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THE IMPACT OF MOTIVATIONAL AND PERSONALITY FACTORS ON THE REHABILITATION PROCESS OF PATIENTS WITH MUSCULOSKELETAL INJURIES

Abstract. *The aim of the study.* This study examines the influence of motivational and personality factors on the effectiveness of rehabilitation in patients with musculoskeletal injuries. The primary objective is to investigate the interrelations between intrinsic motivation, coping strategies, personality traits, self-efficacy, and the dynamics of functional recovery throughout the medical and psychological rehabilitation process.

Methodology. A multimethod psychodiagnostic approach was employed, incorporating the University of Rhode Island Change Assessment Scale (URICA), the Coping Inventory for Stressful Situations (CISS), the Big Five personality traits assessment, the General Self-Efficacy Scale, and the projective technique “Ideals and Values.” The empirical component of the study was conducted at Zaporizhzhia Regional Clinical Hospital, involving a sample of 47 patients with musculoskeletal injuries. Data analysis included descriptive statistics, correlation analysis, and comparative statistics.

Scientific novelty. The study offers a novel integrative perspective on the role of psychological and value-based factors in rehabilitation. For the first time, specific associations were identified between motivation levels, coping strategies, self-efficacy, and value orientations. Notably, positive reappraisal emerged as a coping strategy positively correlated with higher levels of intrinsic motivation, while independence was identified as the prevailing value orientation. Gender differences were also observed: men were more likely to employ distancing strategies, whereas women tended to utilize problem-focused coping such as decision planning.

Conclusions. The results demonstrate a substantial impact of motivational and personality factors on rehabilitation outcomes. A significant proportion of participants exhibited low or unstable motivation toward recovery, indicating the need for targeted psychological interventions. The findings support the development of personalized, gender-sensitive rehabilitation programs tailored to the psychological, personality, and value profiles of individual patients.

Key words: motivation, rehabilitation, musculoskeletal injuries, coping strategies, personality traits, self-efficacy, value orientations, gender differences, psychological support, individualized approach.

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ВПЛИВ МОТИВАЦІЙНИХ ТА ОСОБИСТІСНИХ ФАКТОРІВ НА ПРОЦЕС РЕАБІЛІТАЦІЇ ПАЦІЄНТІВ З ТРАВМАМИ ОПОРНО-РУХОВОЇ СИСТЕМИ

Анотація. Мета роботи. Дослідження присвячене аналізу впливу мотиваційних та особистісних чинників на ефективність реабілітації пацієнтів з травмами опорно-рухового апарату. Основною метою є виявлення взаємозв'язків між рівнем внутрішньої мотивації, копінг-стратегіями, рисами особистості, рівнем самоефективності та динамікою відновлення функціональних можливостей у процесі медичної та психологічної реабілітації.

Методологія. У дослідженні використано комплекс психодіагностичних методик: шкалу оцінки змін поведінки URICA, Coping Inventory for Stressful Situations (CISS), методику «Велика п'ятірка», шкалу загальної самоефективності та проективну методику «Ідеали та цінності». Емпіричне дослідження проведено на базі Запорізької обласної клінічної лікарні, вибірка становила 47 пацієнтів із травмами опорно-рухового апарату. Для аналізу отриманих даних застосовано описову, кореляційну та порівняльну статистику.

Наукова новизна. Наукова новизна полягає в інтегративному підході до вивчення психологічних і ціннісних чинників у контексті реабілітації. Уперше встановлено специфічні взаємозв'язки між рівнем мотивації, копінг-стратегіями, самоефективністю та ціннісними орієнтаціями. Зокрема, позитивна переоцінка як копінг-стратегія пов'язана з вищим рівнем мотивації, а домінуючою цінністю виявлено незалежність. Також виявлено гендерні відмінності у виборі копінг-стратегій: чоловіки частіше використовують дистанціювання, тоді як жінки – планування рішень.

Висновки. Результати дослідження засвідчують значний вплив мотиваційних та особистісних чинників на ефективність реабілітаційного процесу. Переважна більшість учасників має нестійку або знижену мотивацію до одужання, що потребує цілеспрямованої психокорекційної підтримки. Отримані результати підтверджують необхідність створення індивідуалізованих, гендерно-чутливих програм реабілітації з урахуванням психологічного, особистісного й аксіологічного профілю кожного пацієнта.

Ключові слова: мотивація, реабілітація, травми опорно-рухового апарату, копінг-стратегії, риси особистості, самоефективність, ціннісні орієнтації, гендерні відмінності, психологічна підтримка, індивідуалізований підхід.

