

2 CLINICAL AND SPECIAL PSYCHOLOGY КЛИНИКАЛЫҚ ЖӘНЕ АРНАЙЫ ПСИХОЛОГИЯ КЛИНИЧЕСКАЯ И СПЕЦИАЛЬНАЯ ПСИХОЛОГИЯ

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META-MESSAGE IN THE PSYCHO-FUNCTIONAL REBUILDING METHOD: NEUROBIOLOGICAL MECHANISMS AND EXPERIENCE OF USE

Abstract

This article considers the phenomenon of meta-messages as a central mechanism of the psychofunctional unblocking method (PF_R) and analyzes its putative neurobiological and psychophysiological foundations. The aim of the study was to determine the role of meta-messages in the activation of unconscious processes associated with the resolution of internal conflicts, emotional processing, and psychophysical regulation. The theoretical model of the method is based on modern concepts of mirror neurons, nonverbal communication mechanisms, trance states of consciousness, and the neurodynamics of emotional response. The study included 4,390 people aged 25 to 58 years, 88.6% of whom were women and 11.4% were men. After the PF_R sessions, the subjective and observed reactions of the participants were analyzed. Most of the subjects experienced trance and theta-dominant states of consciousness, as well as pronounced emotional, motor, and autonomic reactions. The effectiveness of the method was confirmed by a statistically significant improvement in the psychological state on the visual analogue scale: the average score increased from 4.8 ± 2.3 to 8.8 ± 1.3 . These results demonstrate the high therapeutic value of meta-messages as a means of non-verbal influence and demonstrate the potential of the PF_R method in the treatment of chronic psychological trauma and emotional blocks.

Keywords: meta-message, mirror neurons, psycho-functional rebuilding, unconscious conflict, nonverbal communication.

Introduction

Emotional and behavioral states demonstrate significant contagion effects, wherein observation of affective displays (e.g., laughter, distress, disgust, or pain) elicits corresponding shared emotional experiences in observers. Watching another individual's suffering evokes empathy in us, and observing an outstanding actor, musician, or athlete at the peak of their abilities creates a sensation as if we are

part of their experience. However, it is only recently, with the discovery of mirror neurons, that we have begun to understand how this phenomenon of emotional and motor resonance is realized in the human brain [1, 2].

The PF_R method represents a distinct approach in modern psychology. The mechanisms of this method are based on deep psychophysical interaction with the participant's subconscious and body. Unlike traditional interventions, PF_R enables participants to autonomously process psychological trauma, resolving internal conflicts at the subconscious level without direct external guidance – a mechanism analogous to abreaction (i.e., the biological discharge [3]. The method comprises four core components: meta-message demonstration, verbal part, dynamic part, and participant interview. This article focuses on the meta-message, the foundational element of PF_R, examining its neurobiological basis and therapeutic role [3, 4].

Psychophysics is the connection between the body and the psyche, which is formed through the interaction of a person with the environment and the people around him [5]. The human brain – our consciousness – develops over time and contains numerous associations formed in the learning process, creating its own internal map of the world (meanings) based on personal experience [6, 7].

Each individual carries information accumulated over the years, stored not only as memories in the mind, but also on a physical level in the form of muscle memory. Any emotionally painful experiences create mental blocks, as well as amnesia and anesthesia in the body (preserving the somatic-psychological link), which subsequently lead to psychosomatic reactions, neuroses, and disorders [8].

This mechanism was first described by I.M. Sechenov in 1878, and the further development of his ideas was reflected in the works of P. Janet in 1889. In the leading international scientific journal *Science*, Damasio and colleagues published an article reporting that re-experiencing intense negative emotions triggers significant changes in brain regions receiving signals from muscles, the gut, and the skin – precisely those areas responsible for regulating the body's vital functions [9].

The researchers' findings demonstrated that recalling past emotional events evokes the same visceral sensations originally experienced during the event itself. Each type of emotion generates its own distinct somatic patterns. For example, a specific brainstem region "activated during sadness and anger but remains inactive during joy or fear". These brain structures lie below the limbic system, and we implicitly acknowledge their role whenever we use colloquial phrases linking strong emotions to the body: "You make me sick"; "I got chills"; "I got goosebumps"; "A lump in my throat"; "My heart dropped"; "It made my blood run cold", "My hair stood on end" [8, 9].

The brainstem and limbic system become activated when humans face existential threats, causing an overwhelming fear of death accompanied by extreme psychological arousal. For individuals re-experiencing such emotions, they become trapped in a state of perceived mortal danger – paralyzing terror, self-aggression, and helplessness [5]. Chronic sleep disturbances, anhedonia (loss of pleasure in food and life), and psychosomatic disorders are common consequences. In classical psychology and psychotherapy, therapists guide clients to repeatedly re-live traumatic situations until their maladaptive beliefs shift, replacing negative cognitions with therapeutic suggestions. The core objective such therapy is to help clients regain the ability to respond adaptively to danger and restore feelings of safety, relaxation, and belonging [5, 8].

Research on the functions of mirror neurons has been ongoing for over 30 years, and this discovery has revolutionized cognitive neuroscience. The seminal breakthrough came in the early 1990s, when Y. Sun and colleagues observed a remarkable property in primate neurons: these neurons were activated not only when performing an action but also when observing the same action performed by another animal, as confirmed through brain electro stimulation experiments [10]. As shown by Y. Sun, the mirror neuron system fires both during action execution and observation, creating a neural bridge for empathy. Subsequently, researchers obtained evidence of the presence of similar neurons in humans using functional magnetic resonance imaging (fMRI) of the brain [11]. Today, mirror neurons are actively used in the rehabilitation of limb motor functions, and authors describe this as mirror therapy [12].

Scientists have identified that mirror neurons are sensorimotor neurons in the brain that activate and transmit excitation to other parts of the nervous system both when performing a specific motor act and when observing the action or inaction of another person. According to research on mirror neurons,

an organized sequence of information transmission processes is initiated in the brain, starting from sensory areas to associative areas for integration and subsequent transmission of the resulting image to the motor cortex, where the corresponding movements are initiated. Thus, these neurons “mirror” the actions of others. Mirror neurons are distributed across multiple brain regions, including the frontal, parietal, and temporal lobes, as well as the thalamus. These findings led to the conceptualization of the “mirror neuron system” [11, 13, 14].

Prominent neuroscientist V.S. Ramachandran predicted that “mirror neurons will do for psychology what DNA did for biology” [15].

