

THE EFFECTIVENESS OF MUSIC THERAPY AS A NON-DRUG APPROACH TO THE CORRECTION OF VARIOUS PATHOLOGICAL PROCESSES IN THE BODY

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Abstract

Music therapy is one of the types of additional and alternative medicine. Music therapy is the use of music and/or its elements: sound, rhythm, melody, harmony, dynamics and tempo for therapeutic purposes. Music therapy is an integrative method of treatment that affects the progress of various pathological processes in the body. All activities related to music can have a therapeutic effect, but only music therapy like science and technology has clear therapeutic goals, and this is the only area of knowledge that uses music for therapeutic purposes. Thus, the use of music is an additional therapeutic tool in the treatment of various nervous diseases, cardiovascular, endocrine, excretory systems and is an effective non-drug approach to the correction of various pathological processes in the body.

Keywords: *musical thinking, influence of music on consciousness, instrumental performance, methods of music therapy.*

Music therapy is one of the types of additional and alternative medicine. Music therapy is the use of music and/or its elements: sound, rhythm, melody, harmony, dynamics and tempo for therapeutic purposes [29]. Music therapy is an integrative method of treatment that affects the progress of various pathological processes in the body. All activities related to music can have a therapeutic effect, but only music therapy like science and technology has clear therapeutic goals, and this is the only area of knowledge that uses music for therapeutic purposes.

Music therapy is an important topic for research in various fields of anesthesiology [19]. Music therapy has a "light anxiolytic" impact, which is why the use of music therapy method before the surgery can reduce anxiety, stress and fear. The use of preoperative methods of music therapy helps to reduce the need for the use of postoperative narcotic analgesics and intraoperative sedation [9].

Thus, in a number of studies it has been found that music therapy has positive effect on the postoperative pain treatment [20, 10] to reduce the need for sedation and anesthesia during surgical and endoscopic procedures [2, 30], to reduce the level of anxiety in critically ill patients on mechanic ventilation of the lungs [18, 15], to reduce the level of endogenous stress after myocardial infarction [33]. This evidence suggests that proper use of music therapy can greatly reduce postoperative pain and anxiety, as well as reduce the intake of narcotic analgesics. According to the data of the scientific publication [27] it is recommended to add to nursing protocols using methods of music therapy as an alternative non-drug approach to postoperative pain correction.

In the study [24] it was found that music therapy as a non-drug approach has a beneficial effect on the treatment of spinal pain. The study involved 60 patients (35 women, 25 men) aged 40 to 55 years with a diagnosis of anterior, posterior or anterior spondylosis. Patients were randomized to the I group (music group), which, against the background of standard pharmacotherapy and necessary care procedures, used music therapy and the II group (control group), which, against the background of standard pharmacotherapy and necessary care procedures, did not apply music therapy methods. Both Group I and Group II

demonstrated significant differences in degree and direction of changes in visual-analog scale pain estimates (VAS) from before and after intervention ($P = 0.01$). The pain level of VAS increased somewhat in the II control group (to 5.87 from 5.20), but decreased by more than 1 points in the I music group (to 5.09 from 6.20). However, in this study there were no differences in the effect on the level of hospital anxiety, anxiety, depression and kinesiophobia between the group, which used music therapy methods and the group without musical therapeutic intervention.

In the study, which was carried out on mechanically ventilated patients on the Intensive Care Unit, the expediency of the use of music therapy methods was established [13]. Another study [34] analyzed the postoperative music therapy effectiveness in order to reduce early postoperative pain, relieve early postoperative anxiety, prolong sleep time and improve the sleep quality of patients after mechanical replacement of the mitral valve and found that music therapy can be an effective measure to reduce early postoperative pain, relieve early postoperative anxiety.

Also, another blind randomized controlled clinical trial [28] found that daily listening to music can help restore cognitive function and mood after a stroke. For example 60 patients in the acute recovery phase after stroke of the middle cerebral artery of the left or right hemispheres served as a sample group. All patients received standard drug therapy and underwent rehabilitation. A group of patients who have been used music therapy methods for 2-months has been selected. Control was served by patients who did not use methods of music therapy. As a result of the study, it was found that in the group of patients who used music therapy methods, verbal memory was restored and attention was concentrated in relation to the control group. The band also felt less depressed and confused than the control group. These results demonstrate for the first time that listening to music early after a stroke can increase cognitive recovery and prevent negative mood.

