Table of Contents

1. Innovative Features of the Neurosound Method…… 2

2. Innovative Neurosound Method..... 17
   (Method created by Alina Galueva and Alexandra Brichkovskaya)..... 17

3. Clinical Trial of the Neurosound Method in Texas (2024) 27

4. Results of the Focus Group Study on Color–Note Association 31

5. Comparison of Neurosound with Other Methodologies 37
   5.1. Method by S. V. Shushardzhan..... 38
   5.2. Method by T.V. Lvova on Treating Parkinson's Disease with Music Therapy…… 39
   5.3. Neurosound Method. Comparative Table with Other Methodologies 43

Scientific and Practical Basis..... 44
Distinctions from Other Methodologies:..... 45
Advantages of Neurosound..... 46
Conclusion..... 46
References 47

1. Innovative Features of the Neurosound Method

As part of the implementation of various methods for the development of music therapy, we propose the introduction of the Neurosound method. This innovative method of multidimensional audio-visual therapy is a way of correcting mental states and treating addictions. It was presented in 2024 and tested on a number of clients who underwent a course of music therapy within the framework of treatment and rehabilitation.

The invention relates to the field of psychotherapy, practical psychology, and restorative medicine, in particular to methods for correcting mental states and treating addictions and can be used for psychophysiological relaxation of patients.

Modern human life includes many diverse factors that lead to traumatic stress — these include social instability and problems of social adaptation, armed conflicts and terrorist attacks, man-made and natural disasters, and much more, which leads to unstable mental reactions and adaptation disorders. Such deviations often have a long-term nature, manifest cumulative effects, negatively affect the physiological state of the body, and are difficult to treat and psychologically correct.

It is known that with prolonged exposure to stress, the adaptive capabilities of the body become depleted, and the cumulative accumulation of negative effects occurs, which affects a person's health and ability to work Corrigan SL, Roberts S, Warmington S, Drain J, Main LC. Monitoring stress and allostatic load in first responders and tactical operators using heart rate variability: a systematic review // BMC Public Health. 2021 Sep 18;21(1):1701. doi: 10.1186/s12889-021-11595-x

Frequent psychological stress in everyday life impairs the effective response to short-term stress, disrupts physiological adaptation to stressful situations during their repeated impact, thereby increasing the risk of cardiovascular diseases Tyra AT, Soto SM, Young DA, Ginty AT. Frequency and perceptions of life stress are associated with reduced cardiovascular stress-response adaptation // Int J Psychophysiology. 2020 Nov; 157:51–60. doi: 10.1016/j.ijpsycho.2020.08.006

The main methods of eliminating the consequences of emotional stress are the periodic conduct of relaxation and stimulating procedures that allow for the restoration of a person's mental and psychosomatic state. Methods of prevention and post-stress rehabilitation must be safe, must not lead to the development of addiction effects, and must not produce side effects; therefore, for example, it is preferable, if possible, to avoid or limit pharmaceutical correction.

From the prior art, a method of relaxation is known in accordance with Russian Federation patent No. 2103038, aimed at restoring working capacity and relieving psychophysiological tension in a human operator, which includes simultaneous exposure to sound signals in the form of amplitude-modulated white noise (imitating the sound of sea surf) and functional music, as well as light signals in the form of green light flashes. The frequencies of stimulation are synchronized with the breathing rate through the use of feedback, whereby the appearance of light and sound signals occurs with each breath cycle, and the change in intensity and duration of the signals depends on the parameters of exhalation. The disadvantages of this method include the limited psychophysiological impact on the individual and the instability of the obtained results. In particular, this may be due to the absence of isolated harmonic sound frequencies that resonate with the bioenergetic centers of the human body, as well as the fact that the patient's brain activity during the session is defined by alpha and theta rhythms, and there is no frequency of delta rhythm to synchronize the work of the brain hemispheres.

Patent US 5213562 presents a method for achieving desired states of consciousness in a person by creating stereo audio signals that are carriers of binaural beats, and as a result of exposure the brain reproduces signals with the unique characteristics of specific states of consciousness. The method makes it possible to transmit such states of consciousness from one person to another by superimposing reference EEG signals onto generated stereo audio signals for another person, in order to stimulate the manifestation of binaural rhythm and the formation of the desired state in that person

There are also systems known for harmonizing the human biofield, based on the "modal" system of Pythagoras and Plato, which use sound frequencies (Hz) 174, 285, 396, 417, 528, 639, 741, 852, and 963 (Leonard G. Horowitz, 2011, *The Book of 528: Prosperity Key of LOVE*, p. cm. Manufactured in the United States of

America). Patent US88586310 describes a tool for creating a harmonious scale of musical notes that can be used for such a system.

The limitations of such methods are related to the use of only one human sensory channel, which makes the effectiveness of the method dependent on the individual characteristics of the patient. In addition, during sound therapy, there is insufficient reduction of brain activity to delta rhythm frequencies, which are necessary for synchronizing the functioning of the brain hemispheres. This is due to the fact that when brain activity decreases to 3 Hz (delta rhythm), the cerebral cortex "shuts off," and information is perceived by the person bypassing the processes of thinking and analysis. This brain state at a frequency of 3 Hz is necessary for breaking pathological connections between neurons, when a person relaxes, stops thinking about the illness, and is freed from the fear of disease. If this state is absent in life, harmony in the organism is disrupted and illnesses appear Research by V. B. Slezin, St. Petersburg Scientific Research Psychoneurological Institute named after V. M. Bekhterev, Laboratory of Neuropsychophysiology, research data, 2005)

From the prior art, a number of devices are known, made in the form of a "comfort sphere," and methods for comprehensive psycho-emotional impact on the state of consciousness. Thus, Russian Federation patent No. 86884 describes a room for psycho-emotional stimulation, which contains light-dynamic installations: large-size air-bubble panels combined into a single composition, a "Starry Sky" panel in which a depth-of-space effect is created. The room is equipped with devices and installations for natural stimulation, aromatherapy installations, air ionization and purification, musical accompaniment, and oxygen therapy. Also used are massage and relaxation chairs and heated mattresses. The wellness technique includes simultaneous comprehensive light, visual, and sound exposure to the patient, covering the full field of vision, both from the sides and from above

Another device for comprehensive impact on a person (patent RU 107697) includes stimulating modules, one of which is made in the form of a low-profile bath filled with a natural or artificial material beneficial to the wellness process and equipped with a heating system, while the other stimulating module is designed in the form of a light source located above the bath with a variable spectral characteristic; additionally, it includes supplementary modules for influencing the

human body and sensory perception system. A device and method of relaxation are also known, which contribute to reducing physical and psychological stress and accelerating patient recovery (patent US6641522), containing, placed in a room (booth), a supporting structure with a freely suspended curtain and an attached flexible panel depicting a picturesque natural landscape, means of audio stimulation, an aromatherapy device, and a relaxation couch. The device carries out an influence on the psycho-emotional state by visually presenting the patient with an image of a picturesque natural landscape and simultaneously broadcasting sounds of nature