The unique properties of these neurons have attracted the attention interdisciplinary scientific interest. Researchers across fields – including sociologists, anthropologists, and even artists – have shown keen interest in this phenomenon. For instance, director Peter Brook noted that mirror neurons shed new light on the mysterious connection between actor and audience: when a great actor performs, the same areas in the viewer’s brain are activated as in the performer, including both motor and emotional components [16].

This mechanism underpins empathy, social learning, and nonverbal communication, holding fundamental significance for psychology, psychotherapy, and neuroscience. As every mental action has physical consequences, and every physical action carries psychological effects, these interconnections form the foundation the Psycho-Functional Rebuilding Method (PF_R). When applying the PF_R method, deep-seated connections between the body and subconscious are activated in an ecologically safe manner for the client. This enables the client to independently restructure maladaptive neural patterns, resolve unconscious inner conflicts at their own comfortable pace, and engage with the body’s authentic somatic language. In this article, we examine how the discovery of mirror neurons has transformed our understanding of human behavior and explore its potential applications in psychological and therapeutic practice – particularly within the PF_R method.

Modern neuroscience research confirms that nonverbal communication plays a pivotal role in transmitting emotional states and activating profound mental processes. The PF_R method employs a video meta-message that bypasses conscious filters to directly influence the participant’s subconscious through mirror neuron mechanisms. This is evidenced by: subtle but observable dynamics of facial microexpressions, pupillary responses, and bodily manifestations of emotional processing. The PF_R’s meta-message differs from conventional hypnotic induction by combining mirror neuron activation with somatic feedback loops, a approach not yet described in prior literature.

Materials and methods

1. Participants

The study included 4,390 participants (18+ years) from six countries:

- ◆ Kazakhstan: 43% (n=1,888)
- ◆ Russia: 34% (n=1,493)
- ◆ Germany: 16% (n=702)
- ◆ Other countries: 7%

Gender distribution:

- ◆ Female: 88.6% (n=3,890)
- ◆ Male: 11.4% (n=500)

Age range: 25-58 years (mean 41.4±7.5)

Our study describes the use of the PF_R method. This method was first used on April 20, 2020, patented in the same year, and has since been employed in both individual and group therapy.

Before applying the PF_R Method, each participant provided their consent to participate, agreed to the use of the results obtained, and received full information about the conduct and course of the group PF_R session, as well as possible physical and emotional reactions during the viewing of the meta-message and the therapeutic session process.

Each participant was interviewed to identify exclusion criteria. The exclusion criteria included: childhood, recent acute illness or exacerbation of a chronic illness, a history of epilepsy, psychiatric disorders, developmental delays, congenital anomalies, encephalopathy, Alzheimer’s and Parkinson’s diseases, organic brain lesions, cancer, diabetes, pregnancy or breastfeeding, and early or late

postoperative periods. The inclusion criteria were: age 18 or older, consent to participate in the group PF_R session, and the presence of a psychological issue in some area of life.

2. Procedure

Intervention Protocol:

1. Visual Analog Scale (VAS)

2. PF_R method session. The PF_R method comprises four key components.

Structure of the PF_R method session:

1.1 Meta-message demonstration (trance induction phase) (10–20 minutes)

The meta-message forms the foundation of the PF_R method. During the first block, the meta-message is transmitted and “delivered” to the participant’s subconscious. The meta-message is transmitted through a specially edited video sequence, conveying the state from the subconscious of the people in the video to the session participants, thus influencing the viewers’ subconscious. This meta-message includes:

2.1.1 Emotional states of participants (before therapy, during the session, and after it).

2.1.2 Nonverbal patterns that activate abreaction processes (biological discharge).

2.1.3 Hidden visual and auditory triggers that resonate with individual unconscious conflicts.

2.1.4 Specially selected sound patterns that reduce beta rhythm activity (conscious control), enhance theta and alpha activity (trance state), synchronize with physiological processes, and activate the parasympathetic nervous system, facilitating spontaneous abreaction.

1.2 Verbal component (10–20 minutes)

During sessions, the therapist operates in a functional trance state - intentionally induced pre-session and maintained throughout participant or group of people interactions. The therapist delivers targeted verbal directives to uncover and resolve the client’s presenting unconscious conflicts.

1.3 Dynamic phase (60–90 minutes)

This phase initiates spontaneous somatic processing where: abreactions, the body self-regulates maladaptive patterns at its intrinsic rhythm. Group dynamics (when applied) accelerate subconscious disclosure and biological recovery processes compared to individual sessions

1.4 Participant interview (10–20 minutes)

Structured debriefing includes tripartite evaluation:

2.4.1 Affective state assessment (“How do you feel?”)

2.4.2 Phenomenological description (“How would you characterize your current state?”)

2.4.3 Future integration (“How will you move forward with this change?”).

In the PF_R method, background music is used to induce a trance state through neurophysiological mechanisms of brain rhythm synchronization. The musical background accompanies the entire session, and the meta-message also includes this musical accompaniment.

3. Post-session integration interview. Follow-up at 1 day, 3 days, and 3–6 months

3. Measure

3.1 Visual Analogue Scale (1–10) (follow-up at pre-session and 3–6 months)

3.2 Qualitative reaction coding by follow-up questionnaires (before and after the sessions at 3-6 months)

The PF_R session was then conducted according to the patented and previously described scheme. Follow-up questionnaires were administered by phone or in person one day, three days, and three to six months after the session. Participants’ conditions before and after the sessions at 3-6 months were assessed using a visual analog scale (VAS) from 1 to 10 points.

4. Data Analyses

The statistical analysis of the data was performed using the R statistical programming language and environment (version 3.6.1) in the RStudio IDE (version 1.3.1093). The distribution of continuous and discrete quantitative variables in the sample is presented as the arithmetic mean and standard deviation ($M \pm SD$), as well as the minimum and maximum values. Categorical indicators are presented as absolute numbers and percentages (n (%)).

The normality of the sample distribution was assessed using the Shapiro-Wilk test. Differences in the distributions of categorical variables in independent samples were tested using the Chi-square test and Fisher’s exact test, while McNemar’s test was used for dependent samples. To evaluate the association between outcomes and their predictors, multivariate analysis was performed using binary logistic regression.

