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A Comprehensive Model of Psychotherapy in the Rehabilitation of Chronic Myofascial Pain Syndromes

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Комплексна модель психотерапії в реабілітації хронічних міофасціальних больових синдромів

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Introduction

Chronic pain remains one of the most debilitating problems in modern medicine and clinical psychology, significantly reducing the quality of life of millions of people. According to the World Health Organization (WHO), every fifth person in the world suffers from chronic pain. An important milestone in understanding this pathology was the introduction of ICD-11, in which chronic primary pain has been determined as an independent diagnostic category, considered as a separate disease rather than merely a symptom [1]. Among chronic pain conditions, the prevalence of myofascial pain syndromes (MPS) reaches 20–30 %.

Contemporary scientific evidence indicates the leading role of central sensitization and nociplastic pain in the development of MPS, where pain is maintained not so much by peripheral tissue damage as by increased excitability of the central nervous system and dysfunction of antinociceptive systems. This leads to secondary psycho-emotional disorders such as depression, anxiety, kinesiophobia, and pain catastrophizing, which, in turn, are powerful predictors of further chronification [2–4].

Despite the recognition of cognitive behavioral therapy (CBT) and mindfulness practices as the “gold standard” [5–7], modern domestic practice demonstrates a lack of systematic studies on the psychogenic factors of MPS and a shortage of integrative protocols combining somatic rehabilitation with multimodal psychotherapy.

An important context is the reform of the healthcare system in Ukraine. In particular, the Law of Ukraine “On Rehabilitation in Healthcare” [8] establishes a multidisciplinary approach as the basis for providing rehabilitation care. Order of the Ministry of Health No. 1782 [9] officially introduces the positions of clinical psychologist and psychotherapist in healthcare and rehabilitation institutions. At the same time, Order of the Ministry of Health No. 2118 [10] defines

a wide range of psychotherapy methods with proven effectiveness, including gestalt therapy, EMDR, neuro-linguistic programming (NLP), systematic desensitization, and others. These changes create the necessary regulatory preconditions for the full integration of psychological support into the rehabilitation process [11].

However, at present, the national system of psychological support in rehabilitation is characterized by a certain degree of decentralization and a lack of systemic coherence. The process of training specialists requires unification and alignment with international standards of evidence-based medicine [11].

The scientific novelty of this study lies in the development and clinical validation of an original multimodal psychotherapy model which, unlike existing mono-approaches, integrates methods of cognitive behavioral, rational, and body-oriented therapy with elements of neuro-linguistic programming (NLP). The latter is included in the program as an experimental component for the targeted correction of cognitive patterns of “secondary gain” and the reframing of pain experience, thereby ensuring a synergistic effect on both the somatic and psychological components of MPS.

The research hypothesis is based on the assumption that the inclusion of comprehensive multimodal psychotherapy in the standard program of physical rehabilitation for patients with chronic MPS will result in a statistically significant reduction in pain intensity and improvement in neurological status compared to traditional treatment methods alone, due to decreased levels of catastrophizing and the transformation of maladaptive attitudes toward illness.

The purpose of this study is to examine the influence of psychological factors (anxiety, depression, and pain catastrophizing) on the course of myofascial pain syndrome (MPS), as well as to provide a scientific rationale and evaluate the effectiveness of a comprehensive model of psychological support within the structure of treatment and rehabilitation interventions.

Object, materials and research methods

Object of the study: the clinical and psychological status and the dynamics of the pain syndrome in individuals with chronic myofascial pain syndrome (MPS).

Study Organization. The study was conducted at the Spine Center "POSTAVA" (Chernivtsi, Ukraine) during 2023–2024. By design, the study was a prospective, controlled, non-randomized clinical trial with parallel groups. The sample was formed using a consecutive patient recruitment method, followed by group allocation depending on patients' consent to receive additional psychotherapeutic support.

A total of 60 individuals (45 women and 15 men) aged 25 to 50 years (mean age 48.56 ± 0.98 years) were included in the study. The average duration of the disease was 2.49 ± 0.28 years.

Inclusion criteria: verified diagnosis of myofascial pain syndrome (MPS) (localized in the lower back, pelvis, and lower extremities); duration of symptoms > 6 months; confirmation of the condition by neuroimaging methods (CT/MRI); provision of written informed consent.

