



ORIGINAL

Psychosocial Rehabilitation of Military Personnel with Post-Traumatic Stress Disorder: the Example of Ukraine

Rehabilitación psicosocial del personal militar con trastorno de estrés postraumático: el ejemplo de Ucrania

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ABSTRACT

Introduction: given the current events of the Russian-Ukrainian war, post-traumatic stress disorder (PTSD) is one of the most common psychological problems among military personnel, which requires the introduction and use of new techniques of psychological rehabilitation.

Objectives: the study aims to develop and test a comprehensive programme for psychological rehabilitation of military personnel and determine its effectiveness.

Method: the study was conducted among 30 military respondents diagnosed with PTSD. The experiment used pre-test and post-test data from participants at three different time points: pre-intervention, two weeks post-intervention, and four months post-intervention—main instruments: Military PTSD Checklist and Patient Health Questionnaire (PHQ-9). For mental health assessment, 3 scientifically validated indicators were used for data analysis: PCL-M, PHQ-9, and GAD-7.

Results: the results demonstrate the need to implement a comprehensive psychological rehabilitation programme for military personnel. If, at the beginning of the test, they were diagnosed with PTSD, acute depression and anxiety, then after two weeks of implementing the comprehensive programme, the indicators decreased significantly. After 4 months, the scores rose slightly but not significantly. This demonstrates the relevance and importance of using various activities to support the psychological state of military personnel who have experienced difficult and traumatic periods.

Conclusions: the conclusions summarise that recovery from PTSD requires a comprehensive approach that should consider the internal and external characteristics of each patient.

Keywords: Therapeutic Interventions; Psychotherapy Assessment; Social Integration; Methods Of Resource Support.

RESUMEN

Introducción: dados los acontecimientos actuales de la guerra ruso-ucraniana, el trastorno de estrés

postraumático (TEPT) es uno de los problemas psicológicos más comunes entre el personal militar, lo que requiere la introducción y el uso de nuevas técnicas de rehabilitación psicológica.

Objetivos: el estudio pretende desarrollar y probar un programa integral para la rehabilitación psicológica del personal militar y determinar su eficacia.

Método: el estudio se llevó a cabo entre 30 militares diagnosticados con TEPT. El experimento utilizó datos previos y posteriores a la prueba de los participantes en tres momentos distintos: antes de la intervención, dos semanas después de la intervención y cuatro meses después de la intervención; instrumentos principales: Military PTSD Checklist y Patient Health Questionnaire (PHQ-9). Para la evaluación de la salud mental, se utilizaron 3 indicadores validados científicamente para el análisis de datos: PCL-M, PHQ-9 y GAD-7.

Resultados: los resultados demuestran la necesidad de implementar un programa integral de rehabilitación psicológica para el personal militar. Si al inicio de la prueba se les diagnosticó TEPT, depresión aguda y ansiedad, a las dos semanas de aplicar el programa integral los indicadores disminuyeron significativamente. Al cabo de 4 meses, las puntuaciones aumentaron ligeramente, pero no de forma significativa. Esto demuestra la pertinencia y la importancia de utilizar diversas actividades para apoyar el estado psicológico del personal militar que ha vivido periodos difíciles y traumáticos.

Conclusiones: las conclusiones resumen que la recuperación del TEPT requiere un abordaje integral que debe considerar las características internas y externas de cada paciente.

Palabras clave: Intervenciones Terapéuticas; Evaluación Psicoterapéutica; Integración Social; Métodos de Apoyo de Recursos.

INTRODUCTION

Currently, post-traumatic stress disorder (PTSD) represents one of the most prevalent psychological issues among military personnel directly involved in combat, having endured the psychological or physical consequences of warfare. Military actions that pose a direct threat to life and health are a traumatic experience. They are forced to make complex and extraordinary decisions under highly stressful conditions and do not go away without a trace (although the consequences of such deep psychological traces can have an individual effect).

As a result, even after completing their military service, many soldiers experience significant problems that make it difficult for them to return to civilian life: anxiety, depression, aggression, sleep disorders, sociopathy, etc. For today's Ukraine, which has been subjected to Russian aggression, this challenge is highly relevant. The war continues to increase the number of casualties, causing devastating psychological pressure.^(1,2,3)

This makes it necessary to develop practical approaches to the psychosocial rehabilitation of servicemen and women who have PTSD. It is worth noting that despite the current practice of using a large number of different approaches to combat PTSD, no such method guarantees a complete and rapid recovery, i.e., it is not recognised as universal in its effect. In the current scientific literature, various aspects are identified as essential elements of effective rehabilitation: access to relevant government programmes, psychosocial support from trained professionals, psychological intervention, appropriate family work, and reintegration of servicemen and women into society.^(4,5,6)

Combining these elements into comprehensive rehabilitation programmes also involves a combination of psychotherapeutic and social methods. However, other researchers also emphasise the importance of understanding the work not only with servicemen and women and their families but also with society, which must learn to coexist with people living with PTSD.⁽²⁾ Separate opinions are also offered on the specifics of rehabilitation after psychological trauma. In particular, the role and importance of developing psychological flexibility in servicemen and women to counteract the negative manifestations of psychological trauma is emphasised.⁽⁹⁾