Results and discussion

The study cohort consisted of 4390 adult participants aged 18 years and older who underwent psychofunctional release (PF_R) sessions conducted in either an individual or group format. Group sizes ranged from 1 to 63 participants per session, allowing for the evaluation of the method in a variety of therapeutic settings and levels of interpersonal interaction. Of the total sample, 3890 participants were female (88.6%) and 500 participants were male (11.4%). Participants ranged in age from 25 to 58 years, reflecting a mature adult population with a broad spectrum of psychosocial and emotional experiences relevant to the study objectives. The mean age of the overall cohort was 40 years, with a mean age of 41.4 ± 7.5 years. Female participants had a mean age of 41.1 ± 7.3 years, with a range of ages from 25 to 58 years, with a mean age of 40 years. The mean age of male participants was 43.6 ± 8.9 years, with a range of 28 to 54 years, and a median age of 45.5 years.

The preponderance of female participants may reflect gender differences in engagement in psychotherapy and body-focused therapeutic practices, as well as women’s tendency to seek interventions focused on emotional regulation and trauma-related symptoms. The demographic structure of the sample provided a sufficiently large and heterogeneous population to assess the psychophysiological and behavioral effects associated with the PF_R method and the perception of meta-messages during therapy sessions. A detailed breakdown by age and gender is shown in figure 1.

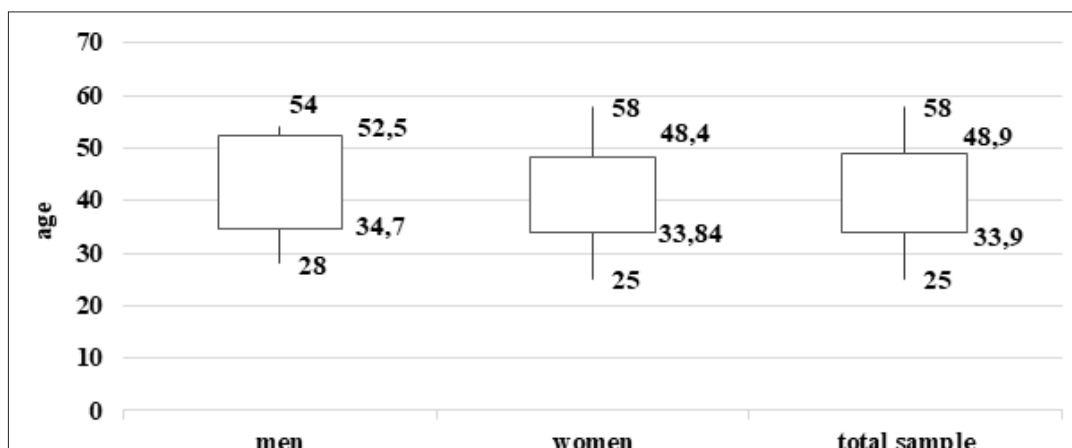


Figure 1 – Gender distribution of participants in PF_R method sessions

Note: Created by the authors based on research.

The study cohort showed considerable geographical diversity and included participants from six countries in Central Asia, Eastern Europe, and Western Europe. The largest proportion of participants was recruited from Kazakhstan, accounting for 43% of the total sample (n=1888), followed by Russia with 34% (n=1493). Participants from Germany accounted for 16% of the cohort (n=702), and smaller groups were recruited from Uzbekistan – 5% (n=219), France – 1% (n=44), and the United Arab Emirates – 1% (n=44). This multinational composition allowed us to assess the psychophysiological and behavioral effects of the PF_R method in culturally heterogeneous populations and in different sociocultural settings. Detailed data on the geographical distribution are shown in figure 2.

The broad international representation of participants increases the external validity and potential cross-cultural applicability of the study findings. Despite differences in language, cultural background, social norms, and emotional expression patterns, participants from all regions demonstrated similar engagement with the psychofunctional release process and similar phenomenological responses to the meta-message intervention. Such consistency may indicate the existence of universal neurobiological and nonverbal mechanisms underlying the emotional resonance, mirror neuron activity, and altered states of consciousness elicited during PF_R sessions. Furthermore, the preponderance of participants from post-Soviet countries may reflect a regional interest in integrative psychophysiological approaches and trauma-focused therapeutic practices, while the participation from Western Europe and the Middle East reflects the growing international recognition of nonverbal and body-focused psychotherapy methodologies.

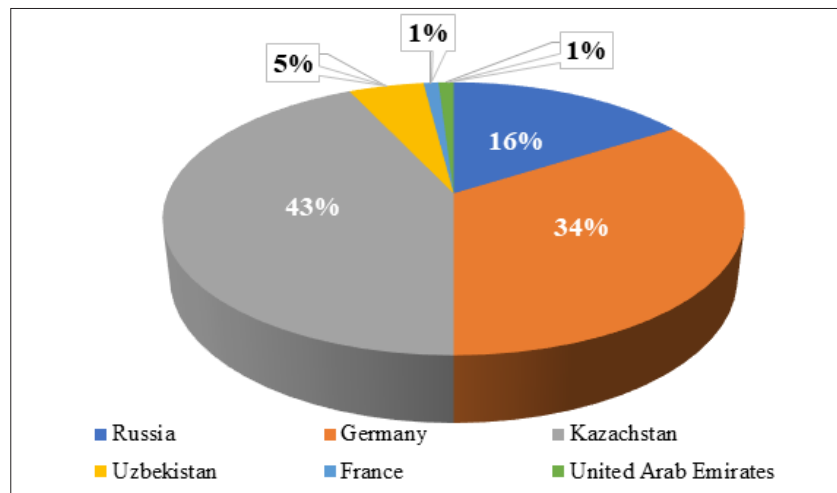


Figure 2 – Geographic distribution of participants in PF_R Method sessions

Note: Created by the authors based on research.

A total of 107 psychofunctional release (PF_R) sessions were conducted in individual and group formats over the five-year follow-up period. Each session lasted no more than 3 hours, with an average session duration of approximately 2.5 hours. During all sessions, participants were exposed to a structured meta-message designed to activate nonverbal psychophysiological responses and facilitate unconscious emotional processing. After each session, participants completed a standardized post-session questionnaire in which they described their subjective experiences, emotional states, bodily sensations, and behavioral reactions associated with receiving the meta-message. Analysis of the responses revealed that most participants reported multiple reaction categories simultaneously, indicating the multidimensional psychophysiological effects of the PF_R intervention.

A total of 3,387 participants (77.1%) reported the onset of altered states of consciousness characterized by trance-like immersion accompanied by a variety of emotional, somatic, or behavioral manifestations. In contrast, 1003 participants (22.9%) reported no observable reactions or no apparent perceived trance state. Of all respondents, 3261 (74.3%) specifically described experiences consistent with trance phenomena, including sleep states, decreased voluntary cognitive control, altered time perception, dissociative immersion, and deep internal concentration. These findings may reflect the activation of neurophysiological mechanisms associated with theta-dominant brain activity and decreased cortical filtering, which are often observed during hypnotic, meditative, and trauma-resolving states.

