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PSYCHO-EMOTIONAL STATE OF PATIENTS: ASSESSMENT OF ANXIETY DURING THE EARLY STAGE OF POST-TRAUMATIC PHYSICAL THERAPY AND OCCUPATIONAL THERAPY

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Abstract. The relevance of this study is driven by the growing number of patients with upper-limb amputations resulting from military actions in Ukraine and the need to improve early post-traumatic rehabilitation. Arm amputation, particularly at the shoulder level, leads to pronounced functional impairments, a sharp decline in self-care abilities, and significant psycho-emotional stress. In the acute postoperative period (1–21 days), patients typically experience high levels of anxiety, phantom pain, reduced motor activity, and dependence in everyday activities, which necessitates a multidisciplinary intervention combining physical therapy (PT), occupational therapy (OT), and psychological support.

Purpose of the research– to assess the effectiveness of a comprehensive early PT and OT program in patients with upper-limb amputation by determining its impact on pain intensity, muscle strength, range of motion, anxiety level, and functional independence.

Methods. Twelve male service members aged 26–52 years after shoulder-level amputation were examined. The assessment tools included the Hamilton Anxiety Rating Scale (HAM-A), Visual Analogue Scale (VAS) for pain, manual muscle testing, shoulder goniometry, and the Barthel Index. Evaluations were conducted on days 1–3 and days 20–21. The rehabilitation program included edema control and stump shaping, contracture prevention, muscle-strengthening exercises, sensory desensitization, self-care training, and emotional support.

Results. At baseline, most patients reported very severe pain; by day 21, pain had decreased to mild or minimal levels. All MMT indicators and ranges of motion improved significantly ($p<0.05$). Anxiety levels on the HAM-A decreased from 25.42±2.77 points (clinically significant anxiety) to 13.17±2.12 points (mild level) ($p<0.001$). Functional independence according to the Barthel Index increased from 45±2.04 to 75±2.04 points, indicating a transition from severe to moderate dependence ($p<0.001$). These findings demonstrate the positive impact of an early comprehensive program on physical and psycho-emotional status, particularly the reduction in anxiety as an important barrier to rehabilitation.

Conclusions. An early individualized PT and OT program is effective for patients in the acute period after upper-limb amputation. It contributes to reducing pain and anxiety, improves motor function, muscle strength, and independence. Integration of psycho-emotional support is a critically important component of successful rehabilitation and preparation for prosthetic fitting. The obtained data may be used to develop standardized protocols for early domestic rehabilitation.

At the same time, our data demonstrate that early interventions can prevent the development of profound psychological distress, which is characteristic of the later stage of rehabilitation in other studies.

An individualized early program of physical therapy and occupational therapy can be considered as a basic component of postoperative management of patients with upper limb amputation. Its application provides a comprehensive impact on the physical and psychoemotional aspects of recovery and creates favorable conditions for the subsequent stage of prosthetics.

Keywords: upper-limb amputation; physical therapy; occupational therapy; acute phase; anxiety; manual muscle testing; goniometry; Barthel Index; psycho-emotional state; rehabilitation.

Introduction. As a result of military operations in Ukraine, the issue of rehabilitation of amputees has become unprecedentedly urgent. Traumatic amputation of the upper limb is one of the most maladaptive injuries, as it disrupts the fundamental function of self-care, work and social activity. Special attention should be paid to the acute postoperative period (the first 2-4 weeks), since it is at this time that the foundations of successful prosthetics and psychological recovery are laid [4, 6].

Amputation causes not only physical deficits, but also deep psychological trauma. Patients in the acute post-traumatic period often experience shock, grief, denial, as well as high levels of anxiety, depression and phantom pain. This psycho-emotional distress can become a serious ob-

stacle to active participation in the rehabilitation program, slowing down healing and stump formation [1, 9]. Therefore, an effective rehabilitation program using physical therapy (PT) and occupational therapy (OT) should integrate functional interventions with components that directly affect the psycho-emotional state of the victim.