Exclusion criteria: radicular syndromes, spinal cord compression, oncological diseases, spinal injuries, acute inflammatory processes, severe mental disorders, and pregnancy.

Patients were divided into two groups: the main group ($n = 30$), which received standard rehabilitation combined with the author's psychotherapy model, and the comparison (control) group ($n = 30$), which received only standard therapy. At baseline, the groups showed no statistically significant differences in clinical and demographic characteristics ($p > 0.05$).

Both groups underwent a standard 15-day rehabilitation program, which included manual therapy, therapeutic massage, kinesiotherapy, orthopedic correction, and physiotherapeutic procedures (magnetotherapy and shockwave therapy).

In addition, the main group was offered a comprehensive multimodal psychotherapy program (10 sessions over 5 weeks), which included: a cognitive-behavioral component (rational psychotherapy to enhance compliance and systematic desensitization (fading) to overcome kinesiophobia); a body-oriented component (Jacobson progressive muscle relaxation and mindfulness practices); and an NLP component (the "six-step reframing" technique to correct pain perception patterns and address "secondary gain" from illness). The NLP component was included as an auxiliary tool for the linguistic transformation of subjective pain experience.

Assessment Methods. The effectiveness of the intervention was evaluated at three stages (before, during, and after the intervention). Neurological status was assessed using the following tools: the Faces Pain Scale-Revised (FPS-R) to measure pain intensity; the McGill Pain Questionnaire (MPQ) to evaluate the sensory and affective components of pain; the Muscle Syndrome Severity Index (MSSI); and a 5-point neurological symptom scale.

Psychological status was assessed using the following instruments: the TOBOL questionnaire (to determine

the type of attitude toward illness); the Hospital Anxiety and Depression Scale (HADS); and the Giessen Somatic Complaints Questionnaire (GBB).

Statistical Analysis. Data were processed using Microsoft Excel 2016 with the application of methods of variation statistics. The arithmetic mean (M), standard error of the mean ($\pm m$), and the significance of differences (p) were calculated using Student's t -test for dependent samples (within-group dynamics) and independent samples (between-group comparisons). The level of statistical significance was set at $p < 0.05$.

The study complied with the principles of the Declaration of Helsinki. All participants were anonymized and had the right to withdraw from the study at any stage.

Research results

Dynamics of Neurological and Muscle Tone Status. At the stage of initial examination, patients in both groups demonstrated a similar clinical picture, including impaired biomechanics, limited range of motion, and pronounced muscle hypertonicity. The mean score of neurological symptoms was 2.77 ± 0.16 in the main group and 2.63 ± 0.18 in the comparison group ($p > 0.05$), corresponding to a moderate level of severity.

After completion of the 5-week course, positive dynamics were observed in both groups; however, the extent of improvement differed significantly. In the main group, symptom intensity regressed to a mild level (1.50 ± 0.10 points), whereas in the comparison group the indicator remained higher (1.87 ± 0.18 points; $p < 0.05$ between groups) (Table 1).

The Muscle Syndrome Index (MSI) as the most informative criterion of effectiveness demonstrated the most pronounced changes. At baseline, the groups were homogeneous in this parameter (approximately 11.5 points). After the intervention, the MSI level in the main group decreased almost threefold to 3.85 ± 0.12 points, corresponding to Grade I severity. In the comparison group, the reduction was only 1.5-fold (to 7.53 ± 0.20 points), which still corresponded to Grade II severity (Table 1). The statistically significant between-group difference ($p < 0.05$) confirms the synergistic effect of integrating psychotherapy into the physical rehabilitation protocol.

Pain syndrome assessment. Baseline values on the Visual Analog Scale (FPS-R) in both groups indicated moderate to high pain intensity (6.5 ± 0.11 points). After rehabilitation, the main group demonstrated a statistically significant reduction in pain to a mild level (1.90 ± 0.13 points), whereas in the control group pain remained at a moderate level (3.47 ± 0.13 points; $p < 0.05$).

Analysis using the McGill Pain Questionnaire revealed that multimodal psychotherapy influenced not only pain intensity but also its qualitative perceptual structure. The reduction in affective scale scores in the main group (1.5 ± 0.46) was twice as pronounced as in the control group (0.68 ± 0.32 ; $p < 0.01$), indicating successful correction of the emotional component of pain (fear, tension) through reframing techniques and mindfulness practices (Table 2).