Emotional reactions represented one of the most frequently observed response categories and were reported by 2320 participants (52.9%). These reactions included acute fear reactions, emotional numbing, uncontrolled laughter, spontaneous aggression, feelings of helplessness, depressive affect, and episodes of intense emotional relaxation. A wide range of emotional manifestations indicate the activation of deeply encoded affective material and previously repressed emotional experiences. From a psychodynamic and neurobiological perspective, such reactions may reflect a temporary destabilization of habitual emotional defense mechanisms and an increased availability of subcortical emotional networks involved in processing trauma-related memory.

Motor phenomena were documented in 1192 participants (27%) and included involuntary muscle contractions, facial and trunk muscle twitching, spontaneous limb movements, and short-term motor discharges. These reactions may represent psychomotor manifestations of autonomic arousal and sensorimotor release associated with the processing of unresolved emotional tension. In addition, 118 participants (4.3%) experienced autonomic or autonomic reactions, including nausea, vomiting, coughing, and excessive sweating. The session organizers also noted temporary skin hyperemia in the face, neck, and upper chest areas in some participants; however, these observations were excluded from statistical analysis because the participants themselves were generally unaware of these physiological changes during the session.

The results obtained indicate that exposure to the PF_R meta-message is associated with a wide range of subjective and objective psychophysiological responses, including emotional, motor, autonomic, and altered consciousness components. The predominance of trance-related and emotional responses supports the hypothesis that the PF_R method may involve deep nonverbal regulatory mechanisms related to emotional resonance, mirror neuron activity, autonomic nervous system modulation, and implicit trauma processing. The distribution and frequency of responses observed during the PF_R sessions are shown in figure 3.

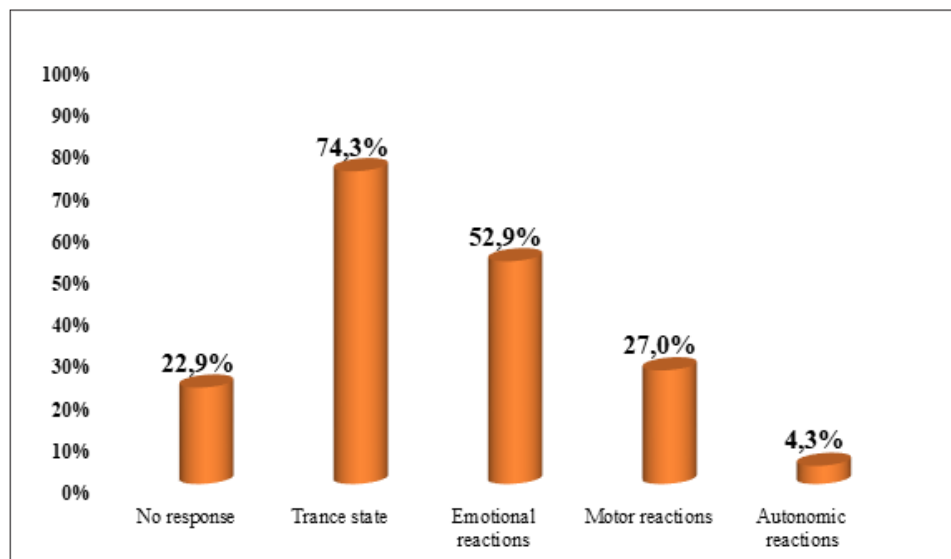


Figure 3 – Spectrum of reactions to PF_R meta-message exposure reported by participants

Note: Created by the authors based on research.

Analysis of participants' self-reports obtained after the dynamic phase of the Psychofunctional Release (PF_R) sessions revealed a high prevalence of combined psychomotor and emotional responses. The majority of respondents – 3198 of 4390 participants (72.9%) – described a simultaneous shift in motor and affective responses when exposed to the meta-message. This combination of responses suggests the activation of integrated psychophysiological processes involving emotional arousal, autonomic regulation, and sensorimotor discharge. The observed synchronization of emotional and bodily expressions may indicate the involvement of limbic-sensorimotor networks associated with latent trauma processing, nonverbal emotional communication, and activation of mirror neuron systems. These results support the hypothesis that the PF_R method induces a multimodal state of psychophysiological activity in which emotional processing is closely linked to bodily expression and involuntary motor activity.

Motor manifestations represented the most frequently observed response category and were 18.5% more frequent than isolated emotional reactions, documented in 4013 participants (91.4%). According to the subjective characteristics of the participants, the predominant motor phenomena included spontaneous movements of the upper and lower limbs, involuntary movements of the head, and uncontrolled changes in body posture, which were reported by 2697 participants (61.4%). In addition, contractions and tension of the anterior abdominal wall muscles were observed in 1254 participants (28.6%). Most respondents described these reactions as occurring automatically, without conscious intention or voluntary control. From a neurophysiological perspective, such psychomotor manifestations may be associated with subcortical activation patterns, autonomic discharge, and the release of chronic muscle tension associated with emotionally significant experiences. These findings are consistent with body-centered psychotherapy and somatic trauma processing theories, which conceptualize involuntary motor activity as a mechanism for psychophysical discharge and restoration of autonomic regulation.

Emotional reactions were documented in 3198 respondents (72.9%) and varied considerably in intensity and phenomenological content. The most common manifestations included screaming, crying, and spontaneous laughter, which were reported by 2948 participants (67%). Feelings of fear or anxiety were clearly described in 1129 participants (25.7%). Participants described these emotional states as sudden, overwhelming, and difficult to cognitively regulate during the session. In many cases, emotional reactions occurred simultaneously with bodily sensations and motor discharges, indicating a close interaction between the affective and somatic processing systems. The occurrence of intense emotional relaxation may indicate a temporary weakening of inhibitory psychological defenses and the activation of previously repressed emotional memories or unresolved traumatic experiences. Such reactions are characteristic of altered states of consciousness associated with increased emotional availability and decreased executive control.

Autonomic or autonomic reactions were observed in 753 participants (17%) and included nausea, vomiting, coughing, hypersalivation, excessive sweating, and transient respiratory rhythm disturbances. These manifestations may reflect autonomic nervous system activity and acute physiological arousal associated with emotionally significant internal experiences. Although autonomic reactions are rarer than motor or emotional manifestations, their presence suggests that the PF_R process may involve deep psychophysiological regulatory mechanisms beyond purely cognitive or affective domains.