Modern international rehabilitation protocols (in particular, the recommendations of the WHO and the International Committee of the Red Cross) emphasize a multidisciplinary approach, where PT and ET are integral parts [5, 10]. Studies have shown that intensive early physical activity and training the patient in self-care of the stump reduces feelings of helplessness and improves psychological indicators [14]. Physical methods, such as stump desensitization, proper bandaging and the use of mirror therapy, effectively reduce phantom pain, which is directly correlated with a decrease in anxiety levels [7, 9]. However, most domestic studies focus mainly on physical parameters (stump formation, muscle strength recovery), while the quantitative assessment of the impact of PT and ET on the level of anxiety in the acute post-traumatic rehabilitation period remains insufficiently studied. The issue of using standardized tools to assess the impact of a patient-centered, structured PT and ET program on the level of anxiety in patients after upper limb amputation during the early stage of post-traumatic rehabilitation remains unresolved. This creates a scientific and practical gap that needs to be filled in order to develop full-fledged, patient-centered PT and ET programs that meet modern military realities in Ukraine.

Research justification. The relevance of studying the issue of anxiety in patients after upper limb amputation during post-traumatic rehabilitation in the acute period is associated not only with social challenges, but also with the functional significance of the injury, given the critical importance of the upper limbs in life [2, 11, 13].

Unlike the lower limb, amputation of the upper limb (especially at the shoulder level) affects the level of self-care, working capacity and social integration, causing a high degree of patient dependence. The success of subsequent prosthetics and functional recovery directly depends on the quality of rehabilitation in the acute period [11]. One of the constituent aspects of the rehabilitation process should be the psycho-emotional component [4]. Existing recommendations for rehabilitation in Ukraine in the acute period are mainly focused on surgical stump care and basic prevention of contractures. However, numerous studies confirm the high prevalence of clinically significant anxiety, phantom pain, and posttraumatic stress disorder in patients after amputation. Underestimation and non-integrated management of these psycho-emotional states act as a significant barrier to physical recovery and complicate patient compliance.

PT and ET are central elements of post-traumatic rehabilitation, as they have a direct and indirect effect on the psycho-emotional state of patients.

Direct effect: reduction of muscle tension - relaxation exercises and breathing techniques integrated into the rehabilitation program directly reduce physiological manifestations of anxiety; improvement of sleep - physical activity, guided by PT and ET, contributes to the normalization of circadian rhythms and improves sleep quality, which is critical for reducing anxiety; endorphin release - physical activity stimulates the release of endorphins, which have a natural antidepressant and anti-anxiety effect.

Indirect impact: regaining control - successful performance of physical exercises and purposeful functional movements, a sense of progress in restoring functions give the patient a sense of control over their own body and life, which is a powerful counterfactor for anxiety; social interaction - individual work with a therapist, group classes provide social support and destroy the feeling of isolation; preparation for prosthetics - successful formation of a stump and achievement of functional goals reduce anxiety about future prosthetics [10, 11].

Purpose of the research. To analyze the effectiveness of the early post-traumatic program of physical therapy and occupational therapy, developed for patients in the acute period (1–21 days) after upper limb amputation, through a comprehensive analysis of the impact of the intervention on key functional, pain and psycho-emotional indicators.

Materials and organization of the research. The study was conducted on the basis of the Medical Faculty of the Lesya Ukrainka Volyn National University and the Volyn Regional Clinical Hospital. An examination was conducted of 12 male military personnel who suffered upper limb injuries, as a result of which surgical interventions were performed, namely amputation of the upper limb at the shoulder level. The age of the patients was 26-52 years, the average age was 39.4±3.9 years. Among them: 58% (7 patients) suffered amputation of the left upper limb, and 42% (5 patients) - the right.

All participants were informed in advance about the purpose, methods and organization of the study, and also provided voluntary consent to participate. The study was approved by a multidisciplinary team of specialists, conducted in accordance with international ethical standards - in particular, the Declaration of Helsinki of the World Medical Association and Ukrainian legislation on ethical norms in medical research involving human subjects.