To form an optimal relaxation mode, various systems and methods are used to determine the emotional-physiological state of the patient. For example, the "Method of remote recognition and correction of the psycho-emotional state of a person using virtual reality" (RU 2711976), in which individual dynamic monitoring of facial expressions, movements, and speech is used to recognize the psycho-emotional state. To determine facial indicators, motor and speech activity, the person is presented with test material to influence their receptor field. Based on the obtained data, the psycho-emotional state of the person is determined in accordance with a facial movement coding system, and the resulting facial image is classified by an artificial intelligence system as the affective component of emotional disturbance. After that, remote monitoring is carried out over a specified period using artificial intelligence to continuously compare the data of facial muscle contractions, motor and speech activity with the formed database of the human emotional spectrum. Based on the obtained results, recommendations are issued regarding the possibility of directing the individual to psycho-physiological state correction. Correction is carried out through virtual reality, which induces a trance state in the person. The invention provides the ability for remote recognition of a person's negative psycho-emotional state and timely correction of it through the influence of virtual reality. A significant drawback of the described method is that the determination of a person's psycho-emotional state and the implementation of corrective measures occur without the involvement of their consciousness

A method for recognizing facial expressions is also known (US 10417483 "Facial expression recognition"), which is an automatic geometric method for analyzing and recognizing a person's facial expressions based on extracted features using a neural network. Facial expressions are divided into seven different categories of

emotions: surprise, happiness, disgust, neutrality, fear, sadness, and anger. The method uses an algorithm that hybridizes genetic algorithms and iterative local search with a backpropagation algorithm used for training neural network. The disadvantages of this method for the purposes of diagnosing the psychophysiological state of the patient are also associated with the absence of the patient's conscious participation in the test and the limitations of the emotion category model used

The closest known invention to the claimed one is the device for psycho-emotional impact on a person's state, described in Russian Federation patent No. 2620143, and the method of its use. The device is made in the form of a multilayer sphere with an interior space containing a rotating platform with a chair placed on it. The interior space also contains: a surround sound playback device, a panoramic volumetric video image generation device connected to a spherical visualization screen, a feedback device to which sensors for monitoring the patient's condition are connected, a control device for interactive interaction integrated into the chair, a rotation control device, a digital control unit interfaced with a control panel containing a touchscreen display for selecting the operating mode of audio-visual programs, and a second module containing a natural environment generator and a scent generator, the outputs of which are connected to the ventilation system, wherein all devices are connected via appropriate communication channels through a wired interface to the control unit.

The limitations of such devices include the insufficient depth of influence on the psycho-emotional state of the patient, which may lead to insufficient effectiveness of these devices in treating severe psychological disorders and in creating a lasting effect.

The technical result from using the claimed invention is an increase in the effectiveness of restoring a person's mental health, expanding the range of psychological disorders that can be successfully corrected, and increasing the duration of the relaxation effect.

The claimed technical result is achieved by the fact that the method of psychophysiological relaxation includes the following stages:– placing the patient in a chair in an enclosed space with light and sound insulation; inside the space there is a communication means with an electronic system for testing the patient

and processing the obtained data, as well as a virtual reality system including a surround sound reproduction system and a visual sequence playback system – testing the patient, including selecting preferred musical compositions and establishing an individual correspondence between musical frequency and color – generating an audiovisual sequence based on the results of the test, whose audio track contains binaural rhythms with waves of different frequencies, whose magnitude does not exceed 1500 Hz, and the difference between the frequencies delivered to the right and left ears does not exceed 30 Hz – playback of the generated audiovisual sequence through the virtual reality system

Usually, the generation of the audiovisual sequence is carried out by a neural network trained on pre-prepared datasets containing data obtained from the examination of focus groups on associative connections between colors, musical frequencies and chords, as well as information about harmonic patterns and their influence on emotional states, cymatics structures of sound waves and their visual projections.

To generate the color correspondence of musical notes, overtones, and visual images, a specialized neural network based on models like Stable Diffusion and DALL·E (or their adapted versions for medical and psychotherapeutic tasks) is usually used. To process musical data, a neural network algorithm based on the Transformer architecture is typically used, modified to solve tasks of processing audio-frequency sequences and matching them with visual parameters.

At the same time, it is preferable that the visual sequence generated by the neural network is presented in the form of a mandala, i.e., dynamic symmetrical drawings similar to those used in meditation and the performance of rituals and ceremonies in Buddhist and Hindu practices

The request for the formation of an individual audiovisual image for the patient using AI is generated based on the results of their questionnaire and assessment of mental and emotional state and musical preferences, as well as information about the desired therapeutic effect: relaxation, activation, stabilization, etc. The request itself is presented as a structured JSON package or any other machine-readable format containing: a list of musical compositions selected by the patient and their frequency analysis, parameters of the current mood and desired therapeutic effect, preferred color schemes, additional medical parameters including, for example, the

level of anxiety, history of psychoactive substance use, etc. The result of generating an individual audiovisual therapeutic session is a musical sequence and a dynamic mandala corresponding to the selected colors and rhythms. The shape of the mandala depends on the mental state of the patient, for example, in anxiety disorders, symmetrical circular mandalas with soft lines are usually used, in depression—ascending or spiral mandalas that stimulate growth and movement, and in addictions—multilayer mandalas with clear transitions between levels symbolizing stages of recovery. The color of the mandala is selected individually in accordance with the chosen harmonic series and the patient's preferences.

Additionally, the claimed method of multidimensional sound-visual therapy may include influence on other sensory channels of the patient. For example, the chair may be designed with adjustable anthropometric parameters and additionally include sensors for tactile effects on the patient, while the tactile stimulation the sensor system on the patient is synchronized with the playback of the audiovisual sequence The space in which the method of psychophysiological relaxation is carried out, on the one hand, completely isolates the patient from the outside world, and on the other hand, creates a comfortable and favorable internal environment that allows for gentle psychophysical influence, fully controlled by the patient themself

Preliminary testing for each patient makes it possible to establish an individual correspondence between notes (sound frequencies) and a specific color (light wave length). The patient is asked to select a color for each note of the 12-step chromatic scale, as well as to determine the colors for the chords of the circle of fifths. Typically, chord progressions are compiled individually based on the patient's 10 preferred musical compositions. The musical sequence is selected taking into account the following criteria: use of harmonic progressions suitable for associative work with colors, variety of rhythms used (from meditative to active), ease of analysis by frequencies and overtones, ability to evoke vivid emotional reactions, which is important for color-sound therapy. Table 1 presents an example of the musical compositions used and the corresponding colors

Table 1.