Interestingly, 125 respondents (approximately 2% of the sample) initially reported “no reactions” during the session. However, detailed analysis of their questionnaires revealed the presence of involuntary limb movements and other observable psychomotor manifestations that the participants themselves did not subjectively classify as meaningful reactions. In most cases, these individuals were expecting intense or dramatic experiences and therefore did not assess subtle physiological or motor responses. This discrepancy between subjective interpretation and objective observation highlights the importance of combining self-report and behavioral assessment methods when examining altered states of consciousness and psychophysiological responses during therapeutic interventions.

Additional phenomena reported during the dynamic phase of PF_R sessions included vivid memories of traumatic life events, transient hallucinatory experiences, symbolic imagery, altered perceptions of reality, and spontaneous intuitive insights. These experiences were described by 754 participants (17% of the total cohort). In many cases, participants reported the sudden emergence of autobiographical memories accompanied by strong emotional involvement and somatic sensations. Such phenomena may indicate the activation of implicit memory networks and altered integrative processing of emotionally significant material. It is worth noting that all participants showed symptoms consistent with trance-like states of consciousness during the session, characterized by narrowing of attention, altered sensory perception, emotional immersion, and decreased critical self-control.

The results obtained indicate that the dynamic phase of PF_R sessions is associated with complex multimodal psychophysiological reactions that include emotional, motor, autonomic, and altered consciousness components. The predominance of integrated motor-emotional responses supports the concept that nonverbal psychotherapeutic interventions may involve deeply integrated neural systems responsible for emotional regulation, bodily expression, and processing of latent trauma. The distribution and phenomenology of the reactions observed during the dynamic phase of PF_R sessions are shown in figure 4.

The psychological and subjective functional state of the participants before and after the psychofunctional release (PF_R) sessions was assessed using a visual analogue scale (VAS), in which participants independently rated their overall psycho-emotional state on a 10-point scale. Analysis of the obtained data showed a clear positive change in subjective well-being after exposure to the PF_R intervention and meta-message. In the total cohort of 4390 participants, the mean baseline score before the session was 4.8 ± 2.3 points, which indicates a mostly average or reduced level of psycho-emotional well-being at the beginning of the therapeutic process. After the end of the session, the mean VAS score increased to 8.8 ± 1.3 points, which indicates a significant subjective improvement in emotional state, internal comfort and perceived psychological stability.

The observed increase in VAS scores indicates that the PF_R method can have a significant short-term regulatory effect on the emotional and psycho-physiological state of the participants.

The relatively high standard deviation before the session indicates a clear heterogeneity in the initial psychological state of the participants, reflecting different levels of emotional distress, chronic stress, unresolved trauma, or psychosomatic tension in the study population. Conversely, the decrease in post-session score variability may indicate a partial convergence among the participants towards a stable and positive psychoemotional state. Such results may indicate the activation of adaptive neurophysiological mechanisms associated with emotional relaxation, autonomic regulation, reduction of internal psychological tension, and temporary restoration of affective balance.

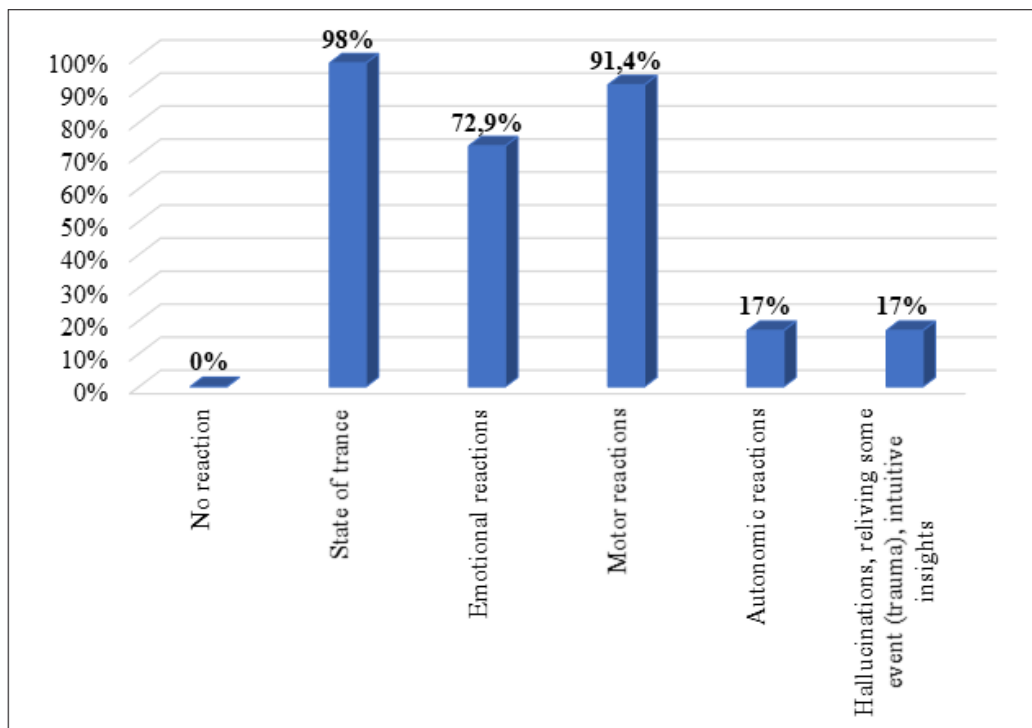


Figure 4 – Subjective experiences reported during the active intervention phase of PF_R therapy sessions

Note: Created by the authors based on research.

Gender-specific analysis showed relatively positive dynamics in female and male participants, although certain baseline differences were observed. Among the 3890 women who participated in the study, the mean VAS score before the session was 4.7 ± 2.2 points, with values ranging from 1 to 10 points. After the PF_R session, the mean score increased to 8.8 ± 1.3 points, with post-session values ranging from 5 to 10 points. These results indicate a significant improvement in the subjective emotional state of female participants and indicate a high degree of response to the intervention. The large proportion of women in the cohort may also reflect an increased willingness of women to participate in therapeutic practices aimed at emotional processing and psychophysiological self-regulation.

Among the 500 male participants, the baseline psychological state before the session was relatively high, with a mean VAS score of 5.6 ± 2.0 points and a range of 3 to 10 points. After the session, the mean score increased to 9.1 ± 1.0 points, with values ranging from 7 to 10 points. Although men reported a slightly more favorable baseline state compared to women, the post-session improvement was also significant, indicating that the PF_R method produced positive psycho-emotional effects despite gender differences. The narrow range and low variability of post-session scores among male participants may reflect the homogeneity of subjective results or differences in emotional self-report patterns between the sexes.