Table 1

Dynamics of Neurological Symptoms and the Muscle Syndrome Index in Patients with Chronic MPS during Comprehensive Rehabilitation ($M \pm m$)

Indicator	Group	Before rehabilitation (points)	After rehabilitation (points)	P
5-point neurological symptom scale	Main group ($n = 30$)	2.77 ± 0.16	1.50 ± 0.10	< 0.05
	Control group ($n = 30$)	2.63 ± 0.18	1.87 ± 0.18	< 0.05
Muscle Syndrome Index (MSI)	Main group ($n = 30$)	11.42 ± 0.46	3.85 ± 0.12	< 0.05
	Control group ($n = 30$)	11.53 ± 0.3	7.53 ± 0.2	< 0.05

Table 2

Dynamics of Pain Indicators According to the McGill Pain Questionnaire in the Main and Control Groups ($M \pm m$)

McGill Pain Questionnaire Scale	Change in the indicator in the main group ($n = 30$)	Change in the indicator in the control group ($n = 30$)	P (between-group)
Sensory scale (1–13)	3.16 ± 1.3	1.6 ± 0.68	< 0.01
Affective scale (14–19)	1.5 ± 0.46	0.68 ± 0.32	< 0.01
Evaluative scale (20)	0.97 ± 0.26	0.56 ± 0.18	< 0.01

Changes in Psychological Status. Assessment of the type of attitude toward illness (TOBOL) demonstrated that in the main group the proportion of patients with a harmonious type increased to 90.0 % compared with 63.3 % in the comparison group ($p < 0.01$). The effectiveness of the transition to a harmonious type in the main group was 5.5 times higher. It should be noted that the least pronounced dynamics were observed in individuals with hypochondriacal and egocentric types, which confirms the persistence of “secondary gain” behavioral patterns (Table 3).

Table 3

Comparative Assessment of Types of Attitudes Toward Illness in the Main and Control Groups after the Rehabilitation Course

Type of attitude toward illness	Main group ($n = 30$)		Control group ($n = 30$)	
	Absolute number	%	Absolute number	%
Harmonious	27	90.0	19	63.3
Anxious	0	0.0	6	20.0
Hypochondriacal	2	6.7	2	6.7
Ergopathic	0	0.0	2	6.7
Egocentric	1	3.3	1	3.3
Sensitive	0	0.0	0	0.0

Data from the Giessen Subjective Complaints Questionnaire (GBB) (Table 4) confirmed a reduction in the overall intensity of somatic complaints in the main group from 40.8 ± 3.2 to 20.1 ± 2.7 points ($p < 0.01$). In the control group, the changes in this indicator were not statistically significant (34.1 vs. 33.8 points; $p > 0.05$).

The level of anxiety on the HADS scale in the main group decreased from a subclinical level (8.67 ± 0.26) to

a normal range (6.1 ± 0.29 ; $p < 0.05$). This indicates that the comprehensive intervention helped patients overcome not only physical discomfort but also associated psycho-emotional disorders that contribute to the maintenance of chronic pain. The results are presented in Table 5.

Thus, the study findings demonstrate the high effectiveness of the proposed comprehensive psychotherapy model as an adjunct to standard physical rehabilitation in patients with chronic myofascial pain syndromes. The most pronounced positive effects were observed in the reduction of pain intensity, muscle-tonic syndrome, anxiety, and somatic complaints, as well as in the formation of a harmonious type of attitude toward illness.

Discussion of research results

The obtained data confirm the hypothesis that the integration of multimodal psychotherapy into the physical rehabilitation process of patients with myofascial pain syndrome (MPS) significantly enhances treatment effectiveness. The key factor of success in the main group was the overcoming of the “pain vicious circle”: through cognitive restructuring of kinesiophobia and reduction of catastrophizing levels, patients became active agents in the rehabilitation process. This is consistent with international literature data regarding the high effectiveness of cognitive-behavioral therapy and mindfulness practices in the treatment of chronic musculoskeletal pain [12; 13].

Importantly, in the main group the muscle syndrome index decreased to a mild level, whereas in the control group it remained at a moderate severity level. This indicates the ability of psychotherapeutic intervention to disrupt the pathological cycle “pain – muscle spasm – pain,” which is a central mechanism sustaining MPS [14]. The mechanism of this effect is associated with reduced sympathetic activation, decreased cortisol-induced hyperalgesia, and improved muscle perfusion as a result of relaxation techniques [15].