Artist	Musical Composition Title	Colors
The Beatles	Let It Be	Yellow, Orange
Michael Jackson	Billie Jean	Blue, Black
Whitney Houston	I Will Always Love You	Violet, Gold
Adele	Someone Like You	Green, Gray
Beyoncé	Halo	Yellow, White
Lady Gaga	Shallow	Blue, Violet
Celine Dion	My Heart Will Go On	Light Blue, Pink
Ludovico Einaudi	Nuvole Bianche	White, Violet
Hans Zimmer	Time	Red, Black
Frank Sinatra	Fly Me to the Moon	Gray, Red

As part of the testing, the history of narcotic and medicinal substance use is also identified, which makes it possible to determine which neuromediator systems should receive predominant influence—for example, the dopaminergic or serotonergic systems. The generated audio component is a stereo musical composition, all tracks of which use binaural rhythms that include waves at different frequencies: delta waves (0.5–4 Hz), theta waves (4–8 Hz), alpha waves (8–12 Hz), beta waves (13–32 Hz), gamma waves (32–100 Hz). The frequency of sounds fed into the right and left ears must not exceed 1500 Hz, and the difference between the two frequencies must not exceed 30 Hz. The principle of composing the music tracks is based on research from the Monroe Institute (https://hemi-sync.com/). The use of binaural rhythms leads to the following results: relaxation

of the body and clearing of the mind, increased creativity, improved problem-solving abilities, emotional stability, increased productivity, enhanced learning ability, boosted immunity, improved sleep, elimination of insomnia issues, and reduction of stress, anxiety, and irritability

Based on the results of individual testing, artificial intelligence (neural networks) generates dynamic visual images that reflect rhythmic changes in color in accordance with the binaural rhythms of the musical composition. Preferably, the visual sequence is presented in the form of a mandala, which contributes to the stabilization of the patient's internal state through ancient symbolism. The training of the artificial intelligence is carried out based on the entire dataset of patients who have completed a course of audiovisual therapy. The visual sequence can be displayed on a monitor screen, through virtual reality goggles (VR Oculus), or by any other suitable means.

The therapeutic effect of the implementation of the claimed method is achieved through three functions of the space inside the described chamber (object of multidimensional audio-visual therapy):

Firstly, it is a space for solitude away from the hustle and bustle of a large metropolis, where the patient can undergo a session of art and sound therapy alone with oneself, creating their own virtual reality. The presence of feedback with the device allows them to most fully recreate and express their inner world.

Secondly, it provides the opportunity to achieve the effect of “immersion in one’s own reality,” exerting the most comprehensive influence on various sensory organs.

Thirdly, a balanced combination of the visual sequence and external musical influence allows harmonization and stabilization of the patient's internal state, and the presence of feedback makes it possible to adjust the therapy in subsequent sessions.

The duration of each session usually ranges from 20 to 45 minutes and varies depending on the patient’s condition. The minimum duration is necessary for stabilizing the brain’s alpha and theta rhythms; longer sessions ensure stable formation of new neural connections. For example, psychophysiological relaxation

lasts approximately 30 minutes. For deep therapy of depression, anxiety, and various addictions, up to 45 minutes is required. Typically, a full course includes 10 sessions, which leads to the formation of a stable positive effect As a result of completing the course, the following were observed: reduced anxiety levels, restoration of stable emotional state through activation of dopamine and serotonin systems, reduction of depression symptoms, formation of new neural connections contributing to psycho-emotional stability, improved sleep quality, reduced dependence on external stimuli, development of self-regulation skills through memorization of harmonic and color patterns

IMPLEMENTATION EXAMPLES

Example 1 A 32-year-old female patient suffered from high levels of anxiety and chronic stress. Physically, this manifested in sleep disturbances, painful tension in the neck and back area. Testing revealed a high level of anxiety on the Spielberg scale and reduced heart rate variability

Test results were processed using an adapted Stable Diffusion model and a Transformer-based audio generator. The musical sequence was based on the compositions: Ludovico Einaudi “Nuvole Bianche” and Enya “Only Time”. Binaural rhythms were used with frequency waves in the range of 400–800 Hz and a frequency difference of 4–8 Hz. The visual sequence was represented by a mandala with circular symmetry based on blue, violet, and white colors

Sessions were conducted for 30 minutes with a one-day interval. A total of 8 sessions were held. As a result, a decrease in anxiety was observed after the very first session. After completing the full course of therapy, sleep normalized steadily and mood improved

Example 2 A 44-year-old male patient suffered from the consequences of addiction to amphetamines and alcohol. Physically, this manifested in chronic fatigue, sleep disturbances, and outbursts of aggression. Testing revealed a high level of depression according to the Beck scale and disrupted alpha rhythm. The test results were processed using an adapted Stable Diffusion model and a Transformer-based audio generator. As the basis for the musical sequence, the compositions “Vampire Dance Club Theme” (from “Blade”) and Hans Zimmer’s “Time” were selected. The binaural rhythms included wave frequencies in the range of 500–1200 Hz, with a

frequency difference of 10–20 Hz. The visual sequence was presented as a spiral multilayer mandala based on blue, gold, red, and white colors. Sessions were conducted for 40 minutes every other day. A total of 12 sessions were completed. After the full course of therapy, sleep stabilized, aggression decreased, and motivation in life emerged.

Example 3 The patient, a 55-year-old woman, was in a state of depression, suffering from anxiety and alcohol cravings. Physically, this manifested in chronic fatigue, sleep disturbances, and panic episodes. Testing revealed a high level of depression on the Beck scale and moderate anxiety on the Spielberg scale. The test results were processed using an adapted Stable Diffusion model and a Transformer-based audio generator. As the basis for the musical sequence, the compositions Frank Sinatra's "Fly Me to the Moon" and Celine Dion's "My Heart Will Go On" were selected. The binaural rhythms included wave frequencies in the range of 400–900 Hz, with a frequency difference of 4–6 Hz. The visual sequence was presented as a radial mandala based on pink, blue, purple, and white colors. Sessions were conducted for 40 minutes with an interval of one day. A total of 10 sessions were completed. After the full course of therapy, anxiety levels decreased, blood pressure normalized, alcohol cravings lessened, and motivation for life improved.

The authors named the device implementing the described method "NEUROSOUND." It is an ecological art space where the person is given the opportunity to create and reproduce their inner world, a comfortable living environment. The proposed method, which combines new virtual reality technologies and low-frequency resonance sound, makes it possible to compensate for the negative impact of the external environment and creates an opportunity to harmonize a person's internal state.

CLAIMS

1. A method of multidimensional audio-visual therapy comprising the following steps: – placing the patient in a chair within an enclosed space that provides light and sound insulation, wherein the space contains: a means of communication with an electronic system for testing the patient and processing the obtained data, a virtual reality system including a spatial sound reproduction system and a visual sequence reproduction system; –

testing the patient, including the selection of preferred musical compositions and determining the individual correspondence between musical frequency and color; – generating an audiovisual sequence based on the test results, wherein the audio track contains binaural rhythms with wave frequencies not exceeding 1500 Hz and a frequency difference between the right and left ear not exceeding 30 Hz; – reproducing the generated audiovisual sequence through the virtual reality system.

2. The method of multidimensional audio-visual therapy according to claim 1, characterized in that the generation of the audiovisual sequence is carried out by means of a neural network trained based on the test results of patients.