Assessment methods. The Hamilton Anxiety Scale (HAM-A) is a convenient, objective standardized questionnaire for identifying and controlling the level of anxiety, allows for a quantitative assessment of the level of anxiety, covers mental and somatic symptoms of anxiety and helps to improve the quality of postoperative care and the effectiveness of rehabilitation [2, 4]. Includes 14 items, each of which is rated on a 5-point scale (0–4 points). Anxiety levels on the scale: 0–17 points - absent or insignificant anxiety (mild degree); 18–24 points - moderate anxiety; 25–30 points – severe anxiety; 30 points and more – pronounced or clinical anxiety, severe anxiety. The level of anxiety was assessed on the 3rd and 20th day of work with patients.

Pain intensity assessment: determined by the Visual Analogue Scale (VAS) - Visual Analogue Scale, VAS [5] - a scale from 0 to 10 points. Pain assessment: 0-1 cm –

extremely weak pain; from 2 to 3 cm – weak; from 4 to 6 cm – moderate; from 7 to 8 cm – very strong, pronounced; 9-10 points – unbearable pain.

- The functional status of the operated limb was assessed using Manual Muscle Testing (MMT) in the following directions of movement: flexion, extension, abduction and adduction, using a five-point rating scale, where 0 - complete absence of muscle activity, 5 - normal muscle strength. The dynamics of the stump movement was assessed by the method - goniometry of the shoulder joint of the stump in the following directions of movement. MMT and goniometry were performed on the first day after surgery; on days 3-4 and 21 after rehabilitation interventions.

- The Barthel Index (BI) [7] was used to quantitatively assess the patient's level of independence in performing ten basic activities of daily living (ADL), such as eating, dressing, self-care, moving, using the toilet and controlling bowel movements. The total score ranges from 0 to 100. A higher score corresponds to a higher level of independence. Generally accepted interpretation of scores: 0–20 points - complete dependence; 21–60 points - severe dependence; 61–90 points - moderate dependence; 91–99 points - mild dependence; 100 points - complete independence.

The Barthel Index score allows objectively record how the restoration of motor functions and training in self-care skills (the occupational therapy component of post-traumatic rehabilitation) affected the level of independence of patients. The level of functional independence was determined on the 3rd and 20th day;

Statistical data processing. The distribution of variation series was checked for normality using the Shapiro-Wilk W criterion. In cases where the distribution does not differ from normal at the significance level p=>0.1, the mean value (X) and error (*m*) were calculated. For a variation series whose distribution differs from normal, the median (Me), quartile I (Q1) and quartile III (Q3) were calculated. Data were compared for two related samples using the Wilcoxon T-test and by the multiple comparison method using the Dunn test. The difference was considered statistically significant at $p < 0.05$.

Results of the research. To assess the effectiveness of post-traumatic rehabilitation using FT and ET in the acute rehabilitation period, a study was conducted among 12 patients who had an upper limb amputation at the shoulder level.

After analyzing the patients' medical histories, it was found that in all of them the time interval from the moment of injury to the moment of surgical intervention was different: in 3/12 (25%) - more than six months; 4/12 (33.3%) - approximately two months; 5/12 (41.7%) - 7-10 days before the moment of surgery.

In order to form a more complete picture of the psycho-emotional state of the patients, an additional survey of relatives of servicemen was conducted. The information obtained allowed us to detail the psychological portrait of the patient, as well as to establish his current needs in conditions associated with being in a combat zone and experiencing stressful effects.

When compiling the FT and ET program, the patient's personal factors, severe postoperative condition, and the presence of post-traumatic stress disorder were taken into account. The method of conducting classes for these patients was individual. The average duration of the rehabilitation program was 21 days and was based on the principles of early onset, intensity, and integration of psychological aspects.