Problem statement. The rehabilitation process for patients with musculoskeletal injuries is a complex and long-term process that is largely dependent on their motivational state and personal characteristics. The effectiveness of therapeutic measures is lowered by the absence or presence of destructive attitudes, which determines the level of involvement, responsibility, and activity during treatment. Important personal factors are the level of anxiety, stress resistance and the ability to cooperate with medical personnel. Individuals with high stress resistance exhibit better adaptability and activity in the rehabilitation process, but patients with high anxiety require additional psychological support. The relevance of studying psychological aspects of rehabilitation is due to their insufficient consideration in standard programs that are focused mainly on physical recovery parameters. By incorporating motivational and psychological factors into rehabilitation strategies, the approach can be personalized, medical recommendations are more adhered to, and the recovery process can be accelerated. This study is of particular importance in the context of modern society, which is experiencing an increase in injuries related to road traffic accidents, sports activities, or occupational risks. The quality of rehabilitation care

can be improved and the social and economic consequences of prolonged recovery from musculoskeletal injuries can be reduced by studying the motivational and personal aspects of patients (Barkin, Sosedka, 2021, p. 1–9). Musculoskeletal injuries are one of the main causes of disability and temporary disability in Ukraine. According to the Ministry of Health of Ukraine, musculoskeletal injuries account for about 10–15% of all hospitalizations annually (Ministry of Health of Ukraine, 2020). The majority of injuries are caused by road traffic accidents, falls, sports injuries, and occupational hazards. According to estimates, every tenth Ukrainian has experienced an injury that necessitates medical care. According to the Institute of Traumatology and Orthopedics of the National Academy of Medical Sciences of Ukraine, after serious injuries, 30–40% of patients require long-term rehabilitation, including physical exercises, psychosocial support, and correction of motivational aspects for recovery (Institute of Traumatology and Orthopedics, National Academy of Medical Sciences of Ukraine, 2020).

Internationally, statistics also indicate a high prevalence of musculoskeletal injuries. According to the World Health Organization (WHO), injuries are one of the leading causes of death and disability worldwide, especially among young people and people of working age (WHO, 2018). Every year, about 690 million cases of injuries requiring medical intervention are registered in the world, and these are only officially registered cases. In Europe and the USA, musculoskeletal injuries account for approximately 10–15% of the total number of all injuries. For example, in the USA, about 1.5 million people suffer musculoskeletal injuries every year, and most of them require rehabilitation services. In addition, the effectiveness of rehabilitation is influenced not only by physical factors, but also by psychological factors. The outcome of rehabilitation is significantly influenced by motivational aspects, as evidenced by research. In Europe and the United States, psychological research has indicated that 40–50% of patients with musculoskeletal injuries experience depressive and anxiety symptoms, which can have a negative impact on their recovery process. Patients with low motivation tend to recover more slowly and have a higher chance of relapsing, which necessitates more psychological interventions to enhance rehabilitation outcomes (WHO, 2018). These statistics emphasize the importance of a comprehensive approach to the rehabilitation of patients with musculoskeletal injuries, which includes not only physical therapy, but also motivational and psychological support to ensure maximum effect from the rehabilitation process.

Research analysis. In Ukraine, research into the problems of rehabilitation of patients with musculoskeletal injuries is carried out by specialists in the field of traumatology, orthopedics and medical psychology. A significant contribution to the development of this topic was made by Professor Mykola Kucher (Institute of Traumatology and Orthopedics of the National Academy of Medical Sciences of Ukraine), who is engaged in the development of innovative surgical and rehabilitation methods, in particular using minimally invasive technologies and modern physiotherapy (Kucher, 2020, p. 45–50). The Department of Traumatology and Orthopedics of Kyiv Medical University conducts research on postoperative rehabilitation, including the integration of psychological approaches in the restoration of motor functions. Special attention is paid to the motivational and psychological aspects of rehabilitation by Doctor of Medical Sciences Tetyana Levchenko, who studies the influence of anxiety, depressive disorders and the level of motivation on the dynamics of recovery of patients with severe injuries (fractures, spinal cord injuries) (Levchenko, 2021, p. 115–122).