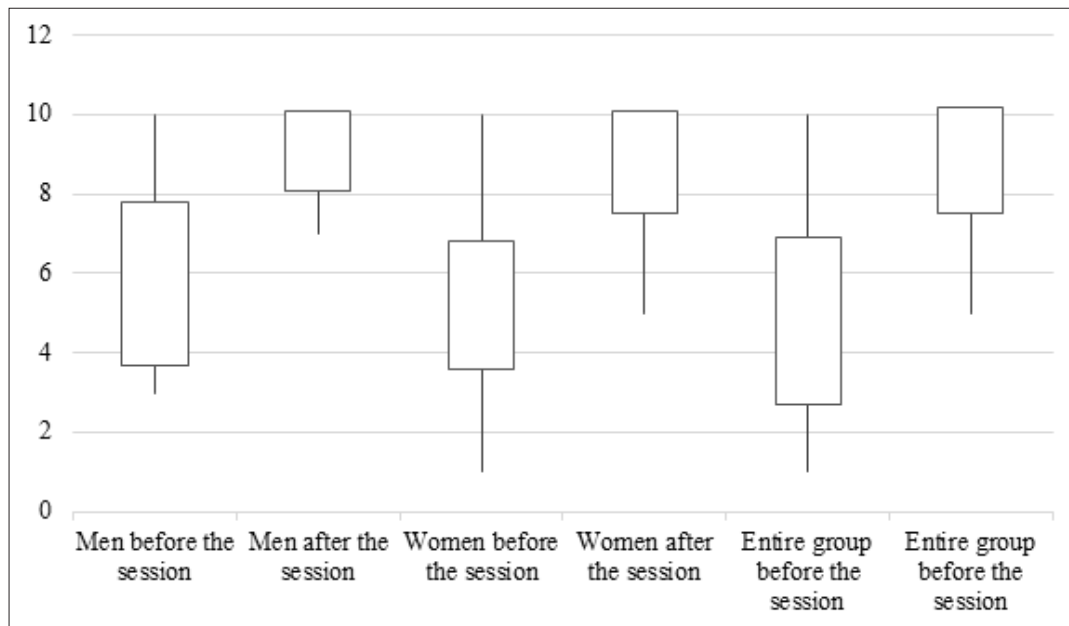


Figure 5 – Participant states measured by Visual Analogue Scale (VAS, 1–10 points): male, female, and total group outcomes (PF_R method application)

Note: Created by the authors based on research.

VAS-based assessments demonstrated statistically and clinically significant improvements in participants' subjective psychoemotional state after PF_R sessions. The magnitude of the positive changes observed across the cohort supports the hypothesis that exposure to PF_R meta-message may contribute to rapid modulation of emotional distress, reduction of internal tension, and improvement in perceived psychological well-being. These findings are consistent with the broader concept that nonverbal psychophysiological interventions can activate deep regulatory mechanisms involved in emotional processing, autonomic stabilization, and restoration of adaptive psychological function. Detailed comparative data on pre- and post-session VAS scores are shown in Figure 5. The indices demonstrated no significant associations with demographic factors (age, gender), presenting problems, or session reaction intensity (all $p > 0.05$).

Currently, it is assumed that each person forms a connection between their body and the surrounding world, including other people. This connection develops over a long period and contains many different associations formed through observation, imitation, and learning, creating an individual internal map of the world (of values) based on personal experience. Thus, an individual carries within themselves information accumulated over the years (their "internal pain"), which is stored not only in the form of fragmented memories in the amygdala but also at the level of the physical body in the form of muscle memory.

The therapeutic efficacy of PF_R emerges from its unique integration of mirror neuron activation with psychophysiological discharge phenomena. Building upon Sechenov's (1878) foundational work on reflex mechanisms, contemporary research by Damasio and colleagues has elucidated how emotional reactivation induces neuroplastic modifications in somatosensory integration areas. These findings are particularly relevant to PF_R's observed effects, where meta-message exposure precipitates a cascade of physiological responses mediated through the mirror neuron system.

The method's distinctive feature lies in its capacity to induce trance states through nonverbal meta-communication, thereby facilitating what appears to be a targeted discharge of psychosomatic tension. This process engages not only cortical mirror networks but also subcortical structures involved in emotional processing and autonomic regulation. Damasio's demonstration of emotion-related neuroplasticity in visceral representation areas provides a plausible explanation for the somatic manifestations frequently observed during PF_R sessions, including involuntary movements and autonomic responses.

Various studies have shown that electrical oscillations in the brain are accompanied by changes in the frequency spectrum of signals on an electroencephalogram (EEG). Depending on the waveform, amplitude, topography, frequency range, and type of response, different EEG rhythms are distinguished. This is supported by research in neuroscience, psychology, and clinical hypnotherapy. Numerous studies demonstrate that a trance state is associated with an increase in theta rhythm (4–7 Hz), while the hypnotic response (response to suggestion) is linked to changes in gamma oscillation patterns (30–100 Hz). The nature of these changes (enhancement, weakening, or temporary reorganization of gamma activity) varies depending on many factors, including the content of the suggestion, individual characteristics of the person, and musical accompaniment. Key mechanisms of music’s impact on the trance state have been experimentally confirmed by studies. Music with a rhythm of 60–80 beats per minute and monotonous patterns promotes an increase in alpha rhythm (8–13 Hz), which corresponds to a state of relaxed wakefulness. Slower and repetitive sounds (such as shamanic drums, low-frequency humming) can stimulate theta activity (4–7 Hz), characteristic of deep trance, meditation, and hypnosis, which directly affects theta synchronization, facilitating entry into a trance. The monotony and cyclical nature of music reduce the activity of beta rhythms (13–30 Hz), associated with logical analysis. This promotes dissociation – detachment from external stimuli and immersion in internal experiences, which activates the limbic system and affects the amygdala and hippocampus, enhancing suggestibility [17].

The PF_R method is based on the discovery of the mirror neuron system and the ability to unconsciously and automatically “mirror” the emotions and actions of other people. When a participant views a meta-message, their brain unconsciously reproduces the recorded states, triggering the process of spontaneous psycho-physical unlocking.

