ORIGINAL ARTICLE

CONTENTS

# Study on medical professionals' attitudes and awareness of multidisciplinary rehabilitation in pain syndromes

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## ABSTRACT

**Aim:** To assess the awareness and training needs of healthcare professionals regarding the multidisciplinary rehabilitation of patients with pain syndromes and comorbid conditions resulting from war trauma.

**Materials and Methods:** The structured online survey of 120 people, including doctors, nurses, medical assistants, paramedics and senior students of medical universities in Kyiv and Zaporizhzhya (Ukraine). Before that, a targeted review of international (WHO, NICE, EULAR) and national guidelines on multidisciplinary rehabilitation was conducted. Based on this regulatory framework, the authors developed the «Multidisciplinary Rehabilitation Attitude and Readiness Questionnaire».

**Results:** Although 89% of respondents were familiar with the concept of multidisciplinary rehabilitation, only 17% demonstrated a comprehensive understanding. Most respondents (54%) reported only partial awareness and emphasized the need to improve teamwork skills and learn modern rehabilitation methods. Psychological support was recognized as essential by 58%, while 42% showed uncertainty or held misconceptions. Core rehabilitation components identified included pharmacological stabilization (65%), interdisciplinary collaboration (50%), and patient education (45%). However, elements such as empathy, active listening (25%), and social reintegration (15%) were undervalued. Only 23% of participants rated their competence in teamwork as sufficient, and nearly half (48%) assessed their preparedness as low. Priority areas for further education included trauma-informed care, psychological first aid, prevention of professional burnout, and the use of non-pharmacological methods such as electrotherapy and acupuncture.

**Conclusions:** Despite formal awareness of multidisciplinary rehabilitation, significant gaps exist in practical competencies. Expanding interdisciplinary training and emphasizing psychosocial components are critical to improving care for war-affected patients.

**KEY WORDS:** multidisciplinary rehabilitation, pain syndromes, psychological support

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## INTRODUCTION

The ongoing war in Ukraine has led to a significant increase in patients suffering from chronic pain syndromes accompanied by psychosomatic and emotional disorders. This clinical context requires an integrated multidisciplinary approach to treatment and rehabilitation. According to the Ministry of Health of Ukraine, 20–25% of individuals in combat zones require psychological first aid, and over 50% experience acute stress or psychosomatic symptoms [1].

The prevalence of chronic pain has notably risen among both civilians and military personnel, with up to 60% of wounded soldiers reporting persistent pain six months post-discharge, and more than 40% presenting comorbid psychological conditions. Furthermore, up to 50% of patients with somatic complaints exhibit signs of psychosomatic dysfunction [2]. The World Health Organization data indicate that 15–20% of hospitalised patients show symptoms of post-traumatic stress disorder (PTSD) or related psychological trauma, and as of 2023, over 80% of Ukrainians report high levels of stress due to the war [3].

Over the past decade, Ukraine has endured major upheavals that likely had a significant impact on the population's mental health. In 2014, following the Revolution of Dignity, Russia annexed Crimea and launched a military conflict in eastern Ukraine, leading to the displacement of around two million people. A study conducted on a representative sample of these internally displaced individuals revealed that 27,4% met the diagnostic criteria for PTSD, 20,6% for major depressive disorder, and 16,1% for generalised anxiety disorder. Additionally, 14,3% of men and 1,7% of women screened positive for alcohol use disorder [4].

Medical professionals increasingly encounter patients requiring not only pharmacological or physical care,

but also psychological support, behavioural correction, physical therapy, and social reintegration. However, the level of preparedness for such complex, team-based care remains uneven [4]. Estimates suggest that only 30–40% of healthcare workers possess basic knowledge of multidisciplinary rehabilitation, and fewer than 20% have received relevant training [5].

In this context, assessing healthcare professionals' awareness and attitudes towards multidisciplinary rehabilitation is essential for enhancing Ukraine's healthcare system during and after the war. Improving this approach is critical not only for effective treatment, but also for the long-term recovery and quality of life of affected patients.

## AIM

The aim of the study was to evaluate the awareness, attitudes, and training needs of healthcare professionals and medical students regarding the multidisciplinary rehabilitation of pain syndromes associated with wartime comorbidities, and to identify key barriers and opportunities for improving interdisciplinary collaboration and psychological support in clinical practice.