Internationally, research that combines medical, psychological, and motivational components of rehabilitation is significant. In particular, Professor James R. Ray (Mayo Clinic, USA) develops multidisciplinary rehabilitation programs for spinal and joint injuries, including physical therapy and psychological interventions (Ray, 2019). Dr. William S. Taylor focuses on psychological support for patients during the rehabilitation period, using cognitive-behavioral therapy and relaxation techniques to improve motivation and reduce psycho-emotional stress (Taylor, 2018). Professor Richard H. Gross (University of California) investigates the effectiveness of individualized rehabilitation strategies taking into account the psychological state of patients who have suffered complex injuries to the musculoskeletal system (Gross, 2020, p. 755–763). The importance of a comprehensive approach to rehabilitating patients with musculoskeletal injuries is evident in modern scientific research, both in Ukraine and abroad. The integration of physical therapy, psychological support, and motivational strategies is used in this approach to enhance the effectiveness of the recovery process and improve patient quality of life. To investigate the influence of psychological and motivational factors on the course of rehabilitation, an empirical study was conducted.

The purpose of the article is to analyze the influence of motivational and personal factors on the effectiveness of rehabilitation of patients with musculoskeletal injuries, as well as to identify the relationships between the level of internal motivation, personal characteristics, and the dynamics of functional recovery.

Presentation of the main material. The study was carried out on the basis of the Zaporizhzhia Regional Clinical Hospital. The sample included 47 patients with musculoskeletal injuries who were undergoing rehabilitation. The average age of the participants was 42.5 ± 17.5 years. Data collection allowed us to analyze not only the physical condition of the rehabilitators, but also the level of their motivation, psychological well-being and the relationship of these factors with the dynamics of recovery.

Table 1
Description of the study sample

Sampling parameters	Number of rehabilitators	
	women	men
Rehabilitants	23	24
Married	8	5
Employed	23	14

The analysis of the obtained results shows that the overwhelming majority of the studied individuals (87.2%) are dominated by a negative or unstable level of motivation to participate in the rehabilitation process. The lack of motivation is insufficient for active and effective involvement in rehabilitation activities, which indicates the need for targeted psychocorrective influence. In these cases, it is advisable to involve a psychologist who, based on knowledge of factors that positively or negatively affect the patient's motivational state, is able to exercise professional influence on the motivational component of the individual's rehabilitation potential. This results in an increase in the overall effectiveness of the rehabilitation process. In contrast, the number of individuals who had a strong positive motivation for rehabilitation was the smallest and only made up 12.8% of the total sample. Patients in this group demonstrate a high level of subjective involvement in the recovery process, consciously changing behavioral patterns, habitual surroundings and ways of responding in order to adapt to the changed living conditions caused by injury or disability. Their approach is defined by a stage of action that involves the active use of internal resources, significant efforts, and consistent actions designed to achieve the desired changes. This stage's key feature is its ability to modify established patterns of perception and behavior, which opens up wide opportunities for successful psychological and physical rehabilitation.

To identify the features of the motivational orientation of patients with musculoskeletal injuries (MSIs), the University of Rhode Island Behavioral Change Assessment Scale (URICA) was used, which allows determining the stage of a person's readiness for change, in particular for active participation in the rehabilitation process. The analysis involved comparing indicators between men and women for three levels of motivation: negative, unstable, and positive. The results of the distribution of the subjects according to these levels are given in Table 2.

Table 2
**Distribution of patients with TODA by levels of motivation for rehabilitation
(in % / absolute numbers)**

Sex	Negative motivation	Unstable motivation	Positive motivation
Women (n = 23)	60.9% (14 people)	26.1% (6 people)	13.0% (3 people)
Men (n = 24)	70.8% (17 people)	16.7% (4 people)	12.5% (3 people)

In order to statistically substantiate the identified differences, Fisher's φ^* criterion was applied. All obtained values ($\varphi^* = 0.72$; $\varphi^* = 0.79$; $\varphi^* = 0.05$, respectively) did not exceed the critical values (φ^*_{cr}), which indicates the absence of statistically significant differences between men and women in terms of levels of motivation for rehabilitation ($p > 0.05$). Thus, according to the results of URICA, no gender differences were found in the structure of motivational attitudes towards participation in

the rehabilitation process. The total sample had a relatively balanced distribution of patients with different levels of motivation. All respondents were combined into three groups according to their dominant level of motivation for rehabilitation, regardless of gender, for further analysis. The first group (with a negative level of motivation) included 31 people (62%), the second (with an unstable level of motivation) – 10 people (20%), the third (with positive motivation) – 6 people (12%). The effectiveness of the rehabilitation process may be affected by the personal and psychological characteristics of motivation, which can be addressed through this approach.

The study used the questionnaire “Coping Inventory for Stressful Situations, CISS” by R. Lazarus, which allows assessing the level of severity of eight coping strategies, including: confrontation, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, problem-solving planning, and positive reappraisal.