Significant changes in the types of attitudes toward illness (TOBOL) in the main group represent an important predictor of treatment compliance: the transition to a harmonious type correlates with higher motivation and adaptive coping strategies [16; 17]. At the same time, the observed resistance to therapy in patients with hypochondriacal and egocentric types indicates the role of chronic pain as a mechanism of unconscious avoidance or secondary social gain, which requires separate therapeutic attention [18].

Table 4

Dynamics of the Giessen Subjective Complaints Questionnaire Indicators in Patients of the Main and Control Groups ($M \pm m$)

Scale GBB	Main group ($n = 30$)		Control group ($n = 30$)	
	Before rehabilitation	After rehabilitation	Before rehabilitation	After rehabilitation
Exhaustion	15.8 $\pm$ 1.2	7.4 $\pm$ 2.0*	12.4 $\pm$ 1.6	10.2 $\pm$ 1.4*
Gastrointestinal complaints	12.5 $\pm$ 1.6	5.9 $\pm$ 1.6*	11.3 $\pm$ 1.4	10.4 $\pm$ 1.9*
Rheumatic factor	6.4 $\pm$ 0.7	2.4 $\pm$ 0.5*	6.5 $\pm$ 0.4	4.2 $\pm$ 0.8*
Cardiac complaints	8.1 $\pm$ 0.7	4.1 $\pm$ 1.0*	8.0 $\pm$ 0.3	6.5 $\pm$ 0.1*
Intensity of complaints (total score)	40.8 $\pm$ 3.2	20.1 $\pm$ 2.7*	34.1 $\pm$ 3.6	33.8 $\pm$ 3.0*

Note: * $p < 0.01$ compared with baseline values within the group; intergroup differences after rehabilitation were statistically significant ($p < 0.05$) for all scales, except for gastrointestinal complaints ($p < 0.05$).

Table 5

Dynamics of Patients' Psycho-Emotional State According to the HADS Scale ($M \pm m$)

HADS	Group	Before rehabilitation (points)	After rehabilitation (points)	P
Anxiety	Main group ($n = 30$)	8.67 $\pm$ 0.26	6.1 $\pm$ 0.29	< 0.05
	Control group ($n = 30$)	8.3 $\pm$ 0.48	7.2 $\pm$ 0.27	< 0.05
Depression	Main group ($n = 30$)	7.1 $\pm$ 0.47	5.6 $\pm$ 0.21	< 0.05
	Control group ($n = 30$)	6.9 $\pm$ 0.32	6.8 $\pm$ 0.39	> 0.05

Analysis using the HADS scale demonstrated a clear advantage of the multimodal model: anxiety levels in the main group decreased by 30 %, and depression by 21 %, whereas in the control group these changes were statistically insignificant (10 % and 1 %, respectively). This confirms that isolated physical rehabilitation has a limited effect on affective disorders that frequently accompany chronic pain [19; 20]. The bidirectional relationship between pain and affect-where increased pain perception is driven by neurotransmitter changes and negative cognitions-necessitates a multidisciplinary approach, which is a standard in the EU, USA, and Canada [7; 21].

Dynamics according to the Giessen Subjective Complaints Questionnaire (GBB) confirmed a reduction in psychosomatic manifestations: the decrease in the "Exhaustion" scale correlates with regression of depressive symptoms [20]; positive changes in "Gastrointestinal" and "Cardiac complaints" indicate a reduction of distress markers; and the reduction in the "Rheumatic factor" reflects the alleviation of pain and spastic components as a result of the synergy between physical and psychotherapeutic interventions.

The proposed integrative model affects the pathogenesis of MPS at both neurobiological and cognitive levels, optimizing nervous system functioning [5; 21; 22]. The use of behavioral therapy and reframing techniques allows for the reduction of kinesiophobia and secondary illness gains, thereby facilitating the restoration of motor activity [4].

The practical significance of the study lies in the possibility of integrating this model into existing outpatient rehabilitation programs. This fully aligns with the current healthcare development strategy in Ukraine, as established by the Law "On Rehabilitation in Healthcare" and the Order of the Ministry of Health No. 1782 regarding the introduction of clinical psychologist and psychotherapist positions in rehabilitation and healthcare institutions.