## MATERIALS AND METHODS

The development of the research instrument was informed by the analysis of international clinical guidelines (WHO, EULAR, NICE), national healthcare regulations of Ukraine, and current scientific literature on multidisciplinary rehabilitation, chronic pain, and psychosomatic disorders [1-6]. These sources highlighted the need for structured assessment of healthcare professionals' preparedness for interdisciplinary rehabilitation in the context of war-related comorbidities. Based on this foundation, the authors developed a structured survey tool – the «Multidisciplinary Rehabilitation Attitude and Readiness Questionnaire» – designed to evaluate the levels of awareness, clinical experience and professional training needs related to multidisciplinary approaches in managing pain syndromes.

The questionnaire consisted of four sections:

- Social and professional characteristics of the respondents;
- Awareness of the multidisciplinary approach in managing pain syndromes;
- Experience in interdisciplinary clinical teamwork;
- Perceived educational needs and qualification enhancement.

The study involved a total of 120 participants, comprising doctors, nurses, medical assistants, paramedics, and senior students from medical universities. The survey was conducted online. Data collection took place between December 2024 and February 2025. Participation was entirely voluntary and anonymous. The geographical distribution of the respondents included healthcare professionals and students from Zaporizhzhia and Kyiv. The survey was administered via Google Forms, and the sample characteristics – including age, professional background, and work experience – are presented in Fig. 1.

The representative sample consisted predominantly of respondents aged 36–45 years (45%). It is worth noting that among the respondents were also medical students under the age of 25 (20%). In terms of professional background, the respondents included doctors (18%), nurses (35%), medical assistants (14%), paramedics (13 %) and medical students (20%). The majority of respondents (42%) had more than 10 years of experience in the medical field, while 25% had 5–10 years of experience. About 13% had been working in the profession for 1–5 years, and only 20% were newcomers to the field, having worked in healthcare for less than a year

The study complied with international and national ethical standards. It adhered to the Declaration of Helsinki, the Council of Europe Convention on Human Rights and Biomedicine, and Articles 43 and 45 of the Law of Ukraine "Fundamentals of Health Legislation". The study protocol was approved by the local ethics committee. All responses were provided voluntarily and anonymously (no personal data were collected).

## RESULTS

One of the key objectives of the study was to determine the baseline level of awareness among healthcare professionals regarding the principles of multimodal (multidisciplinary) rehabilitation in the context of war-related patient care (Fig. 2).

When asked, "Are you familiar with the concept of a multimodal approach in rehabilitation?", the majority of respondents (n=107 [89%]) answered affirmatively. Only 13 respondents (11%) had not encountered this concept in their professional activities (Fig. 2). These results indicate that, at the current stage of development of the healthcare system in wartime conditions, active information and educational activities are being implemented to increase knowledge about the comprehensive approach to the rehabilitation of patients with combat injuries and pain syndromes.

Fig. 3 presents the distribution of the respondents' sample by their awareness of the principles and approaches to implementing a multidisciplinary approach in the rehabilitation of patients with comorbid conditions and pain syndromes caused by war.

