

## **Determining the Efficacy of Neurofeedback Intervention on Anxiety and Stress Symptoms in Migraine Patients**

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### **Extended Abstract**

#### **Aim**

Migraine is the third most prevalent medical condition worldwide (Brace & Liu, 2016) and is a neurovascular disorder characterized by recurrent unilateral migraines accompanied by nausea, anorexia, vomiting, diarrhea, photophobia, and phonophobia. In 60% of instances, migraine pain is unilateral, while in 40% it is bilateral. Before spreading to the parietal and occipital regions, the pain is most pronounced in the forehead-temporal and eye regions. Any area of the head or face may be affected, including the temples, upper or lower mandible or teeth, cheekbones, and anterior neck region. Migraine sufferers exhibit anxiety, depression, perfectionism, ambition, and extreme discipline in their daily activities. Therefore, if there is an effective and readily available treatment without adverse effects, it will be of great assistance to these individuals and their families, and the social economy will be relieved of a substantial burden. Neurofeedback is one of these non-pharmaceutical treatment methods. As a therapeutic method, neurofeedback has garnered considerable attention in recent years.

#### **Methodology**

The semi-experimental descriptive research method included a pre-test, post-test, and follow-up design, as well as an experimental and control group. This study's statistical population comprised all migraine patients who visited psychological clinics in Tehran in 2017-2018 and for whom records were available. One clinic was selected from each region (north, south, east, and west) of Tehran province, and ten patients were randomly selected from each clinic. Beck's stress and anxiety symptoms tests (pre-test) were administered to the participants, and those whose scores were one standard deviation above the average were included in the study. Due to Delavar's (2013) proposal of a minimum sample size of 15 persons in each group for experimental research, the statistical sample of the study consisted of 30 individuals who were randomly selected as available and homogenized into two groups. Two experimental and control groups will be utilized. The admission requirements were adequate general intelligence and scores one standard deviation above the average. The exclusion criteria for the study included the use of substances or medications that alter consciousness, non-cooperation with the administration of tests, and the presence of severe mental disorders. Due to the nature of the research and the interval scale of the dependent variables, the variance analysis test with mixed design was used in the BioGerap Infiniti version 6 software environment for data analysis in the inferential statistics segment of this study.

#### **Findings**

Neurofeedback reduced physical symptoms ( $P < 0.01$ ,  $F = 12.73$ ), mental/physical symptoms ( $P < 0.01$ ,  $F = 8.87$ ), and behavioral symptoms ( $F = 0.01$ ) in the experimental group of the current study. Stress and anxiety ( $P < 0.01$ ,  $F = 10.12$ ) were at a significance level of 0.01.

#### **Conclusion**

In the analysis of the findings of the present study, it was concluded that neurofeedback permanently reduces the physical, mental/emotional, and behavioral symptoms of stress and anxiety in migraine patients.

**Keywords:** Anxiety, Migraine, Neurofeedback, Stress.