Daily classes lasted 60 min. and included:

1. Control of edema and stump formation: regular, up to 3 times a day, elastic bandaging using the spiciform method to create a cone-shaped shape; limb positioning to prevent edema and contractures (avoiding prolonged adduction and internal rotation of the shoulder);

2. Prevention of contractures and restoration of range of motion: passive and active movements in the remaining joints (shoulder, elbow - if available), daily goniometry to control the amplitude.

3. Functional strengthening: isometric and isotonic exercises to strengthen the muscles of the shoulder girdle and trunk; training of the healthy arm for compensatory functions.

4. Sensory and psychological work: desensitization of the stump (massage, tapping, use of different textures) to reduce hypersensitivity and phantom pain; training in stump care and preparation for prosthetics [9].

The research focused on the characteristics of the pain syndrome, which was assessed using the VAS. In the first days after the operation, most patients experienced unbearable, severe pain. All patients were prescribed appropriate pain medication by the attending physician. The nature of the pain changed every day: on day 7, no patient had unbearable pain, very severe and moderate pain prevailed. On day 14, moderate pain was experienced by 91.7% of the injured. By the 21st day of the rehabilitation program, 58.3% of patients periodically experienced mild pain, subject to the action of an external stimulus, and 41.7% noted minor pain sensations. The dynamics of pain intensity is shown in Fig. 1.

MMT was performed to assess the strength of the muscles of the shoulder joint of the affected/operated arm. According to the data obtained, the flexion indices on the first day: Me-20; Q1- 20; Q3 – 20; on the third day of rehabilitation: Me-30; Q1- 30; Q3 – 40; on the 21st day: Me-4.50; Q1- 40; Q3 – 50. Extension indices: on the first day: Me-2.50; Q1- 30; Q3 – 30; on the third day of rehabilitation: Me-3.50; Q1- 30; Q3 – 40; on the 21st day: Me-4.50; Q1- 40; Q3 – 50. Abduction index: on the first day: Me-2.50; Q1- 20; Q3 – 30; on the third day of rehabilitation: Me-30; Q1- 30; Q3 – 40; on the 21st day: Me-40; Q1- 40; Q3 – 50. Adduction indicators: on the first day: Me-30; Q1- 20; Q3 – 30; on the third day of rehabilitation: 40; Q1- 30; Q3 – 40; on the 21st day: Me-40; Q1- 40; Q3 – 40. According to all the studied indicators, the difference is statistically significant at the $p<0.05$ significance level.

To determine the dynamics of the amplitude of movements in the shoulder joint of the operated limb, the goniometry method was used for the main movements.

