EFFECTIVENESS OF AUTOGENIC TRAINING METHODS IN ANXIETY DISORDERS

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Abstract

Autogenic training (AT) is a relaxation technique that utilizes systematic exercises to induce overall bodily relaxation. It is applied alongside conventional medical treatments and serves as a psychological method to reduce symptoms associated with various chronic conditions while improving the patient's overall well-being. The primary aim of this systematic analysis is to evaluate the effectiveness of autogenic exercises in enhancing psychological stability, improving quality of life, and reducing negative emotional states among individuals with chronic health problems. Specifically, this study focuses on investigating the efficacy of autogenic training methods in improving the psychophysiological condition of individuals experiencing anxiety disorders.

Conclusion

The results of this study indicate that autogenic training significantly improves the psychophysiological condition of individuals with anxiety disorders. The training sessions led to a reduction in emotional stress, enhancement of self-regulation and stress adaptation skills, and normalization of autonomic (vegetative) functions. Additionally, participants experienced decreased levels of anxiety, improved control over fear responses, and overall strengthening of psychological stability. These findings confirm that autogenic training can serve as an effective psychotherapeutic tool for individuals suffering from anxiety disorders.

Keywords

Anxiety disorder, Anxiety, Fear and phobic states, Psycho-emotional stress, Autogenic training, Psychotherapeutic rehabilitation, Stress

Introduction

Over the past decade, rapid advances in science and technology, increased competition in the labor market, and rising socio-economic demands have led to a substantial increase in psychological load on individuals. In modern society, individuals are required to make decisions

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quickly, handle multiple tasks simultaneously, and constantly adapt, which contributes to the development of chronic psycho-emotional stress [1,4]. As a result, stress has become an integral part of daily life and poses the risk of shifting from a short-term adaptive mechanism to a chronic pathological condition. Continuous work-related stress has been found to contribute not only to cardiovascular diseases, arterial hypertension, and digestive system disorders, but also to mental health disturbances, particularly anxiety and depressive states [2,3,16,17].

Epidemiological studies indicate that individuals exposed to high levels of occupational stress have a significantly increased risk of illness and accidents, with the likelihood of temporary or permanent loss of work capacity due to illness being 1.5–2 times higher than in individuals with lower stress levels [1,10,14,15]. According to research conducted in the European Union, 50–60% of lost workdays are directly associated with stress [1,2,4,6,9]. The impact of stress on the body is mediated through complex neuroendocrine mechanisms. Psycho-emotional stress activates the hypothalamic-pituitary-adrenal (HPA) axis, resulting in increased secretion of catecholamines and cortisol. Consequently, heart rate and arterial blood pressure rise, muscle tone increases, digestive activity is disrupted, and anxiety, fear, and affective instability emerge [18]. If the stress response is short-term, it can mobilize the body's adaptive resources and enhance work performance. However, when stressors persist over a prolonged period and adequate compensatory mechanisms are not activated, this condition can create a predisposition for the development of psychosomatic and mental disorders [11,12]. Individual variability in stress responses is determined by biological, psychological, and social factors. Therefore, the treatment and prevention of stress-related conditions require a comprehensive, multidisciplinary approach [1]. In modern clinical practice, alongside pharmacotherapy, non-pharmacological methods—such as psychotherapy, relaxation techniques, meditation, physical exercise, and autogenic training—are widely applied [20].

Anxiety-phobic disorder is currently one of the most prevalent mental disorders. According to the World Health Organization, its prevalence in the general population is estimated at 7–10% [8]. This disorder is characterized by persistent feelings of anxiety, autonomic dysfunction, fear attacks, and reduced quality of life, negatively affecting work performance and social adaptation [5,11]. Recent studies emphasize that relying solely on pharmacological interventions is insufficient for treating anxiety disorders and highlight the importance of developing patients' independent stress-management skills [10,11]. In this context, autogenic training (AT) has gained attention as an effective and safe non-pharmacological intervention.