Prospects for further research

Future research will focus on conducting randomized controlled trials with larger patient samples. A promising direction is the investigation of the long-term stability (remote outcomes at 6–12 months) of the proposed model, as well as the application of mathematical modeling methods to predict rehabilitation success based on the patient's initial psychological profile.

Conclusions

It has been demonstrated that chronic myofascial pain is associated with a high level of affective disorders and maladaptive types of attitudes toward illness, which impairs the effectiveness of standard physical rehabilitation.

The implementation of the developed comprehensive psychotherapy model resulted in a statistically significant ($p < 0.05$) reduction in pain intensity on the VAS scale to 1.90 ± 0.13 points, whereas in the traditional treatment group this indicator remained at 3.47 ± 0.13 points.

The multimodal approach ensured a pronounced correction of muscle tone status: the muscle syndrome index in the main group decreased by 2.96 times, indicating deep relaxation not only at the physical level but also at the psycho-emotional level.

The experimental application of NLP techniques in combination with CBT and mindfulness proved to be an effective tool for the rapid correction of the emotional coloration of pain, as confirmed by positive dynamics in the affective scale of the McGill Pain Questionnaire.

Practical significance: the model can be implemented in rehabilitation centers, neurological departments, and pain management clinics; it complies with current legislation of Ukraine (Law "On Rehabilitation in Healthcare," Order of the Ministry of Health No. 1782).

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Purpose. To scientifically substantiate and evaluate the clinical effectiveness of a comprehensive multimodal psychotherapy model integrated into the physical rehabilitation protocol for patients with chronic myofascial pain syndromes (MPS).

Materials and methods. A prospective, controlled, non-randomized clinical trial was conducted involving 60 patients (45 women, 15 men; mean age 48.56 ± 0.98 years) with verified chronic MPS. Participants were divided into a main group ($n = 30$), which received standard physical rehabilitation (manual therapy, kinesiotherapy, physiotherapy) combined with the author's 5-week multimodal psychotherapy program (CBT, progressive muscle relaxation, mindfulness, and NLP reframing), and a control group ($n = 30$), which received standard rehabilitation alone. Assessment tools included the Faces Pain Scale-Revised (FPS-R), McGill Pain Questionnaire (MPQ), Muscle Syndrome Severity Index (MSSI), TOBOL, HADS, and the Giessen Subjective Complaints Questionnaire (GGB).

Results. The integration of multimodal psychotherapy resulted in a statistically significant ($p < 0.05$) reduction in pain intensity (FPS-R: 1.90 ± 0.13 vs. 3.47 ± 0.13 points in the control group). The MSSI decreased nearly threefold in the main group (to 3.85 ± 0.12), indicating profound muscle relaxation. Significant positive dynamics were observed in the affective component of pain (MPQ), anxiety levels (HADS), and the formation of a harmonious attitude toward illness (90.0 % vs. 63.3 %). The control group showed less pronounced changes in psychological and somatic status.

Conclusions. The proposed multimodal psychotherapy model significantly enhances the effectiveness of physical rehabilitation for chronic MPS by targeting central sensitization mechanisms, reducing kinesiophobia, and correcting maladaptive cognitive patterns. The model demonstrates high practical applicability within multidisciplinary rehabilitation settings.

Key words: pain catastrophizing, kinesiophobia, cognitive reframing, multidisciplinary rehabilitation, nociplastic pain, psycho-emotional correction.

Метою цієї наукової роботи є теоретичне обґрунтування та клінічна апробація комплексної мультимодальної моделі пси-хотерапії, інтегрованої до програми фізичної реабілітації пацієнтів із хронічними міофасціальними больовими синдромами (МФБС). Дослідження спрямоване на вивчення впливу психологічних чинників, зокрема тривожності, депресії, катастрофі-

зації болю та кінезіофобії, на перебіг хронічного больового розладу, а також на оцінку синергічного ефекту від поєднання стандартних реабілітаційних втручань із методами когнітивно-поведінкової, тілесно-орієнтованої терапії та елементами нейроролінгвістичного програмування (НЛП). Окремим завданням стало визначення динаміки змін у типах ставлення до хвороби та рівня соматичних скарг під впливом запропонованої моделі психотерапії.