In another study of the effectiveness of music therapy methods in patients with acute cerebral circulatory disorders, it has been found that rhythmic auditory stimulation can be useful for

improving walking parameters in patients with stroke, including walking speed, rhythm, step length and walking symmetry [4].

In another study, patients who underwent early neurological rehabilitation after a stroke without significant previous musical training were taught to play the piano by studying simple finger exercises and studying children's songs. The duration of this course of medical therapy was 10 sessions for half an hour. Patients first received three individual therapy sessions, and then continued in pairs. The pairs of patients were divided into two groups. Patients of one group played synchronously (group together), while patients of the other group played one by one (group by one). To assess the recovery of Fine motor Skills, patients performed standard clinical tests, such as a Nine-Hole Peg Test (9HPT), the speed and regularity of tapping with the index finger, and tapping with the metronome. The mood of patients was evaluated by using The Profile of Mood States (POMS). As a result of the study, it was found that both groups showed improved control of Fine motor Skills. During finger tapping using a metronome, patients in both groups improved significantly. Mood tests have shown decreased depression and fatigue in both groups. During the therapy, patients in the group evaluated their partner as more likeable, than the group together on a visual-analog scale. The above indicates that rehabilitation after stroke with the help of music therapy methods can improve the control of Fine motor Skills and mood not only separately, but also in pairs of patients. Patients who played by tum and not simultaneously tended to show more improvement in Fine motor Skills [32].

The study [8] analyzed the importance of alternative practices, such as playing an instrument (piano, violin, etc.), singing or performing guided musical exercises as a therapeutic activity for the elderly with Parkinson's disease. Also, another study clearly demonstrated the favorable effect of music therapy on motor parameters in patients with Parkinson's disease, Alzheimer's disease and multiple sclerosis [12, 6, 3].

Music has also been able to improve mental state and social functioning in a wide range of mental disorders, including but not limited to

depression, anxiety, schizophrenia, autism and dementia [12, 3].

Another study found that improving cognitive functions especially memory and increasing serum dopamine levels in the elderly after listening to music with Balinese flute as the main tool [17].

In the study [11] involving methods of music therapy: musical recreation, musical improvisation, musical composition, listening to music, receptive experience [5] was found reducing depression symptoms and improvement the quality of life in the patients on hemodialysis. And the meta-analysis of the data [14] also suggest that musical intervention effectively reduces anxiety symptoms in patients with hemodialysis.

Rhythm in music can structure behavior while directly affecting emotions and changing their physiological functions, such as heart rate, muscle tone, blood pressure and breathing. Listening to music, also widely used to relieve stress in all fields of medicine, is usually a reliable and effective treatment for critically ill patients [23, 26, 31].

In dentistry, it has been proved that the use of music reduces the physiological parameters of anxiety in patients during cleaning and extraction of teeth. One of the most objective and simple ways to measure stress and anxiety is to use cortisol in saliva. Studies have shown that music significantly reduces the level of cortisol in saliva during simulated situations of dental care, such as showing the patient the needle of a carpal syringe and the influence of high-speed dental tip sound. In this regard, it has been described that music effectively controls anxiety [1]. In addition, among other things, music can modulate the immune response by increasing the activity of natural killer cells, lymphocytes and interferon- γ , which is an interesting feature, since many diseases are associated with an imbalance of the immune system [25, 21, 22].

In a randomized control study, the effect of passive listening to relaxing raga (Indian music) on vegetative functions in prehypertension and hypertension patients was investigated. It has been found that passive listening of Indian music, together with normal lifestyle changes, plays a role in the normalization of diastolic and systolic BP by modification of vegetative functions and thus can

be used as additional therapy along with other lifestyle modifications in patients with hypertension and prehypertension [16].

Quite interesting was a comparative study on the impact of listening to live and recorded music in the admission department of the outpatient clinic [7]. One clinic provided a playlist with recorded music by two authors, while the other clinic provided a music therapy when student played the guitar, used flute and voice. The questionnaire evaluated the effect of music on the pain and emotional state of patients, as well as the attitude to music in the waiting room. As a result of the comparative study, a decrease in the level of anxiety, stress and pain in patients in both clinics was found. Patients of the clinic with live music reported that music reduced the level of stress, nervousness, excitement and pain more than the clinic where the music was recorded. This study once again emphasizes the importance of considering the methods of music therapy as an additional non-pharmacological method for the correction of various pathological conditions of the body.

Thus, the use of music is an additional therapeutic tool in the treatment of various nervous diseases, cardiovascular, endocrine, excretory systems and is an effective non-drug approach to the correction of various pathological processes in the body.

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