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Poster Presentation Review

Transcranial Direct Current Stimulation (tDCS) for the Treatment of PTSD: A Brief Review of Effectiveness

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Abstract

Cognitive neuroscience prefers a reductionist approach to normal and abnormal brain functions. So, it tries to reducing causes and indices of cognitive and neural processes, in order to increases the accuracy in investigation and manipulation of variables. As a comparison, common diagnostic criteria for mental disorders utilize multidimensional global criteria that existence of some non-overlapping symptoms from a larger number of symptoms is vital for diagnosis. With regard to the fact, many groups of heterogeneous patients classified under a single diagnosis, though show combination of the different symptoms and various pathology and etiology. The treatment process is often-but not always - based on this overall classification as well and in many cases is accompanying a nonselective modification. Although, cognitive neuroscience techniques as new ones has been used widely for clinical purpose but, traditional methods for evaluating them led to doubts about the applicability and effectiveness of these techniques. It seems such new techniques should be judged based on its micro-oriented capabilities on neural and cognitive processes. tDCS is a noninvasive, pretty cheap, without serious side effect and relatively effective methods for changing some neuropsychologic functions and treatment some symptoms of psychological (and neurologic) problems. In this technique passage of extremely weak electrical current through the scalp stimulates (a nodal and cathodal) special regions of the brain. According to the progress of this technique toward the HD-tDCS and tACS has been providing more opportunities for multifocal intervention, more precise regions and also diver's kinds of stimulation. Despite the fact that tDCS haven't FDA approved yet for treatment of disorders, but regarding many research about its effects on cognitive functions and different psychological indices, it can be used as a complementary treatment tool. Although there is a little evidence about anxiety disorders and especially PTSD treatment by tDCS, some studies are under running. In addition to brief review on the studies that focused directly on PTSD, there has been noted evidence in effectiveness of neurocognitive rehabilitation and neurotherapy on many related brain processes in which provide a guide to depict proper intervention protocols. Among critical applications of tDCS we could point to changes some symptoms that are common in PTSD and anxiety disorders (for example, memory impairments, severe emotional distress, negative effect and headache). Therefore, concerning the heterogeneity in symptoms of this disorder, using tDCS can be potentially as a new supporting method that alleviates some important symptoms. Just on this basis, the possible micro-oriented protocols could propose and evaluate at next stage.

Keywords: tDCS, Treatment of PTSD, tDCS Efficiency, Micro-Oriented Approaches, Reduce Symptoms of PTSD.

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