Table 3

Level of expression of coping strategies in rehabilitators

Coping strategies	Levels of severity
Confrontation	48.87
Distancing	43.38
Self-control	43.70
Finding social support	50.59
Accepting responsibility	46.02
Escape-avoidance	49.81
Problem solving planning	46.89
Positive reappraisal	50,77

Analysis of the data obtained shows that the highest levels of severity are observed for the strategies of positive reappraisal, seeking social support, and escape-avoidance, which indicates their dominance in the structure of the subjects' coping behavior. Positive reappraisal seems to be the most prominent strategy among the sample participants. The emotional-cognitive system is reflected in this strategy by rethinking the situation, focusing on personal growth, and finding meaning in the experience. According to the results of statistical analysis (Mann-Whitney U-test), men use this strategy significantly more often than women. The second most pronounced strategy is the strategy of seeking social support, which involves the active involvement of external resources in solving the problem: informational (recommendations of specialists), emotional (psycho-emotional acceptance and empathy), and instrumental (specific practical assistance). There are no significant gender differences when it comes to using this technique, which is characteristic of both men and women. The active use of it in rehabilitation context is a result of the need to adapt to new social conditions and overcome social inadequacy caused by disability. The psychologist has to account for the possibility of developing addictive behavior that necessitates corrective support at the same time. The third most prominent strategy was the escape-avoidance strategy, which involves avoiding a problematic situation by ignoring, fantasizing about, or denying it. The Mann-Whitney test confirms that women use this method of response more frequently than men. This strategy may be used excessively in clinical practice to indicate emotional exhaustion or a lack of preparation to overcome stress in a constructive manner. It has been observed that men use the distancing technique more frequently, which involves reducing emotional involvement and subjective significance of the problem by switching attention, emotional detachment, or devaluating the situation. Emotional stress can be reduced through this form of psychological protection, but chronic use can lead to avoidance of responsibility and passivity. As a result, women were more likely to accept responsibility. A moderate use of this strategy is linked to a high level of reflection and a desire to analyze one's own actions and consequences. Excessive dominance can result in increased self-criticism, feelings of guilt, and a tendency to depressive experiences. The psychologist must pay attention to this factor when conducting psychocorrective work. Thus, the results of the study indicate the presence of specific patterns of coping behaviors in patients undergoing rehabilitation after musculoskeletal injuries, which are important for optimizing psychocorrective and rehabilitation programs taking into account gender characteristics.

The results of the study of the personal characteristics of rehabilitators using the "Big Five" method allow us to draw conclusions about the characterological features of the subjects. According to the results obtained, women have significantly lower indicators on the extraversion-introversion scale ($M = 32.45$, $SD = 4.32$), which indicates a tendency to introversion. This suggests that women tend to rely more on their own abilities and strengths than on social interactions, and experience a greater level of isolation and restraint. Taking into account introverts' tendency to work in calm conditions, especially in the morning, is crucial for psychocorrectional work with them. Statistical analysis (Mann-Whitney U-criterion) showed that the differences between men ($M = 35.12$, $SD = 5.19$) and women on this scale are significant ($p < 0.05$). For extraverts, who are characterized by greater openness to interaction, the extraversion scale scores in men are significantly higher ($M = 39.86$, $SD = 4.98$) compared to women ($M = 32.45$, $SD = 4.32$), which confirms their tendency to active social contacts and group activities. According to the results of the study, extraverts are more likely to show emotional irritability ($M = 40.23$, $SD = 5.11$) and need more social support in the rehabilitation process. In clinical practice, this requires the use of group methods and the avoidance of monotonous tasks. Regarding the attachment scale, the results showed that there were no differences between men and women ($p > 0.05$). The scores on this scale for men ($M = 38.67$, $SD = 5.24$) and women ($M = 37.98$, $SD = 4.88$) are statistically insignificant. This indicates the same level of need for social support and the tendency to create emotional connections. On the self-control-impulsivity scale, women showed significantly higher results ($M = 42.11$, $SD = 4.76$) compared to men ($M = 37.89$, $SD = 5.12$), which indicates a greater ability to voluntarily regulate behavior among women. Statistical analysis confirmed the significance of this difference ($p < 0.01$), which indicates a higher level of self-control among women and their ability to achieve high results in their activities. On the expressiveness-practicality scale, women also demonstrated higher scores ($M = 40.05$, $SD = 5.15$), indicating their greater adaptability to everyday life and a tendency towards stability and reliability compared to men ($M = 35.74$, $SD = 5.02$). The statistical difference between the groups is significant ($p < 0.05$), confirming greater practicality and orientation towards material values among women.