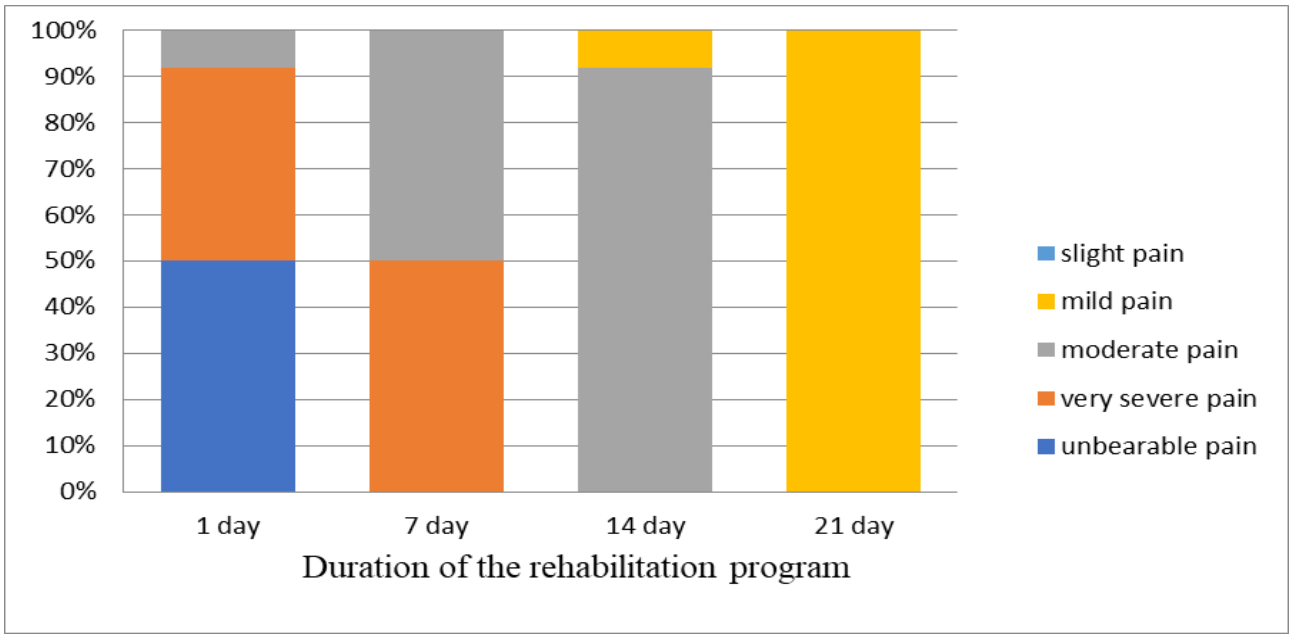

Fig. 1. Dynamics of pain intensity, VAS,%

Thus, according to the data obtained, the flexion indicators on the first day: Me-88.50; Q1- 84.50; Q3 – 91.50; on the third day of rehabilitation: Me-100.50; Q1- 95.50; Q3 – 104.50; on the 21st day: Me-134.50; Q1- 131.00; Q3 – 139.00. Extension indicators: on the first day: Me-33.50; Q1- 31.50; Q3 – 35.00; on the third day of rehabilitation: Me-40.00; Q1- 38.50; Q3 – 41.50; on the 21st day: Me-47.00; Q1- 45.50; Q3 – 48.50. Abduction indicator: on the first day: Me-97.00; Q1- 93.50; Q3 – 101.50; on the third day of rehabilitation: Me-111.50; Q1- 108.50; Q3 – 117.50; on the 21st day: Me-143.50; Q1- 138.50; Q3 – 151.50. Adduction indicators: on the first day: Me-13.00; Q1- 12.00; Q3 – 14.00; on the third day of rehabilitation: Me-18.00; Q1- 17.00; Q3 – 19.00; on the 21st day: Me-23.00; Q1- 22.00; Q3 – 24.00. All patients showed positive dynamics of varying degrees, improvement of motor function of the shoulder joint after conducting an individualized program of FT and ET. For all the studied indicators, the difference is statistically significant at the significance level $p<0.05$. Table 1 presents the results of individual percentage changes in the amplitude of movements in the shoulder joint of the operated limb. The obtained data are taken into account when adjusting the individual program of FT and ET.

Table 1

Individual dynamics of the motor function of the shoulder joint of the operated injured limb

№ patient	Indicator dynamics,%			
	bending	extension	withdrawal	bringing
1	52.94%	28.57%	47.37%	83.33%
2	50.0%	53.33%	50.0%	71.43%
3	60.0%	41.18%	50.0%	76.92%
4	52.17%	46.88%	47.62%	66.67%
5	51.14%	36.11%	47.96%	90.91%
6	52.63%	45.16%	50.00%	76.92%
7	59.04%	51.52%	47.92%	71.43%
8	58.62%	46.67%	49.02%	83.33%
9	49.45%	31.43%	47.87%	66.67%
10	53.57%	46.88%	49.50%	90.91%
11	50.56%	41.18%	47.31%	76.92%
12	52.69%	36.11%	48.54%	71.43%

For an objective assessment of the psycho-emotional state of patients, the Hamilton Anxiety Scale was used. Anxiety assessment is an important indicator that allows the therapist to adapt the approach in time: change the load, involve a psychologist/psychotherapist, and establish communication with the family.