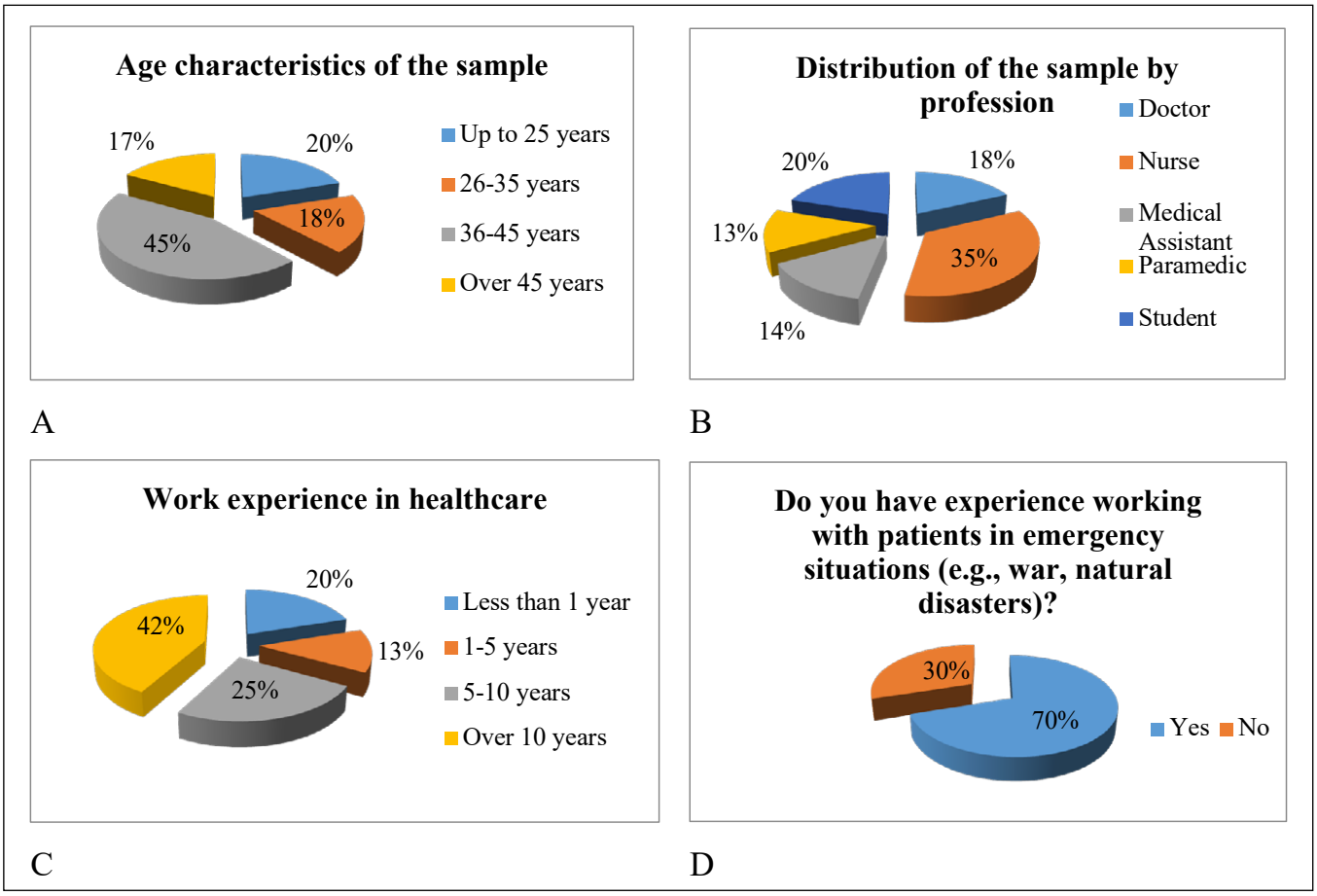


**Fig. 1.** The characteristics of the respondents` sample (n=120) by the following parameters: A – age distribution; B – distribution by profession; C – distribution by experience; D – distribution by experience in working with patients in emergency situations (data presented as percentages)

The majority of respondents (54%) have only a partial understanding of the approach and need more knowledge about its implementation, technologies, and collaboration among specialists. A smaller group (17%) is well-acquainted with the principles of the approach and can explain interdisciplinary collaboration methods. About 21% have heard of it but lack a clear understanding, while 8% are completely unfamiliar with the concept (Fig. 3). These results highlight a significant need to improve healthcare professionals' knowledge of the multidisciplinary approach in rehabilitation, particularly for patients affected by war, and to enhance their skills in teamwork, modern rehabilitation technologies, and inter-specialist interaction.

The data on the degree of understanding of psychological assistance and support in the implementation of the multidisciplinary approach in the rehabilitation of patients with comorbid conditions are summarized in. Fig. 4.

The survey results show that the majority of specialists – 70 (58%) – view psychological assistance in a multidisciplinary approach as initial psychological support for patients in crisis situations (trauma, stress, disaster). However, 20 respondents (17%) are unsure how to define psychological assistance, and another 20 (17%) equate it with emergency medical-psychological support for patients with mental disorders. Ten respondents (8%) define it as providing psychological and pharmacological help for mental disorders. Overall, 42 % of specialists require further clarification on the concept of psychological assistance, highlighting the need for an integrated training system to equip healthcare professionals with the skills to provide psychological support in clinical settings (Fig. 4).