The study analyzed the level of self-efficacy in rehabilitators using the "General Self-Efficacy Scale". The concept of "self-efficacy" itself refers to a person's subjective perception of their capabilities to solve life problems and achieve goals. According to the results obtained, a significant part of rehabilitators (53.20%) has an average level of self-efficacy, which indicates moderate confidence in their abilities. 17% of participants showed a low level of self-efficacy, which may indicate difficulties in adapting to stressful situations, while 29.80% of rehabilitators have a high level, which indicates their ability to effectively cope with life's difficulties. For a more detailed analysis, a comparison of the level of self-efficacy between men and women was carried out, which is reflected in Table 4.

Table 4
Number of men and women with different levels of self-efficacy

Level of self-efficacy	Men (24 people)	Women (23 people)
Low	0 (0%)	8 (34.8%)
Average	15 (62.5%)	10 (43.5%)
High	9 (37.5%)	5 (21.7%)

According to the results of the study, men have a higher level of self-esteem compared to women: 62.5% of men have an average level of self-efficacy, and 37.5%—high. In contrast, among women, there are more people with a low level (34.8%) and a smaller proportion with a high level (21.7%). Statistical analysis using the Fisher test (φ^*) revealed significant gender differences: $\varphi = 3.22 > \varphi_r = 2.31$, $p < 0.01$, which indicates a statistically significant difference between men and women in the level of their self-confidence and ability to cope with life's difficulties. According to the data obtained, men tend to have more confidence in themselves and are better able to handle stressful situations. Gender consideration is essential when developing rehabilitation and psychocorrectional programs, as the level of self-efficacy can affect how patients are supported and motivated.

According to a study conducted using the projective method 'Ideas and Values', the most important value for rehabilitators is independence, as indicated by 80.85% of them. This indicates a high level of desire for independence, autonomy, and control over one's own life, which is an important aspect in the rehabilitation process after injuries or illnesses. According to 68.08% of participants, career

and work hold second place in importance. Rehabilitation professionals believe that career and professional activities are the primary route to independence, social fulfillment, and economic self-sufficiency. The importance of social adaptation and integration of persons with disabilities into the workplace is highlighted, as well as the support for their active participation in public life. The third most important position is occupied by love and marriage, which were noted by 60.5% of participants. The importance of emotional closeness, support, and interaction with other people is reflected by this value, which is crucial for psychological rehabilitation and emotional well-being of people with disabilities. Thus, the results of the study show that in rehabilitators who are experiencing the consequences of injuries or diseases, there is a significant increase in the importance of those life values that, due to physical limitations or changes in social status, have become partially lost or limitedly accessible. The identified trends emphasize the importance of a comprehensive approach to rehabilitation programs that focuses on restoring rehabilitators' physical, social, and emotional autonomy.

Conclusions and prospects for further research. An empirical study conducted at the Zaporizhzhia Regional Clinical Hospital with the participation of 47 people with musculoskeletal injuries revealed significant relationships between motivation for rehabilitation and various internal and external factors. The results of the study indicate that the vast majority of rehabilitators (87.2%) need psychological support due to a low or unstable level of motivation, which indicates the need for targeted influence on the motivational component of rehabilitation potential. The correlation analysis revealed that there are significant positive connections between the level of motivation for rehabilitation and personal traits such as extraversion, self-control, attachment, and expressiveness. It is evident that those who have developed social connections, a high level of responsibility, and a desire to cooperate are more motivated to recover. At the same time, it was found that in men, motivation is significantly correlated with attachment, self-development, and the desire for mobility, while in women, motivation has a strong connection with extraversion, self-control, positive reappraisal, and orientation towards career realization.

Analysis of coping strategies showed that the strategy of positive reappraisal, which was most strongly associated with the level of motivation, promotes effective rehabilitation. In addition, a positive relationship was found in men with distancing, while in women with decision planning, indicating gender-differentiated mechanisms of adaptation to stressful situations.

The study emphasized the significance of axiological factors in the formation of motivation. The importance of independent living is a leading value among rehabilitators, but individual values vary depending on gender: men prioritize self-development, while women prioritize work. The study's findings indicate that motivation for rehabilitation is a multifactorial phenomenon that is largely determined by the psychological and social characteristics of individuals. The importance of an individualized approach to developing rehabilitation support programs is underlined, with a focus on taking into account the personal characteristics, value system, and typical coping strategies of rehabilitators. Further research is possible with a deeper examination of gender-specific motivation and adaptation strategies, and the development of specific psychocorrective support methods for individuals with different levels of motivation. To develop more effective and comprehensive rehabilitation programs, it is important to study the influence of social factors, such as family and environment support, on motivation for rehabilitation.

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