3. The method of multidimensional audio-visual therapy according to claim 2, characterized in that the visual sequence generated by the neural network is presented in the form of a mandala.

4. The method of multidimensional audio-visual therapy according to claim 1, characterized in that the chair is designed with adjustable anthropometric parameters and additionally includes sensors for tactile stimulation of the patient, wherein the tactile stimulation by the sensor system is synchronized with the playback of the audiovisual sequence.

ABSTRACT

The invention relates to the fields of psychotherapy, practical psychology, and rehabilitative medicine, particularly to methods for correcting mental states and treating addictions and may be used for psychophysiological relaxation of patients.

The technical result achieved by the use of the claimed invention is an increase in the effectiveness of mental health recovery, expansion of the range of psychological disorders that can be successfully treated, and an increase in the duration of the relaxation effect.

This is achieved by a method of psychophysiological relaxation that includes the following steps: – placing the patient in a chair within an enclosed space that provides light and sound insulation, wherein the space contains a means of communication with an electronic system for testing the patient and processing the

obtained data, as well as a virtual reality system including a spatial sound reproduction system and a visual sequence reproduction system; – testing the patient, including the selection of preferred musical compositions and determining the individual correspondence between musical frequency and color.

– generation of an audiovisual sequence based on the test results, with the audio track containing binaural rhythms with wave frequencies not exceeding 1500 Hz, and the difference between the frequencies delivered to the right and left ear not exceeding 30 Hz – playback of the generated audiovisual sequence through the virtual reality system.

2. Innovative NeuroSound Method (Methodology created by Alina Galueva and Alexandra Brichkovskaya)

NeuroSound is a method of music therapy created by Alina Galueva and Alexandra Brichkovskaya in 2024. It is based on a unique combination not only of music therapy factors, but also on the use of a mandala system and the involvement of neural networks, which autonomously select a set of musical tracks and mandala images tailored to the needs of a particular patient, corresponding to the rhythm, melody, and texture of the musical material.

Unlike most traditional music therapy systems, the NeuroSound method actively uses works associated with the history of American pop music. In contrast, some other music therapy systems are based on alternating the use of classical and pop music compositions.

The mandala system in NeuroSound is not simply subordinated to the musical sequence. It is based on specific color combinations selected according to the need to stimulate, activate, or restore certain neurotransmitters, as well as for the development of the human brain. There is a several programs formulated not only on the basis of neurotransmitter complexes, but also on the psychological state of a given person, as well as their therapeutic needs.

The NeuroSound method is also based on the combination of neurotransmitters and simple harmonic triads corresponding to relatively simple tonalities. These allow

for the regulation not only of human consciousness and emotions, but also of their hormonal nature.

Table of Harmonies and Neurotransmitters

Harmony / Chord	Effect	Emotional State	Neurotransmitter
C – E – G (C major)	Clarity, focus	Bright motivation, “new beginning”	Dopamine ↑
E – G# – B (E major)	Victory, energy	Inspiration, excitement	Dopamine + Adrenaline ↑
D – F# – A (D major)	Harmonious arousal	Eureka, rush of ideas	Dopamine ↑↑
A – C# – E (A major)	Determinatio n	Strength, confidence	Adrenaline ↑↑
F – A – C (F major)	Calmness, warmth	Coziness, care	Serotonin ↑
G – B – D (G major)	Hope, drive	Courage, forward motion	Dopamine + Adrenaline ↑
B – D – F# (B minor)	Emotional awakening	Sadness + inner strength	Dopamine + Serotonin ↑
A – C – E (A minor)	Introspection	Soft sadness, acceptance	Serotonin ↑↑
D – F – A (D minor)	Tears + catharsis	Deep empathy	Serotonin ↑, sometimes + Dopamine
C – Eb – G (C minor)	Melancholy	Aesthetic immersion	Serotonin, mild inhibition

The results presented above are the outcome of a profound analysis that is not only rooted in music theory but also in psychology and spectral research. The color-music spectrum applied in the Neurosound method significantly differs from what is commonly known both in the United States and in Russia.

During the course of conducted music-psychological and psychoanalytical studies, it was established that the mandala system in Neurosound, which is used in conjunction with specific harmonic complexes in corresponding musical pieces, differs not only from previously used methodologies but even from the well-known systems in the history of classical music. In previously published articles, examples have been provided illustrating how the Neurosound system significantly deviates from, for instance, the color-music system developed by A. N. Scriabin, and how his *Prometheus*could be reinterpreted through the lens of the neurostimulatory and music-mandala system employed in the Neurosound method.

Neurosound actively utilizes the method of sequences, which, when used during music therapy sessions, provides a powerful boost to therapeutic effectiveness of neuromotivators on a person. Below is a list of some examples of such sequences:

Sequences that give a boost:

For dopamine (motivation, energy): C – D – E – G (major ascent) E – G – A – D (advanced major sequence)

For serotonin (satisfaction, acceptance): F – Am – Dm – Bb (warm, enveloping sequence) Cm – Ab – Bb – C minor (melancholic but stable)

For adrenaline (excitement, readiness for action): A – E – F# – D (hymn of determination) G – B – D – A (heroic tension)

Method of applying the indicated sequences: The use of sequences usually depends on the needs of the particular patient who is interested in undergoing a course of sessions using the Neurosound method. It is important to remember here that, in fact, the method of using particular sequences may differ depending on how the

patient's body individually perceives them, but at the same time, certain parameters can be distinguished that will guide music therapists who decide to work specifically with Neurosound in the future

1. Meditation/therapy. To achieve this goal, it is recommended that the music therapist use "serotonin" harmonies, which include sequences or compositions written in minor tonalities but which, in their harmonic functional series, have relatively "soft" (mostly plagal) cadences

2. Work focus, creativity. This environment involves the use of "dopamine" sequences and compositions that use them. In this category are included compositions written in major keys and also include a wide melodic range that reaches into the upper register 3) Physical activity/motivation. For this type of work, the music therapist will need to use compositions with "adrenaline" sequences, in which there is a strong emphasis on fourth–fifth modulations, active rhythm, and the presence of sharp accents within the melodic line and texture

Examples of the sound row used (list of track titles) The list of compositions is selected based on patient questionnaires. For each patient, a list of their 10 most favorite compositions is selected individually According to the Neurosound method, examples of the musical row are selected that

1. use bright harmonic progressions
2. are suitable for associative work with colors
3. include different rhythms (from meditative to active)
4. are easy to analyze in terms of frequencies and overtones
5. evoke emotional responses (important for color-sound therapy)

Examples of the most popular selection Examples of the sound row used (world pop music):

1. The Beatles " –Let It Be" (Yellow, orange)
2. Michael Jackson " –Billie Jean" (Blue and black)

3. Whitney Houston “ –I Will Always Love You” (Violet and gold)
4. Adele “ –Someone Like You” (Green and gray)
5. Beyoncé – “Halo” (Yellow, white)
6. Lady Gaga “ –Shallow” (Blue, violet)
7. Celine Dion “ –My Heart Will Go On” (Light blue, pink)
8. Ludovico Einaudi “ –Nuvole Bianche” (White, violet)
9. Hans Zimmer “ –Time” (Red, black)
10. Frank Sinatra “ –Fly Me to the Moon” (Gray and red)