Autogenic training, developed by Johannes Schultz in the early 20th century, is a psychotherapeutic method based on self-suggestion to achieve a deep state of relaxation [12]. This technique activates the parasympathetic nervous system while reducing sympathetic activity, thereby restoring autonomic balance and regulating stress responses [15]. Numerous clinical studies have demonstrated that autogenic training decreases anxiety levels, stabilizes heart rate, reduces muscle tension, and improves sleep quality in individuals with anxiety disorders [13]. International meta-analyses indicate that regular autogenic training can reduce anxiety by 30–45% and lower cortisol levels [14,17]. However, studies assessing the effectiveness of autogenic training in anxiety disorders vary in methodological approaches, and the comparative impact of short- versus long-term interventions has not been systematically evaluated [5]. In particular, alongside psychological outcomes, the assessment of physiological biomarkers—such as heart rate variability and cortisol levels—remains a pressing issue [18]. Therefore, a comprehensive evaluation of the effectiveness of autogenic training in anxiety disorders, its impact on

psychological and physiological stress responses, and its applicability in clinical practice represent a relevant and significant scientific problem.

Materials and Methods

Study Design and Overview. This study was aimed at comprehensively evaluating the effects of autogenic training on psychological and physiological parameters in individuals with anxiety disorders. The research was conducted as a prospective, randomized, controlled trial. During the study, changes in anxiety and depression levels, as well as dynamics of physiological indicators related to autonomic nervous system activity, were analyzed following autogenic training intervention. The study design was based on widely accepted clinical-psychological approaches for assessing psychological and somatic stress responses and was developed in accordance with current scientific recommendations.

Participants and Selection Criteria. The study included individuals aged 18–60 years who had been diagnosed with an anxiety disorder. Diagnosis was established based on clinical interviews, medical records, and standardized psychodiagnostic criteria. All participants were fully informed about the study procedures and provided written informed consent prior to participation.

Inclusion criteria included:

• Presence of clinical symptoms of anxiety disorder;

• Mild to moderate levels of anxiety;

• Ability to regularly participate in autogenic training sessions during the study;

• Age between 18 and 60 years.

Exclusion criteria included:

• Severe psychiatric disorders (e.g., psychosis, severe depressive episodes, bipolar affective disorder);

• Severe neurological or somatic conditions;

• Active use of psychotropic medications;

• Prior regular practice of autogenic training or similar relaxation techniques.

Group Formation and Randomization

Participants were randomly assigned into two groups:

• Intervention group: participants engaged in the autogenic training program;

• Control group: participants did not receive autogenic training and were limited to general healthy lifestyle recommendations.

Randomization was performed to minimize the influence of external factors on study outcomes and to ensure baseline comparability between groups.

Autogenic Training Intervention

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Autogenic training was conducted according to the classical protocol developed by Schultz. The training aimed to restore functional balance between the central and autonomic nervous systems.

Autogenic Training Protocol

The training consisted of six standard stages:

1. Inducing a sensation of heaviness in the muscles;

2. Generating a feeling of warmth in various body parts;

3. Calming the heart rate and stabilizing its rhythm;

4. Consciously regulating the breathing process;

5. Evoking a sensation of warmth in the abdominal area;

6. Inducing a pleasant feeling of coolness in the forehead region.

Sessions were conducted once daily, five times per week, each lasting 15–20 minutes. The overall intervention period was 8 weeks. Training was carried out in a quiet environment, free from external distractions, under the supervision of an instructor or with the assistance of an audio guide.

Psychological Assessment Methods

To assess participants' psychological state, standardized psychodiagnostic scales widely used in clinical practice were employed. Assessments were conducted at baseline and at the end of the intervention.

The following indicators were evaluated:

• Level of anxiety;

• Depressive symptoms;

• Subjective psychological well-being.