The analysis of responses to the question «What are the key stages of the multidisciplinary approach in rehabilitation? » (Fig. 5) revealed that the majority of respondents – 78 (65%) – consider pharmacological therapy for stabilizing the patient's condition a key element of the rehabilitation process.

Half of the respondents – 60 (50%) – emphasised the importance of involving additional specialists (rehabilitologists, psychologists, physiotherapists) as essential. Fifty-four (45%) identified informational support for the patient, especially in cases of combat injuries and chronic pain, as important. Only 42 (35%) believed building a trusting relationship with the patient is a key aspect. Regarding psychological aspects, 30 respondents (25%)

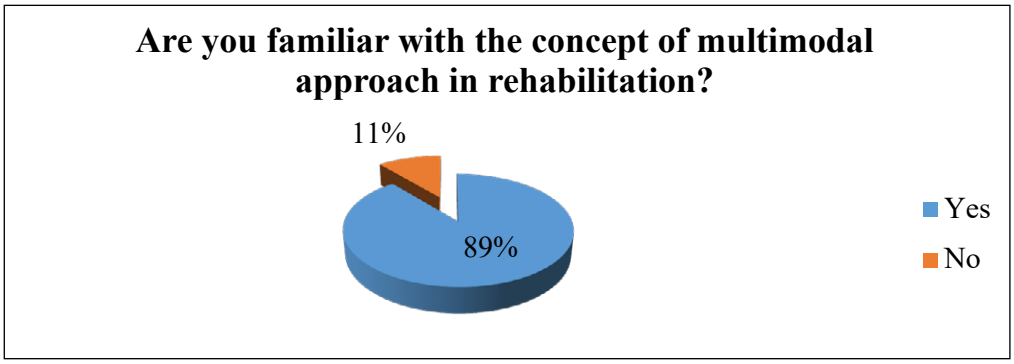


**Fig. 2.** The distribution (%) of the respondents` sample (n=120) by the awareness of the multimodal approach in rehabilitation

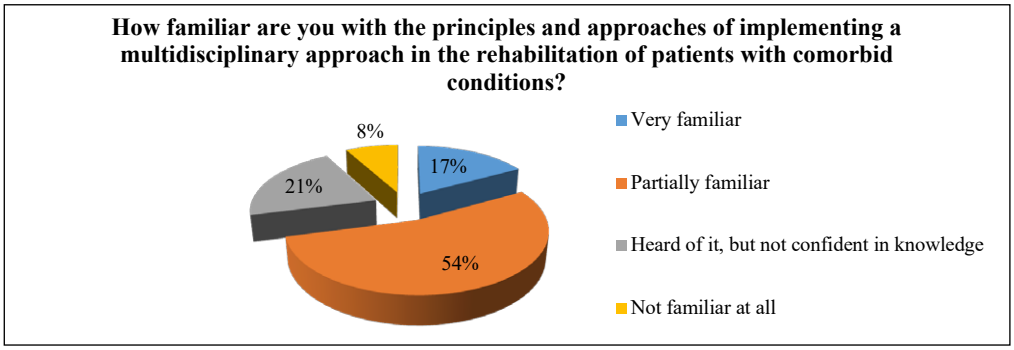


**Fig. 3.** The distribution (%) of the respondents` sample (n=120) by the awareness of the principles of implementing a multidisciplinary approach in the rehabilitation of patients with comorbid conditions and pain syndromes caused by war