Use of AI tools in determining the direction of music therapy for the patient AI used: AI is an integral part of the Neurosound method. In fact, the selection of compositions carried out by AI is largely individualized and corresponds to the specific needs of the patient, and also contains an element of unpredictability, as the AI can change its selection of a musical piece each time, based on the operation of its own algorithms To generate color correspondence with musical notes, overtones, and visual images in the Neurosound system, a specialized neural network based on models such as Stable Diffusion and DALL·E is used (or their adapted versions for medical and psychotherapeutic purposes) To process musical data, a neural network algorithm based on the Transformer architecture is also used, modified for the task of processing audio frequency series and correlating them with visual parameters

Principle of AI operation:

AI models are trained on pre-prepared datasets containing:

1. Associative connections between colors, musical frequencies, and chords (based on focus group data)
2. Data on harmonic patterns and their influence on the emotional state of a person

3. Cymatic structures of sound waves and their visual representations

Formulating requests to AI: Requests to the neural network are formulated based on:

1. The results of the patient's questionnaire (assessment of mental state, musical preferences, emotional state)
2. The results of matching musical frequencies and individually chosen colors
3. Information about the necessary effects (relaxation, activation, mood stabilization, etc)

The request format is a structured JSON package or another machine-readable format containing:

1. A list of the patient's selected musical preferences and their frequency analysis
2. Mood parameters and the desired therapeutic effect; preferred color schemes based on testing results
3. Additional medical parameters (if available, for example — anxiety level)
4. History of use of specific narcotic substances (if applicable)

Interaction scheme:

1. Based on the results of the questionnaire, a patient profile is automatically created
2. AI receives a structured request
3. AI generates an individual audiovisual therapeutic session: a musical sequence and a dynamic mandala corresponding to the selected colors and rhythms Use of the mandala system in the context of Neurosound therapy The shape (type) and color of the mandala in the Neurosound method vary depending on the type of the patient's psycho-emotional state and the purpose of the therapy

1. Mandala shape (type):

2. In the therapy of anxiety disorders, symmetrical circular mandalas with soft lines and regular geometric patterns (circles, petals) are used, as they promote stabilization and relieve internal tension

3. In depressive states, ascending or spiral mandalas directed outward from the center are applied to stimulate a sense of movement, growth, and exit from a closed state

4. In addiction therapy, multilayered mandalas with clear transitions between levels are used, symbolizing the passage through stages of recovery

5. In depressive states, ascending or spiral mandalas directed outward from the center are applied to stimulate a sense of movement, growth, and exit from a closed state

6. In addiction therapy, multilayered mandalas with clear transitions between levels are used, symbolizing the passage through stages of recovery

2. Mandala color Is selected individually based on the chosen sound (harmonic) sequence and the color palette chosen by the patient

3. Key differences in working with the mandala system the differences lie in the choice of composition, symmetry, and palette of the mandala in order to achieve specific therapeutic effects

1. stabilization

2. activation

3. emotional reprogramming Thus, the mandala in the Neurosound method is not merely an aesthetic element but an active therapeutic tool individually adapted to each clinical case

Session duration The duration of one session in the Neurosound method ranges from 20 to 45 minutes depending on the therapeutic goal

1. For psychophysiological relaxation — 30 minutes

2. For deep therapy (work with depression, anxiety conditions, addictions) — from 45 minutes

Clarification:

1. The minimum duration (30 minutes) is necessary to achieve stabilization of the brain's alpha and theta rhythms
2. Extended sessions (from 45 minutes) are used to form lasting changes in neural connections and to consolidate the emotional effect
3. Breaks between sessions depend on the individual program, but in the basic protocol, no more than 1 session per day is recommended

To achieve maximum results, 10 sessions are required

Final result of the Neurosound session course: As a result of completing the session course, the following is observed

1. A reduction in anxiety levels due to stabilization of the brain's alpha and theta rhythms
2. An improvement in emotional state through activation of the dopamine and serotonin neurotransmitter systems
3. A stable reduction in depressive symptoms and restoration of positive emotional responses
4. The formation of new neural connections contributing to a transition to a state of psycho-emotional stability
5. Improved sleep quality due to regulation of deep relaxation processes (delta waves)
6. A decrease in dependence on external stimuli (in case of working with addictions) by restoring the brain's natural reward pathways
7. Development of stable self-regulation skills through memorization of harmonic and color patterns that facilitate returning to a state of inner balance Thus, the final result of the sessions consists in the normalization of

the patient's psychophysiological indicators, the restoration of emotional balance, and the stable consolidation of positive states

3. Clinical Trial of the NeuroSound Method in Texas (2024)

In 2024, a large-scale scientific study was conducted at Amedia Hospice Care aimed at testing the NeuroSound method in clinical settings. This clinic in San Antonio, Texas, is one of the reliable providers of compassionate in-home care and end-of-life support, which agreed to host the research within its facility Amedia Hospice specializes in palliative and end-of-life care, offering personalized services focused on pain management, emotional support, and daily assistance. The clinic is known for its holistic approach and individualized care plans that prioritize the comfort and dignity of patients and their families during the most difficult times NeuroSound is one of the most complex methods of neurostimulation and music therapy. In 2024, A. Galueva and A. Brichkovskaya collaborated with this organization to conduct groundbreaking studies and pilot applications of their patented method, NeuroSound—a multidimensional audiovisual therapeutic system designed to treat psychological conditions and support recovery from addiction. Their work involved the creation of individual protocols, the development of audiovisual environments, and the adaptation of sensory experiences to the unique emotional and neurological profiles of patients The NeuroSound method combines binaural sound waves, immersive visual projections, harmonic mapping of patterns, and adaptive modulation based on artificial intelligence. This approach is based on the principle of using harmonic resonance and personalized design of stimuli to activate healing states of brainwaves, including delta and theta rhythms, which are critical for deep neurological recovery.