Матеріали та методи. Дослідження виконано у форматі контрольованого нерандомізованого клінічного випробування на базі Центру хребта POSTAVA (м. Чернівці, Україна) впродовж 2023–2024 років. До вибірки увійшли 60 осіб (45 жінок та 15 чоловіків) віком від 25 до 50 років (середній вік $48,56 \pm 0,98$ року) із верифікованим діагнозом хронічного МФБС (триваліст симптомів понад 6 місяців). Критерії включення передбачали наявність м'язово-тонічного болю в ділянці попереку, таза та нижніх кінцівок, підтвердженого даними нейровізуалізації. Критеріями виключення слугували радикулярні синдроми, онкопатологія, гострі запальні процеси та тяжкі психічні розлади. Учасників розподілено на дві групи: основну ($n = 30$), яка на тлі стандартної 15-денної програми фізичної реабілітації отримувала курс мультимодальної психотерапії (10 сесій протягом 5 тижнів), і контрольну ($n = 30$), де застосовували лише стандартну реабілітацію. Психотерапевтичний модуль включав когнітивно-поведінковий компонент (раціональна терапія, систематична десенсибілізація для подолання кінезіофобії), тілесно-орієнтований блок (прогресивна м'язова релаксація за Джекобсоном, майндфулнес-практики) та експериментальний НЛП-компонент (техніка шестикрокового рефреймінгу для корекції патернів «вторинної вигоди»). Інструментарій оцінювання охоплював: шкалу болю FPS-R, Мак-Гіллівський больовий опитувальник (MPQ), індекс м'язового синдрому (ІМС), опитувальник ТОБОЛ, госпітальну шкалу тривоги та депресії (HADS), Гіссенський опитувальник соматичних скарг (GBV). Статистичну обробку даних проводили з використанням t-критерію Стюдента для залежних та незалежних вибірок (рівень значущості $p < 0,05$).

Результати. Інтеграція мультимодальної психотерапії забезпечила статистично значуще ($p < 0,05$) зниження інтенсивності больового синдрому за шкалою FPS-R в основній групі до рівня легкого болю ($1,90 \pm 0,13$ бала), тоді як у контрольній групі біль залишився на помірному рівні ($3,47 \pm 0,13$ бала). Індекс м'язового синдрому в основній групі зменшився майже втричі – з $11,42 \pm 0,46$ до $3,85 \pm 0,12$ бала, що відповідає легкому ступеню тяжкості, на відміну від контрольної групи, де показник знизився лише до $7,53 \pm 0,20$ бала. Аналіз за Мак-Гіллівським опитувальником засвідчив, що зниження показників за афективною шкалою в основній групі було вдвічі виразнішим ($1,5 \pm 0,46$ проти $0,68 \pm 0,32$; $p < 0,01$), що підтверджує успішну корекцію емоційного вираження больового досвіду. Психологічний статус пацієнтів основної групи характеризувався формуванням гармонійного типу ставлення до хвороби у 90,0 % випадків проти 63,3 % у контрольній групі. Рівень тривоги за шкалою HADS знизився із субклінічного до нормативного діапазону, тоді як у контрольній групі динаміка депресивних проявів виявилася статистично незначущою. Загальна інтенсивність соматичних скарг за опитувальником GBV в основній групі скоротилася з $40,8 \pm 3,2$ до $20,1 \pm 2,7$ бала, що свідчить про редукцію психосоматичних проявів дистресу.

Висновки. Запропонована комплексна модель психотерапії демонструє високу клінічну ефективність у структурі реабілітації пацієнтів із хронічним МФБС. Поєднання когнітивно-поведінкових інтервенцій, майндфулнес-практик та елементів НЛП дає змогу не лише суттєво редукувати інтенсивність болю та м'язово-тонічних проявів, але й здійснювати цілеспрямовану корекцію афективних розладів і дезадаптивних когнітивних патернів. Основними механізмами впливу є зниження рівня катастрофізації, подолання кінезіофобії та трансформація патернів «вторинної вигоди» від хвороби. Отримані результати узгоджуються із сучасними уявленнями про центральну сенситизацію та ноципластичний біль, а також створюють підґрунтя для широкого впровадження моделі в клінічну практику мультидисциплінарних реабілітаційних команд відповідно до чинного законодавства України у сфері охорони здоров'я.

Ключові слова: катастрофізація болю, кінезіофобія, когнітивний рефреймінг, мультидисциплінарна реабілітація, ноципластичний біль, психоемоційна корекція.

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