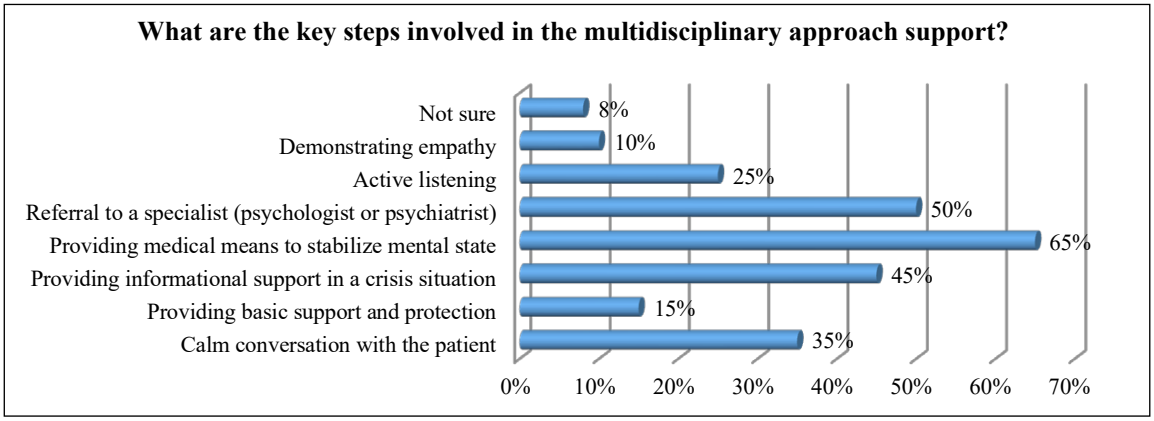


**Fig. 4.** The distribution (%) of the respondents` sample (n=120) by the degree of understanding of psychological assistance and support in the implementation of the multidisciplinary approach in the rehabilitation of patients with comorbid conditions

prioritised active listening, and 12 (10%) saw empathy as necessary. Only 18 (15%) highlighted social adaptation and restoring functional activity as crucial for overcoming combat injuries. Ten respondents (8%) struggled to identify the key aspects of the multidisciplinary approach, highlighting the need for further professional training to improve healthcare workers' knowledge of teamwork and rehabilitation strategies for patients with comorbid conditions and pain syndromes from war (Fig. 5).

The subjective evaluation of competence in multidisciplinary teamwork revealed that the majority of respondents – 58 (48%) – rated their skills as low, indicating insufficient preparation in comprehensive rehabilitation for patients with pain syndromes and comorbid conditions (Fig. 6).

Only 28 respondents (23%) felt competent for effective interdisciplinary collaboration, while 14 (12%) rated their skills as high. Fifteen individuals (13%) considered their preparation very low, which could hinder effective teamwork and patient rehabilitation. Only 5 specialists (4%) rated their competence as very high, having received specialised training in teamwork, rehabilitation technologies, and managing patients with combat injuries. Most respondents highlighted the need for supervision and intervision groups to improve training, share experiences, and analyse clinical cases. They also called for clear procedural protocols for team collaboration in rehabilitating patients with pain syndromes caused by war (Fig. 6).

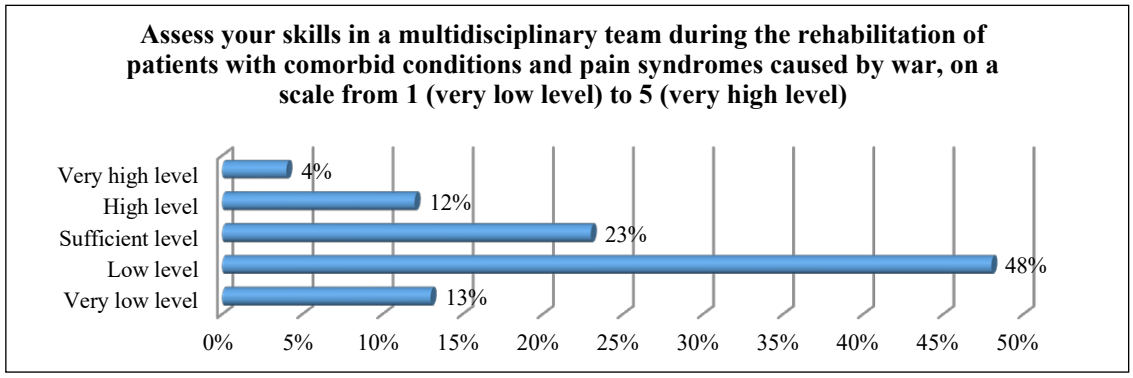


**Fig. 5.** The analysis of respondents' awareness regarding key concepts of implementing the multidisciplinary approach in the rehabilitation of patients with comorbid conditions and pain syndromes caused by war (data presented as percentages)