These measures allowed for the evaluation of the effects of autogenic training on emotional state.

Physiological Assessment Methods

To determine physiological responses to stress, parameters reflecting autonomic nervous system activity were analyzed. Particular attention was given to heart rate variability (HRV), as it is a sensitive biomarker for assessing the balance between the sympathetic and parasympathetic nervous systems. HRV indicators were recorded at baseline and after the training program, and changes in their dynamics were analyzed.

Statistical Analysis

Collected data were processed using statistical software. Parametric and non-parametric tests were applied depending on the distribution of the data. Results were presented as mean values ± standard deviation. Differences between groups were considered statistically significant at $p < 0.05$.

Ethical Considerations

The study was conducted in full compliance with bioethical principles. Participants' personal data were kept confidential, and their rights were fully protected throughout the research process.

Results

Baseline Characteristics of Participants

At the start of the study, no statistically significant differences were observed between the intervention and control groups in terms of baseline psychological and physiological parameters ($p > 0.05$). This indicates that the groups were comparable at baseline and that the observed effects could be attributed to the autogenic training intervention. At baseline, participants in both groups exhibited above-normal average anxiety levels, as well as signs of autonomic dysfunction, including increased heart rate, feelings of internal tension, and sleep disturbances.

Effect of Autogenic Training on Anxiety Levels

By the end of the intervention, participants in the autogenic training group demonstrated a significant reduction in anxiety levels. While higher and moderate levels of anxiety predominated prior to training, post-intervention assessments showed that anxiety levels generally decreased to mild or normative ranges. Statistical analysis confirmed that the reduction in anxiety within the intervention group was statistically significant ($p < 0.05$). In contrast, the control group showed only minor changes in anxiety levels, which were not statistically significant ($p > 0.05$).

Dynamics of Depressive Symptoms

The intervention group also exhibited positive changes in depressive symptomatology. Participants with subclinical depressive symptoms at baseline showed improved mood stability and enhanced emotional state by the end of the training. No significant reduction in depressive symptoms was observed in the control group, indicating that general lifestyle recommendations alone were insufficient to meaningfully affect depressive states.

Changes in Autonomic Nervous System Indicators

Physiological assessment confirmed the positive effect of autogenic training on autonomic nervous system function. In the intervention group, heart rate variability indicators reflected increased parasympathetic activity and decreased sympathetic influence. These changes suggest improved stress adaptability and enhanced internal regulatory mechanisms. In the control group, no significant changes in autonomic parameters were observed.

Subjective Psychological Well-Being

By the end of the intervention, participants in the autogenic training group demonstrated a significant increase in overall psychological well-being. Participants reported enhanced inner calm, improved sleep quality, and reductions in nervousness and tension. In the control group, slight positive changes in subjective well-being were observed; however, these changes were not statistically significant.

Between-Group Comparisons

At the conclusion of the study, statistically significant differences were observed between the intervention and control groups in terms of anxiety levels, depressive symptoms, and autonomic nervous system indicators ($p < 0.05$). This finding confirms the efficacy of autogenic training as an effective approach for managing anxiety-phobic disorder.

Overall Analysis of Results

The findings support the effectiveness of autogenic training in stabilizing emotional state, reducing autonomic dysfunction, and enhancing overall psychological well-being. The intervention appears to activate adaptive stress response mechanisms and improve self-regulation skills, thereby alleviating the symptoms of anxiety-phobic disorder.

Discussion

The results of this study demonstrate the high efficacy of autogenic training techniques in individuals with anxiety-phobic disorder. The data confirm that autogenic training not only reduces subjective anxiety levels but also improves psychophysiological functioning by stabilizing autonomic nervous system activity. A statistically significant reduction in anxiety was observed in the intervention group, which can be attributed to the activation of self-regulation mechanisms through autogenic training. Regular practice of autogenic exercises led to muscle relaxation, normalization of breathing, and stabilization of cardiovascular function. These processes contribute to restoring autonomic balance and reducing excessive sympathetic nervous system activity. The obtained results are consistent with previous scientific studies. Several authors have noted that the application of autogenic training in individuals with anxiety reduces central nervous system excitability, enhances the sense of inner calm, and increases stress resilience. Additionally, autogenic training is recognized as a non-invasive, safe, and widely applicable psychotherapeutic method.