It is likely that the primary neurophysiological mechanism of the meta-message is the activation of the mirror neuron system, leading to the emotional “contagion” of participants. This “mirroring” of each other occurs not only during the viewing of the meta-message but also during the session itself as participants observe others resolving their unconscious conflicts and expressing emotional and muscular blocks. In the context of PF_R, this can be interpreted as follows:

- ◆ the participant observes video recordings of abreactions (spontaneous movements, emotional reactions) of other people;
- ◆ the mirror neuron system of the observer automatically mimics these states, leading to the unlocking of suppressed emotions;
- ◆ a new neural pattern forms, replacing the maladaptive program.

In the meta-message, special attention is given to pupillary reactions and eye movement patterns. Pupil dilation correlates with emotional arousal. The meta-message uses frames that elicit involuntary pupillary responses, signaling the activation of unconscious processes. Gaze trajectories (saccades, fixations) are associated with access to different types of memory [18]. Visual triggers in the meta-message direct the participant’s attention to the area of suppressed unconscious conflict.

According to the literature, microexpressions are involuntary facial expressions that are not subject to conscious control and occur as a result of suppressing or attempting to hide emotions. At this moment, the basal ganglia and the limbic system of the brain are activated [19]. The microexpressions of people in the meta-message unconsciously trigger the following processes in session participants:

- ◆ activate implicit memory (unconscious memories);
- ◆ trigger bodily reactions (muscle clamps, tremors, changes in breathing);
- ◆ create conditions for spontaneous abreaction – the release of blocked emotions and energy.

Neuroimaging studies have confirmed that the reconsolidation of emotional memories reproduces interoceptive patterns identical to the original event [9]. It has been established that different emotional states have discrete somatotopic representations. In particular, the dorsal sections of the brainstem showed selective activation when experiencing sadness and anger but did not respond to stimuli that evoke joy or fear.

These structures, phylogenetically located below the limbic system, reflect evolutionarily ancient mechanisms of emotional response, which are manifested in universal somatosensory metaphors (such as “a lump in the throat” or “goosebumps”). As modern research has shown, the co-activation of brainstem and limbic structures in response to existential threats triggers a cascade of reactions characterized by hyperarousal and the activation of emotional experiences.

Thus, the conducted analysis demonstrates that a specially structured video sequence containing a meta-message ensures the sequential transmission of the participant's psychophysiological states at various stages of the therapeutic process: before, during, and after the therapeutic session. This technology includes specific suggestive settings aimed at activating subconscious processes and identifying the deep-rooted causes of internal conflicts and emotional blocks.

The intervention's efficacy is based on the phenomenon of resonant interaction between the meta-message and the subconscious structures of mental processes. During the application of the dynamic PF_R method, activation of muscle reactions is observed, manifesting clinically as abreactive phenomena. An important advantage of this approach is its non-verbal nature, which significantly reduces psychological defenses and facilitates more effective release of emotional blocks. Within the framework of the applied PF_R method, the somatic expression of suppressed emotions and bodily tensions occurs through the following physiological manifestations: spontaneous motor reactions, involuntary muscle contractions, autonomic reactions (such as coughing, nausea, vomiting, increased salivation, and sweating), and behavioral manifestations (such as laughter, crying, screaming). The intervention facilitates unmediated access to embodied stress patterns, transcending conscious cognitive control.

The meta-message helps initiate the therapeutic processing and the resolution of unconscious conflicts, as unconscious resonance occurs and the participant automatically recognizes familiar, yet suppressed patterns. Mirror neurons activate corresponding emotions and bodily reactions, triggering abreactions. During the dynamic part of the session, the participant's body spontaneously reproduces movements associated with the muscle memory of trauma. During this process, there is a discharge (catharsis) and a re-experiencing of the conflict in a safe mode. After the abreaction, the participant interprets their sensations (interview), which reinforces a new, adaptive pattern.

Conclusion

The results of this study demonstrate that meta-messaging, as used within the framework of the Psychofunctional Release (PF_R) method, represents a complex multimodal psychotherapeutic stimulus capable of evoking distinct psychophysiological, emotional, motor, and autonomic responses. The observed effects suggest that the PF_R method may activate deep nonverbal mechanisms of emotional processing that operate beyond the level of conscious cognitive control. The high prevalence of trance-like states, spontaneous motor discharge, emotional release, autonomic activity, and subjective psychological improvement suggests that exposure to meta-messaging triggers systemic neuropsychological processes associated with latent trauma processing, autonomic regulation, and emotional integration. These results directly support the first conclusion of the study, namely, that the PF_R meta-messaging elicits a broad spectrum of interrelated psychophysiological responses that include emotional, motor, autonomic, and altered consciousness components.

The dominance of involuntary motor responses and trance-like states observed during the dynamic phase of PF_R sessions is of particular theoretical significance. Psychomotor discharge phenomena, including spontaneous limb movements, muscle contractions, facial grimacing, and body tension release, may reflect the activation of deeply encoded procedural and somatic memory systems associated with unresolved emotional experiences. Such observations support the second finding of the study, which is that PF_R activates deep nonverbal neuropsychological mechanisms associated with implicit emotional processing and sensorimotor discharge. From the perspective of active cognition and body-centered psychotherapy, traumatic experiences may be stored in implicit sensorimotor and autonomic patterns even in the absence of explicit verbal memories. The PF_R method appears to promote the temporary destabilization of these maladaptive psychophysiological patterns, thereby creating conditions for emotional relaxation and psychophysiological restructuring.

The emotional reactions documented in the study, including fear, crying, aggression, helplessness, laughter, depressive affect, and cathartic experiences, reflect the activation of emotionally salient memory networks and limbic regulatory systems. The simultaneous occurrence of emotional, motor, and autonomic responses suggests the involvement of integrated limbic-autonomic-sensorimotor circuits involved in trauma-related processing. These findings are consistent with contemporary

neuropsychological theories referenced in this paper and support the third conclusion of the study, according to which the responses observed during PF_R sessions are consistent with contemporary concepts such as embodied cognition, interoceptive regulation, mirror neuron activation, and predictive coding. In particular, the work of Nummenmaa et al. [20] on emotion-specific body activity patterns, the study of interoception by Critchley and Harrison [21], and the active inference system by Friston [22] provide a theoretical framework for understanding the neurobiological mechanisms underlying the psychophysiological changes induced by PF_R.

An important contribution of this study lies in the documented improvement in the subjective psycho-emotional state of the participants after the PF_R sessions. The statistically significant increase in the visual analogue scale (VAS) scores of both female and male participants indicates a significant decrease in psychological distress and an improvement in emotional well-being after exposure to meta-message. These results directly support the fourth conclusion of the study, which indicates the potential therapeutic efficacy of the PF_R method. The decrease in the variability of VAS scores after the session also indicates a partial convergence to a stable psycho-emotional state within the cohort, which may indicate a normalization of autonomic regulation and a decrease in internal emotional tension.

