is supported by the Cognitive Sciences and Technologies Council (CSTC), targeting the disruption of rigid habits.
Her academic interests combine neuroimaging modalities (e.g., fMRI, EEG) with neurocognitive interventions to better understand the mechanisms of human behavior, especially habitual behaviors, to inform clinical practice.

Research Interests

- Habitual behaviors and neurocognitive control
- Food craving and cue reactivity
- Interoception and self-regulation
- Translational neuroscience
- Executive functions and prefrontal-limbic interactions
- Neurostimulation and neuroimaging techniques

Research Skills & Expertise

- Clinical and cognitive assessment
- Behavioral neuroscience
- Brain mapping and neuroimaging (fMRI, EEG)
- Neurostimulation (tDCS, TMS)
- Data analysis
- Research project management
- Obesity and addiction studies

Key Projects & Publications

Key Research Projects (M.Sc. Program)

- **NeuroTrain-ADHD**
  Publication 1 (2015): Comparison of Sensorimotor Rhythm (SMR) and Beta Training on Selective Attention and Symptoms in Children with ADHD
  DOI: 10.1007/s00702-010-0524-2
- **NeuroDynamics-ADHD (2015)**
  Publication 2 (2015): EEG Complexity Analysis in Children with ADHD During a Cognitive Task
  DOI: 10.1080/13803395.2015.1119252

Key Research Projects (Ph.D. Program)

The NeuroFrame Review Series

- Publication 1 (2019): Transcranial Electrical and Magnetic Stimulation for Addiction Medicine: A Consensus Paper
  DOI: 10.1016/j.neuropharm.2019.107704
- Publication 2 (2020): fMRI and tES: A Systematic Review of Parameter Space and Outcomes
  DOI: 10.1016/j.pnpbp.2020.110149
- Publication 3 (2021): ContES Checklist for Concurrent tES-fMRI Studies
  DOI: 10.1016/j.jneumeth.2021.109135

Neuroscience-Informed Psychoeducation for Addiction Recovery

- Publication 4 (2021): The Effect of Neuroscience-Informed Psychoeducation on Self-Efficacy in People with Addiction
  DOI: 10.32598/bcn.2021.809.3

Current Project (Ph.D. Thesis)

NeuroCue-Obesity Project
Funded by the Cognitive Sciences and Technologies Council (CSTC), Grant No. 7761

- Publication 5 (2022):
  Transcranial Direct Current Stimulation to Modulate Brain Reactivity to Food Cues in Overweight and Obese Adults: Study Protocol
  DOI: 10.1186/s13063-022-06234-8
- Publication 6 (2024):
  Unraveling Interoceptive Processing and Action Dynamics in Food Cue Reactivity: An fMRI Study
  DOI: 10.1101/2024.10.11.24315350

Ongoing Project

Modulating Neural and Psychological Response to Food Craving Using tDCS: A Randomized Controlled Trial Using tDCS-fMRI Integration

Abstract:
Obesity is a global health challenge often accompanied by physical and mental comorbidities. Existing treatments frequently fail to achieve long-term success, with weight regain common. Novel neuroscience-based approaches are needed to understand the neural mechanisms driving overeating and obesity.
Food cue-induced craving (CIC) — defined as an irresistible urge to eat triggered by internal or external

stimuli — is a key factor in obesity maintenance and relapse. This double-blind randomized controlled trial investigates the acute effects of transcranial direct current stimulation (tDCS) on the neural substrates of food CIC.

Sixty individuals with obesity are randomized to receive active or sham stimulation targeting the dorsolateral prefrontal cortex (DLPFC). Pre- and post-intervention fMRI scans (structural, resting-state, and food cue exposure paradigms) assess brain changes. We hypothesize that tDCS enhances DLPFC's top-down control by modulating connectivity with limbic areas (amygdala, ventral striatum), critical nodes in reward circuitry, thereby improving executive function and craving regulation.

This project integrates neuroimaging and neuromodulation to advance safe, scalable, and effective interventions for obesity.

Clinical & Teaching Experience

Clinical Practice

Licensed psychotherapist with over a decade of experience in clinical assessment and psychotherapy. Completed 800+ hours of supervised clinical training in mental health settings.

Teaching Experience

- **Shahid Rajaee Teacher Training University:** Psychology of Learning, Educational Psychology
- **Islamic Azad University – Science & Research Branch:** Developmental Psychology I & II, Psychotherapy Theories, Psychopathology I & II, Clinical Psychology
- **Islamic Azad University of Eslamshahr:** Social Psychology, Developmental Psychology I & II, Psychopathology I & II, Counseling Techniques, Behavior Therapy

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Personal Profiles

- **LinkedIn:** https://ir.linkedin.com/in/nastaran-malmir-98160251
- **ResearchGate:** https://www.researchgate.net/profile/Nastaran-Malmir
- **Google Scholar:** https://scholar.google.com/citations?hl=en&user=D613LhoAAAAJ
- **ORCID:** https://orcid.org/0000-0003-2906-1336