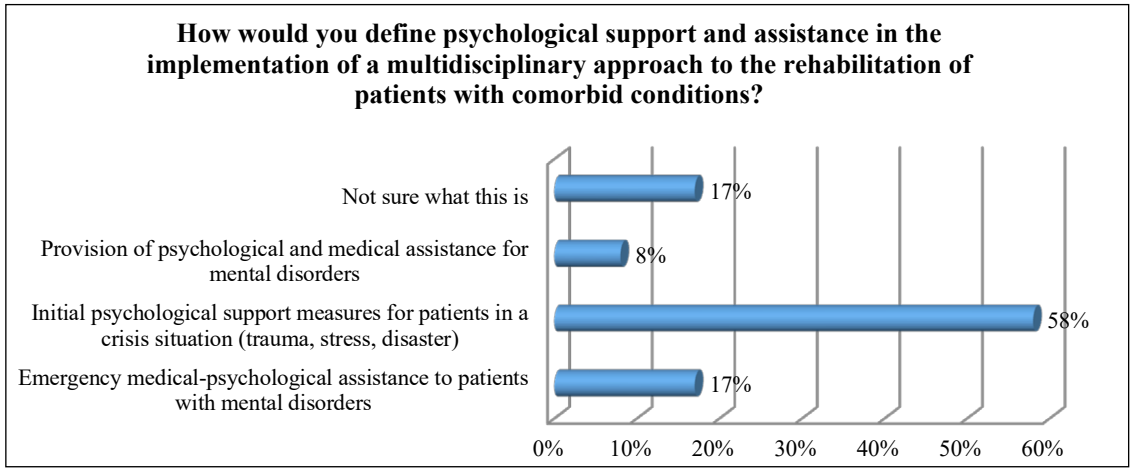


**Fig. 6.** The distribution (%) of the respondents` sample (n=120) by the self-assessment of healthcare workers' skills in multidisciplinary teamwork in the rehabilitation of patients with comorbid conditions and pain syndromes caused by war

## DISCUSSION

Recent studies confirm the effectiveness of a multidisciplinary approach in the rehabilitation of patients with comorbid conditions and pain syndromes. Involvement of specialists from different fields significantly enhances treatment outcomes, improves patients' quality of life, and helps prevent pain chronification. According to A. Rogers and S. Farris [6], pain is a complex biopsychosocial phenomenon that requires a multimodal treatment strategy. The authors emphasize that an interdisciplinary perspective is essential for understanding how pain influences a patient's identity and emotional well-being.

Chronic pain encompasses not only physical but also neuroplastic, immune, endocrine, and psychosocial dimensions. PTSD, chronic stress, and depressive disorders contribute to sympathetic nervous system hyperactivity and elevate levels of pro-inflammatory cytokines such as interleukin-6 and tumor necrosis factor alpha) [7], which in turn lead to sensitization of the nervous system. These processes are associated with changes in the structure and function of the prefrontal cortex, hippocampus and limbic system, negatively affecting cognitive performance and emotional regulation, as noted by B. Key and D. Brown [8]. The progression of chronic pain is further complicated by shared pathophysiological mechanisms with other chronic conditions such as diabetes, cardiovascular disease, and depression. Social isolation, low levels of emotional support, and sleep disturbances intensify pain perception and increase the risk of chronification, as indicated by J. van Wyngaarden et al. [9]. Additionally, conditions such as fibromyalgia, neuropathic pain, and comorbid mental disorders create further challenges for effective treatment strategies [10-12].

A broad body of evidence supports the efficacy of a multimodal rehabilitation approach that integrates pharmacotherapy, physical activity, electropuncture, acupuncture [11, 13], cognitive-behavioral therapy and social support mechanisms [8, 9, 11]. For instance, Y. Ashar et al. [12] have demonstrated that psychological therapies significantly contribute to pain reduction and long-term recovery. Similarly, group therapy, patient education, and social rehabilitation programs reduce stress, foster reintegration, and enhance the overall effect of medical interventions [14]. In the context of combat-related injuries, multidisciplinary rehabilitation

assumes a critical role. Elevated stress levels among both patients and healthcare professionals necessitate comprehensive care models that address the emotional and psychological dimensions of trauma. L. Butska et al. [15] highlight the value of neuroimaging and internet-based interventions, while physical therapy methods – including acupuncture and electrotherapy – have also shown clinical effectiveness in post-traumatic rehabilitation. Collaborative treatment protocols and structured interdisciplinary training programs improve treatment efficiency and contribute to consistent recovery outcomes [16].

