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Evaluation of Alpha/Theta Neurofeedback Composed with Scott and Kaiser Protocol as a Treatment for Substance Use Disorders

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The use of neurofeedback as an operant conditioning paradigm has revealed that participants are able to gain some control over particular aspects of their electroencephalogram (EEG). Based on the association between alpha (8–13 Hz) and theta (4–8 Hz) with a hypnagogic state, and beta (15–18 Hz) and/or SMR (12–15 Hz) augmentation and theta (4–7 Hz) and high beta (22–30 Hz) suppression with attention processing and relaxation, we investigated the possibility of training addicted individuals in order to enhance their mental health and thus increase the frequency of individuals with prognosis of substance use disorder. In comparison with a control group, Thirty-four males (age: 28.25 ± 3.12 years) diagnosed with Substance Use Disorder (opium addicted) were randomly assigned to Neurofeedback (NF) group (N=16) and control group (N=18). Participants were assessed prior and subsequent to the training process on two tests of Rapp-Dapkin InstTest and the Depression Anxiety Stress scale (Lovibond & Lovibond, 1995). The results of analysis of variance with repeated measures showed that, after twenty sessions of neurofeedback, the treatment group exhibited a significant and clear improvement in depression and anxiety, but there were no significant differences between the two groups in terms of stress variables. Also, negative *m*ie in urinalysis results in treatment group were higher than those for the control group (43.8% vs. 22.2%). However, this difference between neurofeedback and control group was not significant (*chi-square* = 1.79, *p* = 0.18). This study suggests that SUD individuals can learn to improve their depression and anxiety and to a lesser extent to withdraw from substance use. We discuss possible mechanisms that could mediate such effects and indicate a number of directions for future research.