On the 3rd day, the average anxiety score among patients was 25.42 ± 2.77 points, which corresponds to clinically pronounced anxiety. Severe anxiety was recorded in 7 patients (58.3%), moderate anxiety in 41.7% (5 patients). This indicates the need to include elements of psychological support in the post-traumatic rehabilitation program in

order to improve the emotional state of patients, increase their motivation for the rehabilitation process, and prevent psycho-emotional disorders.

On the 20th day, a significant decrease in anxiety was observed to 13.17 ± 2.12 points. All study participants had a mild degree of anxiety. Comparison of two related samples showed a statistically significant difference at the significance level $p<0.001$. The dynamics of individual results of changes in psycho-emotional state are shown in Fig. 2.

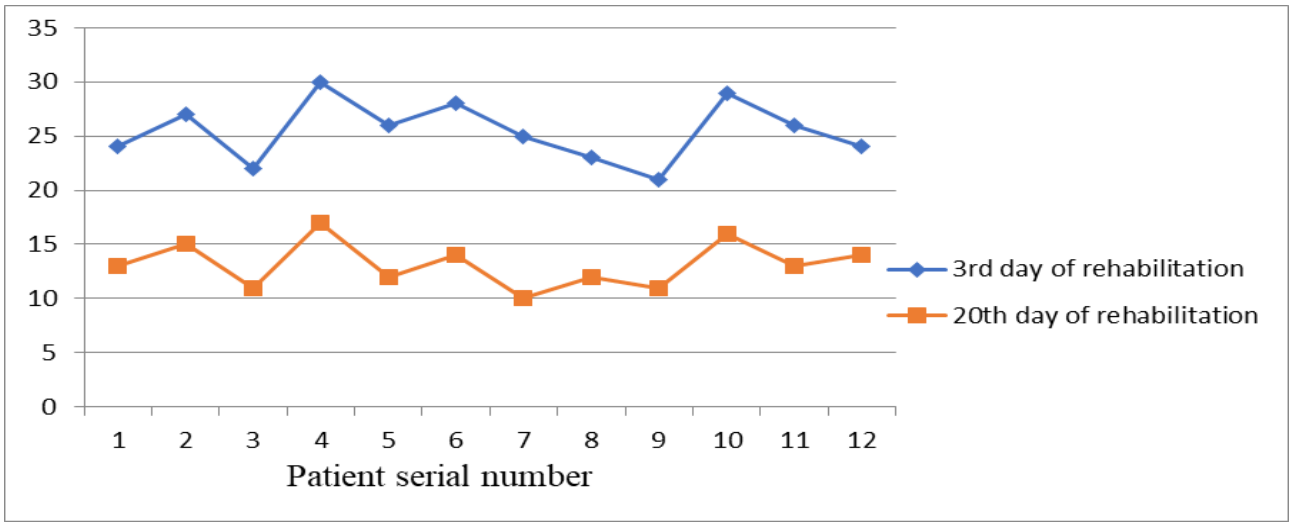

Fig. 2. Results according to the Hamilton scale, points.

Functional independence, which was examined according to the Barthel scale at the beginning of the study, had an average score of 45.0±2.04 points, which indicated a pronounced dependence of patients in most activities of daily living. This is explained by the consequences of a recent operation, pain syndrome and lack of adaptive skills. After a 21-day course of FT and ET, the average score increased to 75.0±2.04 points, which transferred patients to the category of moderate dependence. This increase is statistically highly significant ($p<0.001$).

Clinically, this means that patients have successfully mastered basic self-care skills, which is a direct result of the integration of early ET into the post-traumatic rehabilitation program.

Increasing independence not only improves physical skills, but also has a positive effect on the psycho-emotional state, reducing anxiety associated with a sense of helplessness and dependence on medical personnel/relatives.

