Conference: 11th IBRO World Congress of Neuroscience

Website: https://ibro2023.org/

Committee: https://ibro2023.org/programme-committee/

Location: Granada, Spain

Date: 09-13.Septemeber 2023

Type: International

Title: Can Transcranial Electrical Stimulation modulate gambling and gaming behaviors?

Authors: Stanković, M., Bjekić, J., Filipović, S.R.

Affiliation: University of Belgrade, Institute for Medical Research

Abstract: Gambling Disorder (GD) and Internet Gaming Disorder (IGD) are formally recognized behavioral addictions with a rapidly growing prevalence and limited treatment options. Recently, transcranial electrical stimulation (tES) techniques have emerged as potentially promising interventions for improving treatment outcomes by ameliorating cognitive functions implicated in addictive behaviors. To systematize the current state of evidence and better understand whether and how tES can influence gambling and gaming-related cognitive processes, we conducted a PRISMA-guided systematic review of the literature focusing on tES effects on risky gambling and gaming behaviors in a diverse range of population samples, including healthy participants, participants with GD and IGD, as well as substance abuse addictions. Following the literature search in three bibliographic databases (PubMed, Web of Science, and Scopus) 40 publications have been included in this review, with 26 conducted on healthy participants, six focusing on GD and IGD patients, and eight including participants with other addictions. Most of the studies targeted the dorsolateral prefrontal cortex using transcranial direct current stimulation (tDCS). The results indicated that tES could change gambling and gaming behaviors and positively influence GD and IGD symptoms. However, the results varied considerably depending on the stimulation parameters, sample characteristics, as well as outcome measures used. We discuss the sources of this variability and provide further directions for the use of tES in the context of GD and IGD treatment.