

The Effect of Self-Hypnosis on Attention and the Pattern of Electroencephalography in Candidates for University Entrance Examination

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Introduction

Attention is one of the important structural aspects that play a fundamental role in the system of intelligence, memory, and perception (Glass & Holyoak, 1989). Attention is referred to as a complex mechanism of the mind that includes things such as focusing on or engaging with a goal, maintaining or tolerating and being alert for a long time, encoding the characteristics of stimuli, and changing the direction of focus from one goal to another. Some research results have also shown that attention deficit is one of the main educational problems (Swanson & Jerman, 2007). Students who are academically disadvantaged are more likely than other students to commit crimes, use drugs, have family and mental health problems, and are sexually abused (Wegner et al., 2008). Hypnotherapy has been shown to increase self-confidence, reduce daily stress, and improve quality of life as a method for improving overall mental health. Combining this method with other psychotherapies has increased its effectiveness. Baylor University, 2020)

Self-hypnosis is simply a focused state of mindfulness that allows one to make the most of their mental capacities and abilities. In a final analysis, self-hypnosis is practically a tool that can be used to make better use of skills or techniques of self-control. Self-hypnosis is able to focus the scattered

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forces of the mind on the subject and produce enormous power. In fact, self-hypnosis is a state that helps a person focus and concentrate on a subject. The purpose of the present study was to evaluate the effect of self-hypnosis on attention and the pattern of electroencephalography in candidates for university entrance examination. Since the entrance exam has a very wide impact on the lives and academic and career future of candidates, and high attention skills during the entrance exam are of great importance for the success of candidates, and no research has been conducted in the country to determine the effect of self-hypnosis on attention, the present study aimed to determine the effectiveness of self-hypnosis on attention and electroencephalography patterns of entrance exam candidates.

Method

The aim of this research was to investigate the effectiveness of self-hypnosis on attention and the electroencephalography pattern of university entrance exam candidates. This research was experimental with a pre-test-post-test design with a control group. The statistical population in this study consisted of all individuals visiting university entrance exam counseling centers in 2019 in Shiraz. The sample included 24 male individuals aged 18 to 20, selected using purposive sampling from the counseling center. All male visitors who daily attended the university entrance exam counseling centers in Shiraz were selected based on the admission criteria and the willingness of the participants to cooperate in the study. The inclusion criteria for the participants were: no history of epilepsy (due to the high risk of seizures during self-hypnosis), not taking any medication, no smoking addiction, and no caffeine consumption prior to the start of the research (due to the effects of drugs, smoking, and caffeine on EEG signals), as well as the participants' consent. The sample size was determined to be 24 male individuals, with 12 randomly assigned to the control group and 12 to the experimental group. Participants were assured that at any stage of the research, if they did not wish to cooperate, they could exit the study without any issues, and this was communicated during the informed consent process.

Results

The results of the multivariate analysis of covariance test in the control and experimental groups show that the groups differ significantly from each other in at least one of the dependent variables. The results of the pre-test and post-test comparison showed that the effects of intervention on the experimental group were significant. The F-statistic from the univariate analysis of covariance is significant for both the attention variable ($F= 39.91$,

$p= 0.001$) and the electroencephalography (EEG) pattern variable ($F= 171.95$, $p= 0.001$). In other words, there is a significant difference in attention and EEG patterns between the control and experimental groups.

Discussion

Using the self-hypnosis method can be very effective in increasing the attention of normal people, and due to its non-invasive nature, this method has no side effects for people. Due to the effectiveness of self-hypnosis on attention and the pattern of electroencephalography in candidates for the university entrance, self-hypnosis can be used in entrance exam preparation centers to improve the attention of candidates. The results of this first study are consistent with the findings of Brayet et al. (2011).

This study showed that being in a hypnotic trance state and providing attention-enhancing suggestions can have a positive effect on the electroencephalographic pattern related to attention. The present study faced some limitations. Given that the present study was conducted on male volunteers, its results cannot be generalized to female volunteers, and also the subjects of the study were college entrance exam candidates between the ages of 18 and 20, its results cannot be generalized to students of other grades. Finally, it is suggested that the self-hypnosis method be taught in college entrance exam preparation institutions by psychologists proficient in hypnotherapy.

Keywords: attention, electroencephalography, self-hypnosis, Stroop effect

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