The observed reduction in depressive symptom levels also highlights one of the key advantages of autogenic training. Considering that anxiety-phobic disorder is often accompanied by depressive conditions, the complex effects of this method hold significant clinical relevance. Autogenic training stabilizes the emotional background, reduces negative thinking, and promotes positive psychological adaptation. Positive changes in autonomic nervous system indicators confirm the physiological effectiveness of autogenic training. In particular, increased parasympathetic activity, as reflected in heart rate variability, indicates improved adaptive capacity to stress. This effect contributes to the reduction of autonomic imbalance, which plays a critical role in the pathogenesis of anxiety-phobic disorder. The absence of significant positive changes in the control group suggests that the effects observed are not incidental but directly associated with the autogenic training intervention. This supports the use of autogenic training as an independent or complementary therapeutic approach for the treatment and prevention of anxiety-phobic disorder. At the same time, certain limitations of the study should be noted. The relatively small sample size and the short duration of follow-up limit the ability to fully assess long-term effectiveness. Future studies conducted on larger populations with extended follow-up periods would provide a deeper understanding of the sustained therapeutic effects of autogenic training.

Conclusion

This study aimed to evaluate the psychological and physiological effectiveness of autogenic training in individuals with anxiety-phobic disorder. The findings allow the following key conclusions to be drawn:

1. Positive Effects on Psychological State: Autogenic training significantly reduced anxiety levels in the intervention group. During the study, initially high and moderate anxiety scores decreased to mild or normative levels. Additionally, depressive symptom levels were reduced, indicating that autogenic training not only alleviates anxiety but also enhances emotional stability. Assessments of subjective psychological well-being confirmed that participants experienced increased inner calm, improved sleep quality, and reduced levels of nervousness.

2. Effects on Autonomic Nervous System Activity: Physiological indicators, specifically heart rate variability (HRV), showed increased parasympathetic activity and reduced sympathetic activity in the intervention group. These results demonstrate that autogenic training has a significant effect on enhancing the body's stress adaptability and reducing autonomic imbalance. No significant changes were observed in the control group, confirming that the observed effects are specifically attributable to the autogenic training intervention.

3. Between-Group Comparisons and Statistical Significance: While baseline assessments showed no significant differences between the intervention and control groups, post-intervention evaluations revealed statistically significant differences in anxiety levels, depressive symptoms, and autonomic indicators ($p < 0.05$). This confirms that autogenic training is a robust and effective method for alleviating anxiety-phobic disorder.

4. Therapeutic Significance of Autogenic Training: The results indicate that autogenic training stabilizes emotional state, enhances stress resilience, and develops self-regulation skills by balancing central and autonomic nervous system activity. This method can be recommended as a non-invasive, safe, and clinically effective psychotherapeutic approach for individuals with anxiety-phobic disorder.

5. Practical Recommendations and Future Research: The relatively short duration of observation and the limited sample size restricted the ability to fully assess long-term effectiveness. Therefore, future studies with larger populations and extended follow-up periods are needed to further explore the sustained therapeutic effects of autogenic training. Additionally, combining autogenic training with other psychotherapeutic methods may allow the development of comprehensive treatment strategies.

Overall, the findings of this study clearly demonstrate that autogenic training is an effective method for improving psycho-emotional state, reducing depressive symptoms, and stabilizing autonomic nervous system function in individuals with anxiety-phobic disorder. This method not only enhances quality of life but also activates adaptive stress mechanisms and contributes to the development of self-regulation skills.

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