Discussion of the results. The obtained results confirm the hypothesis that the comprehensive program of FT and ET has a significant positive effect on the psycho-emotional state of patients in the acute period after amputation. The decrease in anxiety levels, which was statistically significant, is a direct consequence of several factors integrated into the FT and ET program:

- active pain management: the rehabilitation program provided significantly more effective pain control, eliminating one of the main causes of psychological distress;

- restoration of control - early training of the patient in stump care, positioning and preparation for prosthetics transforms the serviceman from a passive recipient of care into an active participant in the process, which restores his sense of control over his own body and future [14];

- physical progress - improved muscle strength and stump formation create a reliable physical basis for prosthetics, eliminating uncertainty, which is a source of anxiety.

In our study of an integrated early PT and ET program in patients with upper limb amputation, a significant decrease in the level of anxiety on the Hamilton scale was observed - from clinically pronounced to mild after 21 days. The obtained results are consistent with the data of other authors who emphasize the importance of psycho-emotional support in post-traumatic rehabilitation. For example, the study by Al Ghailani et al. (2025) showed that professional psychological support significantly increases the resilience of patients after amputations and contributes to better adaptation [1].

However, some studies show a different picture. In the work of Jo et al. (2021) it was found that in the first 6 months after traumatic amputation, approximately 60% of patients suffered from anxiety. This is a significantly higher figure than ours on the 20th day [10]. A possible reason for this difference is the different chronological context: our intervention started very early (1–21 days), which could have prevented the increase in psychological distress, while in the Jo study anxiety levels were measured at a more distant period. In addition, the level of support, social and psychological resources may have differed.

Our results also correlate with systematic reviews: for example, Rudenko and Assonov (2023) note that PTSD, anxiety, depression often occur after amputation - and these conditions are underestimated in clinical practice [13].

Furthermore, a study by Güvenç et al. (2025), dedicated to patients after amputation of a finger, demonstrated that not only anxiety, but also sleep disturbances significantly worsen the quality of life [8]. This emphasizes that

the psycho-emotional state after amputation is multidimensional and is not reduced only to the level of anxiety - it is extremely important to also consider other factors (sleep, depression, adaptation to the prosthesis).

Another important aspect is the role of social support. Al Ghailani et al. (2025) [1] emphasize that social and psychological resources (self-esteem, support, acceptance of the prosthesis) are strongly correlated with psychological resilience. In our study, although we did not measure psychological resilience separately, the improvement in independence (according to the Barthel index) and the decrease in anxiety may partly reflect the increase in internal resources and acceptance of the new reality.

Also, there are methodological differences that may explain the discrepancies with the results of other researchers. For example, many studies used cohorts of patients with different types of upper and lower limb amputations, while our study was exclusively devoted to shoulder amputations of military personnel - patients with unique psychological challenges (combat trauma, stress, social maladjustment).

Conclusion. The results of the research confirm the effectiveness of a comprehensive program of early PT and ET in patients in the acute postoperative period after upper limb amputation. Already during the first three weeks of rehabilitation, a significant decrease in pain intensity, improvement in muscle strength and range of motion in the shoulder joint, an increase in the level of functional independence, and a pronounced decrease in anxiety were noted. The obtained results are consistent with the data of modern scientific studies that emphasize the importance of integrated multidisciplinary approaches to early post-traumatic rehabilitation.

The decrease in the level of anxiety recorded within the program indicates a significant impact of psycho-emotional support and training in self-care skills on the ability of patients to adapt to new functioning conditions. At the same time, the data we obtained demonstrate that early interventions can prevent the development of profound psychological distress, which is characteristic of the later stage of rehabilitation in other studies.

Thus, an individualized early PT and ET program can be considered as a basic component of postoperative management of patients with upper limb amputation. Its application provides a comprehensive impact on the physical and psychoemotional aspects of recovery and creates favorable conditions for the subsequent stage of prosthetics.

Prospects for further research. Conduct a study with a duration of more than 21 days, for example, for 3–6 months, to understand the stability of the effect of early rehabilitation on the level of anxiety. Study the impact of social and family support, integrating surveys of relatives, social adaptation and support resources to optimize multidisciplinary approaches.

Conflict of interest. The authors declare that they have no conflict of interest regarding this study, including financial, personal, authorship or other nature, which could affect the study and its results presented in this article

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All authors have read and agreed with the published version of the manuscript.