The findings of the current study, conducted among healthcare professionals in Zaporizhzhia and Kyiv, underscore the pressing need for widespread implementation of the multidisciplinary rehabilitation model for patients with war-related pain syndromes and comorbidities. The high level of general awareness among respondents (89 %) regarding the concept of multidisciplinary care reflects a positive shift in medical education, which now increasingly incorporates biopsychosocial models of pain management (J. van Wyngaarden et al. [9]; A. Lee et al. [16]). Nonetheless, a critical discrepancy was identified between declarative awareness and practical readiness: 79 % of respondents acknowledged lacking sufficient knowledge or confidence to function effectively within interdisciplinary teams. This finding aligns with the conclusions of L. Butska et al. [17] and Y. Ashar et al. [18], who emphasized that insufficient interdisciplinary training compromises the quality of care for patients with psychosomatic disorders.

Psychological support was identified as a crucial component of the rehabilitation process by 58 % of participants. This corresponds with data presented by B. Key and D. Brown [8], which demonstrate strong comorbidity between chronic pain and depression. These results also reinforce the necessity of integrating psychotherapeutic interventions as part of long-term rehabilitation strategies (F. Beissner et al. [14]). Moreover, Y. Ashar et al. [18] provide neurobiological evidence that prolonged pain can cause structural reorganization of brain areas responsible for emotion regulation, further justifying the inclusion of psychological support in standard protocols.

The key components of a multidisciplinary approach, as recognized by respondents — such as the involvement of psychologists, physiotherapists, physical and rehabilitation medicine specialists, as well as the application of non-pharmacological methods like electrotherapy, acupuncture, patient education, and social reintegration — correspond to best practices supported by international systematic reviews (S. Raja et al. [19]; L. Butska [15]). Respondents also highlighted priority areas for further training, particularly in crisis psychology, psychological first aid, burnout prevention, and trauma-informed care. These identified needs are in line with global recommendations for preparing healthcare workers to operate in disaster zones and military conflict environments (O. Kesiena et al. [20]; L. Butska et al. [17]). In summary, the data obtained in this study support the necessity of strengthening the competencies of healthcare professionals in interdisciplinary collaboration and complex rehabilitation techniques. This conclusion is consistent with modern healthcare approaches that recognize multidisciplinary interaction as a cornerstone of effective post-war recovery strategies [19].

The structured analysis of survey results made it possible to assess the readiness of healthcare professionals to implement a multidisciplinary rehabilitation model, identify typical challenges in interdisciplinary cooperation, evaluate the need for additional training, and propose recommendations for enhancing educational curricula and clinical practices. These findings serve as a foundation for further efforts to improve comprehensive care for patients suffering from chronic pain and psychosocial consequences of war.

## CONCLUSIONS

The study revealed that while most healthcare professionals are familiar with the concept of multidisciplinary rehabilitation, a significant proportion lack a deep understanding of its principles and practical implementation. This gap reflects insufficient training in interdisciplinary collaboration and comprehensive patient care. Psychological support is recognized as important, yet often interpreted narrowly, underscoring the need for improved education in crisis psychology and trauma-informed practices. Furthermore, essential elements of patient-centered care – such as empathy, communication, and social reintegration - are undervalued compared to biomedical interventions. Self-assessments also point to low confidence in interdisciplinary teamwork, suggesting that structured educational programs, practical training, and clear protocols are urgently required. Strengthening these areas is crucial for improving the quality of rehabilitation services, particularly in the context of war-related health challenges.

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*The preparation of the questionnaire and the conduction of the study were carried out independently and authentically, without external interference. The materials developed by the authors, as well as the conducted analysis, are being published for the first time. The authors are not aware of any similar studies conducted in Ukraine.* *The research received no external funding.*

**CONFLICT OF INTEREST**
The Authors declare no conflict of interest

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