This method was studied using two independent focus groups:

The first group, consisting of 30 individuals with a background in music, was asked to associate colors with each note of the 12-tone chromatic scale. An 80% consensus was found for key associations (e.g., C = black, E = green, G = red)
The system of associations chosen by the majority of professional musicians in this focus group is innovative. It differs from the established traditional methods used not only in color-music associations employed by music educators when working with children (where color associations correspond to rainbow colors), but also from previously developed systems of color-music associations by other composers from the United States and European countries—in addition to A. N. Scriabin's "Prometheus" system, comparisons were also made with the color-music systems of music educators such as Zoltán Kodály and others
This 80% consensus on the tonic triad of the C major key can be described as follows. C major is the most "natural" key, with which musical training begins in the professional environment—not only in popular music, but also in academic classical music. Due to its natural harmonic overtone structure and other factors, the tonic of C major—the note C—represents stability, strength, and confidence. The note G (sol) is the dominant in relation to C. Perhaps the combination of red and black colors on this perfect fifth is associated with Symphony No. 41 by W. A. Mozart, nicknamed "Jupiter." At the same time, the note E (mi), which was identified with the color green, may be associated with some of the concertos included in of the cycle "The Four Seasons" by Antonio Vivaldi, which determined its green timbral hue on the resulting scale. The second group, consisting of 30 individuals with no musical background, participated in testing tone-color associations and selected colors for tonal chords based on their favorite songs. Based on their input, individual harmonic sequences were constructed.
These sequences were then transformed into musical compositions using binaural rhythms in specific frequency ranges: delta (0.5–4 Hz), theta (4–8 Hz), alpha (8–12 Hz), beta (13–32 Hz), and gamma (32–100 Hz), with sound frequencies below 1500 Hz and interaural differences below 30 Hz. Visual effects were created using AI and based on the principles of cymatics, presented as dynamic mandalas during therapy sessions via virtual reality Sessions were conducted in sound- and light-isolated rooms using virtual reality systems (Oculus headsets) and multidimensional sound. Each session began with psychological testing, including addiction history, to calibrate the audiovisual experience in accordance with target neurotransmitter systems such as dopamine or serotonin The results of this study

showed significant improvements in patients' mood, emotional regulation, and reduction in anxiety and drug cravings. The technical outcome was a prolonged relaxation response, an expanded range of psychological states that could be effectively treated, and increased effectiveness of emotional recovery Within palliative care, the use of Neurosound also demonstrated significant effectiveness in the following indicators

1. Reduction of anxiety

2. Stabilization of emotional state

3. Improved perception of reality among terminally ill patients The creators of Neurosound synthesized tone and harmony with deep emotional intuition. They intuitively understood how to extract the full character of sound frequencies and shape them into an experience that heals. Their individually designed therapeutic programs open new horizons in holistic care by combining neuroscience, art, and technology into a highly adaptable model of intervention Notably, one of the creators of Neurosound, Alina Galueva, is also one of the few globally recognized female producers from Russia and, even more impressively, a Grammy-nominated artist. Her work bridges not only disciplines but also cultural boundaries, adding exceptional value to therapeutic, scientific, and artistic communities The second author of the Neurosound method, Alexandra Brichkovskaya, is a composer and certified sound therapy specialist, developer and innovator of the Mental Booth method, as well as the founder of Genius Lovers, a company recognized in the United States for her outstanding Mental Booth methodology in the field of sound and art therapy

4. Results of Focus Group Research on Color-Tone Association

As a result of completing the course of sessions, the following was observed:

1. A decrease in anxiety levels due to the stabilization of alpha and theta brain rhythms
2. Improvement in emotional state through the activation of dopaminergic and serotonergic neurotransmitter systems
3. A stable reduction in depressive symptoms and the restoration of positive emotional responses
4. Formation of new neural connections contributing to the transition to a state of psycho-emotional stability
5. Improved sleep quality due to the regulation of deep relaxation processes (delta waves)
6. A decrease in dependence on external stimuli (in cases of addiction treatment) through the restoration of the brain's natural internal reward pathways
7. Development of stable self-regulation skills through memorization of harmonic and color patterns that help return to a state of inner balance

Implementation Examples Example 1 Patient: Female, 32 years old. Psychological issue: Elevated anxiety levels and chronic stress. Physical manifestations: Sleep disturbances, increased muscle tension in the neck and upper back area. Test results: High anxiety level according to the Spielberger scale; reduced heart rate variability

Neural Network Used: An adapted Stable Diffusion model for visual sequence generation and a Transformer-based audio generator for composing the musical sequence.

Musical Sequence: Base — compositions by Ludovico Einaudi (“Nuvole Bianche”), Enya (“Only Time”), binaural rhythms with a focus on the alpha and

theta range Duration: 30 minutes
Parameters: sound frequencies from 400 to 800 Hz, binaural difference of 4–8 Hz

Visual Sequence: Mandala with circular symmetry Colors — light blue, violet, white Over time, a smooth transition of shades occurred within the range of cool tones with an increase in brightness by the end.

Session Protocol: Eight 30-minute sessions were conducted with 1-day intervals.

Differences in the Audiovisual Sequence: An increase in the brightness of visual images and a rise in frequency density of the musical sequence by the end of the course.

Result After the First Session: Subjective feeling of relaxation, reduced anxiety level.

Result After Subsequent Sessions: Normalization of sleep, fewer episodes of nighttime awakening, improved mood.

Final Result:

The patient decided to use the procedure on a regular basis (once a week) to maintain stress resilience and internal balance.

Case Study 2 Patient: Male, 44 years old Psychological issue: Aftereffects of moderate amphetamine and alcohol addiction, pronounced emotional instability, and decreased motivation Physical symptoms: Chronic fatigue, sleep disturbances, frequent episodes of irritability and bursts of aggression Test results: High level of depression according to the Beck scale; low scores on the self-regulation ability assessment scale; disruptions in alpha rhythm according to neuroassessment results.

Neural network used: Adapted Stable Diffusion model for generating visual sequence and a Transformer-based audio generator for creating the musical sequence

Musical sequence: Basis — compositions “Vampire Dance Club Theme” from the movie *Blade* and Hans Zimmer “ –Time”, supplemented with binaural rhythms focusing on the alpha and gamma ranges to stimulate neuroplasticity Duration: 40

minutes Parameters: sound frequencies from 500 to 1200 Hz, binaural difference of 10–20 Hz

Comment on the musical sequence:

1. The track “Vampire Dance Club Theme” provides energetic stimulation and awakening of the dopamine system through high-frequency pulsations and intense rhythm

2. The composition “Time” (Hans Zimmer) contributes to the subsequent stabilization of the emotional background through slow melodic development and work on immersion into the deep layers of consciousness

3. Thus, the effect of an “emotional arc” is achieved: first activation, then harmonization

Visual sequence: Mandala with a multi-layered structure (spiral type with distinct levels). Colors — blue, gold, red, white Over time, a dynamic transition occurred from dark tones to lighter ones, with the gradual introduction of golden glow by the end of the session

Execution: 12 sessions of 40 minutes each were conducted with 2-day breaks.

Differences in the audiovisual sequence: Gradual increase in the brightness of the visual component and the energy of the musical sequences, with the addition of rhythmic and dynamic accents in the final sessions

Result after the first session: Subjective feeling of lightness and a short-term mood lift, reduction in internal tension

Result after subsequent sessions: Stabilization of sleep, reduction of aggressive outbursts, emergence of initial signs of stable motivation to abandon stimulants

Final result:

The patient decided to continue therapy in a preventive mode (1 maintenance session per week) to maintain emotional stability and prevent relapse of addiction.