The multinational and predominantly group structure of the sessions also suggests the possible role of collective nonverbal synchronization in enhancing the therapeutic effects. Previous studies by Kule and Tschacher [23] have shown that nonverbal synchronization enhances emotional adaptation and interpersonal regulation in a therapeutic setting. Similar mechanisms may have contributed to the high frequency of synchronized emotional and motor responses observed during PF_R sessions. This observation is directly consistent with the fifth finding of the study, which emphasizes that group dynamics and nonverbal synchronization can significantly enhance emotional resonance and psychophysiological impact during PF_R interventions.

Additional phenomena reported by participants, including re-experiencing traumatic events, symbolic imagery, intuitive insights, and hallucinatory experiences, indicate the activation of implicit autobiographical memory systems and the temporary weakening of simple cognitive defense mechanisms. These findings are conceptually consistent with the research of Koch et al. [23], who demonstrated that body-centered therapeutic approaches can facilitate access to preverbal trauma-related material that is not accessible through traditional verbal psychotherapy. In this regard, these findings support the sixth conclusion of the study, which is that PF_R may be a promising adjunctive therapy for individuals with chronic psychological trauma, psychosomatic dysregulation, and emotional disorders that are resistant to verbal interventions alone.

In addition, several methodological limitations must be acknowledged. The study relied primarily on subjective self-report measures and observational data, and did not include objective neurophysiological assessment methods such as EEG, functional neuroimaging, heart rate variability analysis, galvanic skin response monitoring, or neuroendocrine markers. Furthermore, the lack of a control group and long-term follow-up limits the ability to determine the specificity and duration of the observed therapeutic effects. These limitations support the seventh conclusion of the study, which emphasizes the need for interdisciplinary studies that integrate psychology, neurology, psychophysiology, and embodied cognitive frameworks to determine the neurobiological correlates and long-term clinical efficacy of the PF_R method.

The convergence of emotional, motor, autonomic, and trance-related phenomena observed in a large multinational cohort suggests that the PF_R meta-message may capture universal neurobiological mechanisms underlying embodied emotional regulation and interpersonal resonance. The results of the current study extend the current understanding of nonverbal psychotherapeutic effects and provide empirical support for the hypothesis that deeply embodied mechanisms of emotional processing may serve as important therapeutic targets in the treatment of trauma-related and psychosomatic disorders.

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ПСИХО-ФУНКЦИОНАЛДЫ ҚАЛПЫНА КЕЛТІРУ ӘДІСІНДЕГІ МЕТА-ХАБАРЛАМА: НЕЙРОБИОЛОГИЯЛЫҚ МЕХАНИЗМДЕР ЖӘНЕ ҚОЛДАНУ ТӘЖІРИБЕСІ

Андатпа

Бұл мақалада мета-хабарламалар құбылысы психофункционалды блоктан шығару әдісінің (PF_R) орталық механизмі ретінде қарастырылады және оның болжамды нейробиологиялық және психофизиологиялық негіздері талданады. Зерттеудің мақсаты ішкі қатығыстарды шешумен, эмоционалды өңдеумен және психофизикалық реттеумен байланысты бейсаналық процестерді белсендірудегі мета-хабарламалардың рөлін анықтау болды. Әдістің теориялық моделі айна нейрондарының, вербалды емес коммуникация механизмдерінің, сананың транс күйлерінің және эмоционалды жауаптың нейродинамикасының заманауи тұжырымдамаларына негізделген. Зерттеуге 25 жастан 58 жасқа дейінгі 4390 адам қатысты, олардың 88,6%-ы әйелдер және 11,4%-ы ерлер болды. PF_R сессияларынан кейін қатысушылардың субъективті және бақыланған реакцияларына талдау жүргізілді. Субъектілердің көпшілігінде сананың транс және тета-доминантты күйлері, сондай-ақ айқын эмоционалды, моторлық және вегетативті реакциялар байқалды. Әдістің тиімділігі визуалды аналогтық шкала бойынша психологиялық жағдайдың статистикалық тұрғыдан айтарлықтай жақсаруымен расталды: орташа балл $4,8 \pm 2,3$ -тен $8,8 \pm 1,3$ -ке дейін өсті. Бұл нәтижелер мета-хабарламалардың вербалды емес әсер ету құралы ретінде жоғары терапиялық құндылығын көрсетеді және созылмалы психологиялық жаракат пен эмоционалды блоктарды емдеудегі PF_R әдісінің әлеуетін көрсетеді.

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МЕТА-СООБЩЕНИЕ В МЕТОДЕ ПСИХОФУНКЦИОНАЛЬНОЙ РАЗБЛОКИРОВКИ: НЕЙРОБИОЛОГИЧЕСКИЕ МЕХАНИЗМЫ И ОПЫТ ПРИМЕНЕНИЯ

Аннотация

В данной статье рассматривается феномен метасообщений как центральный механизм метода психофункциональной разблокировки (PF_R) и анализируются его предполагаемые нейробиологические и психофизиологические основы. Целью исследования было определение роли метасообщений в активации бес-

сознательных процессов, связанных с разрешением внутренних конфликтов, эмоциональной обработкой и психофизической регуляцией. Теоретическая модель метода основана на современных концепциях зеркальных нейронов, механизмов невербальной коммуникации, трансовых состояний сознания и нейродинамики эмоционального ответа. В исследовании приняли участие 4390 человек в возрасте от 25 до 58 лет, 88,6% из которых были женщинами и 11,4% мужчинами. После сеансов PF_R были проанализированы субъективные и наблюдаемые реакции участников. Большинство испытуемых испытывали трансовые и тета-доминантные состояния сознания, а также выраженные эмоциональные, моторные и вегетативные реакции. Эффективность метода была подтверждена статистически значимым улучшением психологического состояния по визуальной аналоговой шкале: средний балл увеличился с $4,8 \pm 2,3$ до $8,8 \pm 1,3$. Эти результаты демонстрируют высокую терапевтическую ценность метасообщений как средства невербального воздействия и показывают потенциал метода PF_R в лечении хронической психологической травмы и эмоциональных блоков.

Ключевые слова: метасообщение, зеркальные нейроны, психофункциональная разблокировка, бессознательный конфликт, невербальная коммуникация.

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