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ПСИХОЕМОЦІЙНИЙ СТАН ПАЦІЄНТІВ: ОЦІНКА ТРИВОГИ ПІД ЧАС РАННЬОГО ЕТАПУ ПОСТТРАВМАТИЧНОЇ ФІЗИЧНОЇ ТЕРАПІЇ ТА ЕРГОТЕРАПІЇ

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Резюме. Актуальність дослідження зумовлена зростанням кількості пацієнтів з ампутаціями верхніх кінцівок унаслідок воєнних дій в Україні та необхідністю удосконалення ранньої посттравматичної реабілітації. Ампутація руки, особливо на рівні плеча, призводить до виражених порушень функціонування, різкого зниження рівня самообслуговування та значного психоемоційного стресу. У гострому післяопераційному періоді (1–21 день) для пацієнтів характерні високий рівень тривоги, фантомний біль, зниження рухової активності й залежність у повсякденних діях, що потребує мультидисциплінарного втручання із поєднанням фізичної терапії (ФТ), ерготерапії (ЕТ) та психологічної підтримки.

Мета дослідження – оцінити ефективність комплексної ранньої програми ФТ та ЕТ у пацієнтів із ампутацією верхньої кінцівки, визначивши її вплив на інтенсивність болю, м'язову силу, амплітуду рухів, рівень тривоги та функціональну незалежність.

Методи. Обстежено 12 військовослужбовців чоловічої статі віком 26–52 роки після ампутації на рівні плеча. Використано: шкалу тривоги Гамільтона (HAM-A), ВАШ для оцінки болю, мануальне м'язове тестування та гоніометрію плечового суглоба, індекс Бартел. Оцінювання проводили на 1–3-й та 20–21-й дні. Реабілітаційна програма включала контроль набряку та формування кукси, профілактику контрактур, вправи для зміцнення м'язів, сенсорну десенсибілізацію, навчання самообслуговуванню та емоційну підтримку.

Результати. На початку дослідження інтенсивність болю у більшості пацієнтів була дуже високою; до 21 дня біль зменшився до слабкого або мінімального. Усі показники ММТ та амплітуди рухів достовірно покращилися ($p<0,05$). Рівень тривоги за HAM-A знизився з 25,42±2,77 балів (клінічно виражена тривога) до 13,17±2,12 балів (легкий ступінь) ($p<0,001$). Функціональна незалежність за індексом Бартел зросла з 45±2,04 до 75±2,04 бали, що свідчить про перехід від вираженої до помірної залежності ($p<0,001$). Отримані результати демонструють позитивний вплив ранньої комплексної програми на фізичний та психоемоційний стан, зокрема зменшення тривоги як важливого бар'єра реабілітації.

Висновки. Рання індивідуалізована програма ФТ та ЕТ є ефективною для пацієнтів у гострому періоді після ампутації верхньої кінцівки. Вона сприяє зменшенню болю та тривожності, покращує рухову функцію, силу м'язів і рівень незалежності. Інтеграція психоемоційної підтримки є критично важливою складовою успішної

реабілітації та підготовки пацієнтів до протезування. Отримані дані можуть бути використані для формування стандартизованих протоколів ранньої вітчизняної реабілітації.

Водночас отримані нами дані демонструють, що ранні втручання можуть попереджати розвиток глибокого психологічного дистресу, який характерний для пізнішого етапу реабілітації в інших дослідженнях.

Індивідуалізована рання програма фізичної терапії та ерготерапії може розглядатися як базовий компонент післяопераційного менеджменту пацієнтів з ампутацією верхньої кінцівки. Її застосування забезпечує комплексний вплив на фізичні та психоемоційні аспекти відновлення та створює сприятливі умови для подальшого етапу протезування.

Ключові слова: ампутація верхньої кінцівки; фізична терапія; ерготерапія; гострий період; тривога; мануальне м'язове тестування; гоніометрія; індекс Бартел; психоемоційний стан; реабілітація.

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