Example 3 Patient: female, 55 years old Psychological problem: depressive disorder, pronounced decrease in motivation, increased anxiety, elevated blood pressure, presence of alcohol craving as a means of emotional compensation Physical manifestations: chronic fatigue, decreased physical activity, sleep disturbances, periodic episodes of panic tension

Test results:

1. High depression scores on the Beck scale
2. Moderate level of anxiety on the Spielberger scale
3. Signs of emotional dependence and low stress tolerance according to the psychological questionnaire

Neural network used: adapted Stable Diffusion model for the visual sequence and Transformer-based audio generator for compiling the individual musical program

Musical sequence: Basis — compositions:

1. Frank Sinatra “ –Fly Me to the Moon”
2. Celine Dion “ –My Heart Will Go On”

The use of these works during work with the patient was supplemented by binaural rhythms with an emphasis on the alpha and theta ranges for the restoration of emotional balance and inner calm

Session duration: 40 minutes

Sound parameters: frequencies 400–900 Hz, binaural difference 4–6 Hz. Visual sequence: Mandala with clear radial symmetry in the shape of a flower symbolizing renewal. Colors: pink, blue, purple, and white. Changes over time: gradual smooth expansion of the mandala from the center outward, with an increase in brightness at the end.

Session procedure:

1. 10 sessions of 40 minutes each were conducted.

2. Breaks between sessions — 1 day.

Differences in audiovisual content between sessions:

1. In the initial sessions, calm, slow transitions of colors and musical keys predominated.
2. In subsequent sessions, the tempo of the musical accompaniment and the brightness of visual images increased to stimulate motivational processes.

Results:

After the first session:

The patient reported reduced anxiety, normalization of blood pressure, and relaxation.

After subsequent sessions:

1. Reduction in alcohol cravings.
2. Appearance of the first signs of motivation to participate in social activity.
3. Improved sleep and reduced episodes of nighttime anxiety.

Final result:

The patient decided to use the method on a regular basis (once a week) to maintain emotional balance, strengthen resilience to stress, and prevent relapses of depressive conditions.

5. Comparison of NeuroSound with Other Methods

NeuroSound is a revolutionary method of influencing the neural layers of the human brain, which includes not only working with mandalas and musical material, but also the active involvement of neural networks in processing the mentioned categories, upon which the system is built

Neuromusical therapy. In order to determine its maximum clinical effectiveness, it is necessary to present a comparison between NeuroSoundand several previously popular methods of music therapy used in Russia and the USA.

5.1. The Method of S. V. Shushardzhan In modern medicine, more and more specialists are paying attention to music therapy (MT) as an effective method of psychosomatic correction and healing. MT, based on the influence of music and sounds, allows for the targeted activation of the body's adaptive responses, increasing its resistance to negative factors.

Today, scientific music therapy offers a wide range of innovative methods and technologies using certified and Ministry of Health of the Russian Federation-approved algorithms for the regulation of S, T, and HR, which confirms their high effectiveness.

Music therapy methods are divided into two main groups:

1. Receptive methods (passive perception)

Music psychotherapy**:** Listening to specialized programs such as "Music of Health" to improve emotional state

Doctor Music Eco": Creation of harmonizing acoustic fields to reduce anxiety and emotional tension

Virtual music-art therapy: Combination of therapeutic music and positive visual imagery to create a sense of safety and comfort.

Meso-Forte therapy: A technology aimed at restoring health and combating stress, it optimizes hormonal balance, eliminates vascular and muscular spasms, and has anti-aging effects.

2. Active methods (active participation):

Vocal therapy: A therapeutic method that stimulates adaptive responses and stabilizes mental state. Play-based vocal therapy is aimed at regulating emotions and developing interaction skills

Music-art therapy: Harmonization of the internal state through drawing, sculpting, or handicrafts under therapeutic music, using musical and color-based algorithms S, T, HR.

Elementary music therapy: (Shushardzhan S. V., Eremina N. I., 2015) A method with the potential for the formation of social skills and personal development.

The numerous health benefits of music are well known. The accessibility and clinically proven effectiveness of scientific music therapy methods open up broad prospects for working with stress, neuroses, and various psychosomatic disorders.

5.2. The Method of T. V. Lvova for Treating Parkinson's Disease with Music Therapy Music therapy has also proven effective in the treatment of Parkinson's disease. In 2018, T. V. Lvova conducted her own music therapy study, which showed that this type of therapy is quite effective when working with patients suffering from Parkinson's disease.

Parkinson's disease (PD), or parkinsonism, is a progressive neurodegenerative disease first described by James Parkinson. Recently, there has been a trend toward earlier onset of the disease: whereas previously PD was diagnosed mainly in people over 60, it is now found in patients under 50 as well. PD symptoms worsen over time, emphasizing the need to develop methods for early prevention, slowing disease progression, and ensuring long-term rehabilitation.

Music therapy and other types of art therapy have a long history of being used to treat Parkinson's disease. For example, since 2001

The Mark Morris Dance Group (MMDG), in collaboration with the Brooklyn Parkinson Group (BPG), implements a dance class program for patients, their relatives, and friends. Israeli therapist Alex Kerten developed a dance therapy approach combining music and movement, which has a positive effect on patients with Parkinson's disease. American researchers have shown that choral singing improves swallowing function in patients. A review of British studies also confirms the benefits of singing in rehabilitation for Parkinson's disease. Korean researchers are studying the therapeutic effect of individual vocal lessons to strengthen the voice and reduce depression in patients with PD. Despite existing research, the

potential of music therapy in the rehabilitation of people with Parkinson's disease has not yet been fully revealed.

The main symptoms of parkinsonism include:

1. Slowness and stiffness of movements, often starting in one hand and gradually spreading to the entire body.
2. Increased muscle tone.
3. Mask-like face with infrequent blinking, creating the impression of a lack of emotion.
4. Slurred speech.
5. Slowed thinking and reduced concentration.
6. Decreased motivation, loss of interest in the outside world, and development of depression (in approximately half of the patients).

These symptoms lead to limited mobility, a narrowing social circle, and a loss of interests. Based on the analysis of the main symptoms of the disease, "targets" for possible application of music-rehabilitation effects were identified.

The first target is aimed at overcoming physical limitations and stiffness. This section combines symptoms manifested in breathing and movement difficulties, such as muscle spasms, tremors, involuntary movements, impaired coordination, and general stiffness.

The second target is related to the compensation of emotional deficiency. Here, the focus is on the awareness and expression of emotions and feelings through movement, musical motion, and singing.

The third target is dedicated to overcoming social isolation and is aimed at the resocialization of the patient. We will now examine the program in more detail. Since the speech of people with Parkinson’s disease often becomes quiet, slurred, and monotonous, the program includes a set of exercises aimed at mitigating these symptoms, correcting them, and, if possible, restoring normal speech.

To restore speech and facial functions, T. V. Lvova suggests using a variety of musical exercises. Her program begins with simple tasks: practicing pronunciation of text, then gradually introducing vocal elements such as vocal warm-ups and intoning individual words with different inflections. This is followed by learning and performing songs, either familiar or new.

Considering that Parkinson's disease is often accompanied by facial muscle stiffness and infrequent blinking, which can give the impression of a lack of emotion, the program includes exercises aimed at activating and partially restoring facial expressions. Singing, speech, and articulation exercises contribute to training the facial muscles.

Importantly, musical rehabilitation allows us to work with facial expressions and eye contact. We emphasize the emotional content of musical pieces and ask patients to express these emotions during performance. At the same time, we avoid directly pointing out expressionlessness, creating a comfortable and supportive atmosphere.

At the next stage, when musical-plastic movements are added, the task becomes more complex: in addition to emotional involvement, the patient must visually track hand movements. In articulation exercises, we suggest pronouncing texts or individual words with different intonations and expressions.

Memory and cognitive function training in patients begins with articulation exercises and speech work. Patients are asked to pronounce words with exaggerated articulation, focusing attention on the movement of the facial muscles. Exercises for emotional coloring of speech are also used: from soft whispering to loud declamation, as if on stage, or even vocalization in the style of operatic singing.

In parallel, musical memory training begins already in the first session. Patients are asked to recall favorite songs, which then become the basis for further exercises. It is important that the patient retains the task in memory and quickly adapts to changing conditions.

When selecting songs, the following factors are considered:

1. Accessibility of recollection: in the early stages, songs that the patient easily remembers are used.

2. Positive emotions: the song should be enjoyable for the patient and evoke pleasant memories.

3. Suitability for exercises: the song should be suitable for singing and for performing motor tasks — for example, to synchronize with hand movements in 2/4 meter. Later, as progress is made, more complex "conductor" patternsin 4/4 and 3/4 time are introduced.

After restoring the song's lyrics and singing it, movement elements are added — often already in the first session. Patients are asked to "conduct" the song by performing smooth and precise hand movements. Particular attention is paid to movement coordination and synchronization with the music. This stage can also help reduce hand tremors.

As exercises are mastered, the tasks become more complex. For example, alternating foot stomping is added to singing and hand movements. Thus, coordination between the hands, between hands and feet, and overall body coordination is trained.

In the pilot study, 46 patients participated, but the duration of their stay in the department varied: 9 patients stayed in the department for more than two weeks, 14 – two weeks, 15 – less than two weeks, and 8 patients participated in group sessions of 2–3 people.

Within the framework of the study, patients with Parkinson’s disease underwent a course of music rehabilitation sessions with a frequency of 2–3 times per week (the total number of sessions ranged from 4 to 9). Already after the third session, positive changes were noted not only in the manifestation of external symptoms, but also in cognitive functions, such as memory, gnosis, speech, praxis, and intellect.

The effectiveness of music rehabilitation was evaluated comprehensively: using cognitive and affective scales, the Unified Parkinson's Disease Rating Scale (UPDRS, part III, assessing motor impairments), as well as through the involvement of a focus group of experts, who did not participate in the treatment of

patients. The focus group assessed the general clinical condition of patients before and after the course of music therapy on a 5-point scale.

The analysis of the obtained data revealed a positive effect of music rehabilitation on the condition of patients with PD, in particular, an improvement in motor status, manifested in an increase in spontaneity of movements, improvement in maintaining rhythm and tempo, and also a decrease in the severity of bradykinesia. These results confirm the promising nature of using music-based methods in rehabilitation programs for patients with Parkinson's disease.

5.3. The NeuroSound Method. Comparative Table with Other Methods

The NeuroSound method is an innovative approach to psychophysiological correction, combining brain audio stimulation (binaural rhythms), visual stimulation (color-music), and immersive VR environments. It is designed for relief of anxiety and post-stress states, correction of dependencies, improvement of sleep, concentration, and the initiation of regenerative processes at the level of the central nervous system.

Scientific and Practical Basis Unlike classical music therapy, NeuroSound works not only through the aesthetic perception of music but also purposefully induces brain rhythms, creating a state of deep neurovegetative regulation. This is achieved through three components:

1. Binaural rhythms (from 0.5 to 8 Hz), synchronizing the work of the brain hemispheres. Color stimuli, corresponding to musical frequencies, integrate into the visual perception channel, triggering emotional reactions.

2. VR environment, enhancing the effect of presence and allowing immersion of the patient into an individually constructed psychotherapeutic landscape.

Mechanism of Action NeuroSound acts on the system of limbic resonance and the reticular formation of the brain, which regulates wakefulness and rest. The following are activated:

1. Alpha and theta rhythms (relaxation and meditative state),

2. Delta rhythms (deep rest, recovery, inhibition of sympathetic activity).

Thanks to the coordinated work of the auditory and visual channels, a mechanism of cross-sensory coordination is launched, leading to improvement in:

1. Neuroplasticity,
2. Emotional stability,
3. Adaptive capabilities of the organism.

Empirical Data (based on recent sessions) During the recent testing of the method (session from May 2025), in which 6 clients participated who showed signs of increased anxiety, sleep disorders, and emotional burnout symptoms, the following was established:

1. Already after the first 25-minute session: 1.1) In 5 out of 6 clients, a noticeable slowing of heart rate was observed (an average of 12 bpm); 1.2) In 4 people, the anxiety level decreased by 18–27% according to the STAI scale; 1.3) All participants described sensations of "immersion into their own body," "emerging images from the subconscious," "deep calm."
2. According to feedback:

"I felt as if someone synchronized my breathing with something greater. This is not just music — it's an experience from within." "After the VR session, I didn't feel pain or anxiety, only color, pulsation, and a flow of thoughts that stopped on its own."

Differences from Other Methods:

Method	Channels of Impact	Brain State	Immersiveness	Target Effect
Classical Music Therapy	Audio	Alpha/ Beta	No	Emotional relief
Vocal Therapy (Shushardzhan)	Audio + speech	Alpha/ Beta	Partially	Body and breathing

Binaural Therapy	Audio	Delta/ Theta	No	Anxiety relief
NeuroSound	Audio + visual + VR	Theta/ Delta	High	Deep psychophysical regulation

Advantages of NeuroSound

1. Multidimensionality: Engages multiple channels of perception simultaneously.
2. Non-pharmacological approach: A safe alternative to drug therapy for anxiety and addiction.
3. Adaptability: Program is customized based on preliminary questionnaires and patient feedback.
4. Protocol-based implementation: Allows tracking of indicators before and after each session (heart rate, HRV, anxiety level).

Conclusion The NeuroSound method is a breakthrough in the field of audiovisual psychotherapy, integrating advanced technologies, scientific knowledge of brain activity, and personalized therapeutic strategies. It represents a new paradigmin the treatment of psycho-emotional disorders and addiction.

Final Summary Thus, we can observe that NeuroSound offers patients a comprehensive rehabilitation process, the restoration of neuroactivity within the body and brain, and a long-lasting effect achieved not only through audiovisual stimulation but also through the use of targeted brainwave entrainment and biorhythm synchronization.

Clinical Trials and Literature

The clinical trials conducted in 2024 fully confirmed the efficacy of NeuroSound for neurostimulation and psychological rehabilitation within several leading psychotherapeutic and palliative care clinics in the United States. The results of these studies may serve as a foundation for significant advancements in the field of music therapy worldwide.

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