At the same time, some researchers question the effectiveness of psychotherapy in rehabilitation from PTSD, arguing that the recovery process can drag on indefinitely and that learning to live with psychological trauma is a better way out than simple rehabilitation^(10, 11, 13). However, this approach is recognised as quite controversial, as empirical studies conducted among veterans of the armed forces of different countries show the benefits of psychological intervention at different stages of PTSD treatment⁽¹⁴⁾. The analysed experience of implementing rehabilitation programmes of the US and UK armies indicates the importance of broad coverage of the implementation of the rehabilitation programme for servicemen.^(15,16,17) This makes forming a realistic combination of therapeutic interventions, social integration, psychotherapy, and resource support relevant for further development. Taking into account existing experiences will allow internationalising the Ukrainian experience through an international prism, pointing out standard and distinctive features in the process of military rehabilitation.

Given the considerable scientific interest in the study of PTSD and various aspects of its treatment, there

are still several gaps in such research that require further in-depth analysis. In particular, many existing rehabilitation programmes for soldiers focus primarily on pharmacological medical approaches. At the same time, social work with victims is not taken into account, although psychosocial interventions have already demonstrated their effectiveness. The issue of using comprehensive programmes that integrate individual approaches by the cultural, family, and state values existing in society also needs further updating. For this reason, the proposed article allows us to fill at least partially such scientific gaps through the prism of the development and further testing of comprehensive rehabilitation programmes for servicemen and women who have experienced PTSD.

Objective

The current state of development of the problem under study allows further research. The aim of the article is to analyse the main features of psychosocial rehabilitation of service members with post-traumatic stress disorders. Accordingly, the study will address the following objects:

1. Design a innovative psychosocial rehabilitation programme tailored specifically for service members diagnosed with PTSD.
2. To test the developed rehabilitation programme with a selected group of military personnel with PTSD.
3. Determine the the programme's effectiveness and its impact on their recovery and adaptation.

METHOD

Research Design

The experiment used pre-test and post-test data from participants with different group factors at three different time points: before, two weeks, and four months after. Each intervention was created to ensure the programme's effectiveness and to describe the importance of using not only individual psychotherapeutic forms and practices but also an alternative approach: recreation with the help of nature. The same recruitment, assessment, and eligibility criteria were used for the three different interventions, and they were implemented in a consistent manner.

The experiment was conducted in the neighbourhood of a Ukrainian city. To recruit participants, 65 users registered with the Department of Social Protection were identified. To recruit participants, a conversation was first held to explain the study's main objectives and its potential outcome. Thirty interested volunteers, 25 men and 5 women, who met the eligibility requirements (military veterans with an official diagnosis of PTSD from a psychiatrist) agreed to participate in the experiment. The diagnosis was confirmed by documents, including an official psychiatric diagnosis. All the participants served in the army for different periods - an average of 7 years. None of the participants had received psychological treatment for post-traumatic stress disorder at that time. Accordingly, their support was comprehensive. Initially, there were extraordinary conversations with a psychologist, CBT, group therapy, autogenic training, muscle relaxation, music therapy, art therapy, etc. All participants in the experiment took these sessions. To determine the role of the alternative "green" approach, participants were randomly assigned to pairs using the online randomisation service www.random.org to participate in a joint recreational experience: archery, fishing, and hiking. Participants have explained the opportunity to learn a new recreational sport from trained professionals and to establish connections with other veterans experiencing post-traumatic stress disorder.

Tools and procedure

The research procedure was systematic and phased. Psychotherapeutic measures were implemented at three points in time. In particular, 2 weeks before, two weeks after, and four months after the psychological assistance. The latter data were collected through correspondence on social media. The main instrument used in the study was the Military PTSD Checklist (PCL-M). Depression was assessed using the Patient Health Questionnaire (PHQ-9).

In addition, the study used a custom-designed survey to assess the effectiveness of the selected programme. The survey questions covered demographic data, programme effectiveness, weaknesses, and strengths. The survey was generally conducted using a Likert scale (1 to 5) (see table 1).

Measurement

Baseline measurements were obtained two weeks before the intervention (baseline), two weeks after the intervention and four months after the intervention. All responses were obtained via remote social media. Three scientifically validated measures were used to assess mental health. The Military PTSD Checklist was used to assess PTSD symptoms (PCL-M). There are currently three versions of the Posttraumatic Stress Disorder Checklist: military (PCL-M), civilian (PCL-C), and trauma-specific (PCL-S). It is a widely used test. PCL-M scores can range from 17 to 85. In general, scores of 30-35 indicate posttraumatic stress disorder, and for those

receiving primary care for veterans, cut-off scores of 36-44 are recommended. The Patient Health Questionnaire (PHQ-9) was used to measure depression. The PHQ-9 scores range from 0 to 27, with scores of 5 to 9, 10 to 14, 15 to 19, and 20 to 27 indicating mild, moderate, moderately severe, and severe depression, respectively. To measure anxiety, the General Anxiety Disorder (GAD-7) was used. The GAD-7 scale ranges from 0 to 21. Scores 5-9 correspond to mild anxiety, 10-14 to moderate anxiety, and 15-21 to severe anxiety.

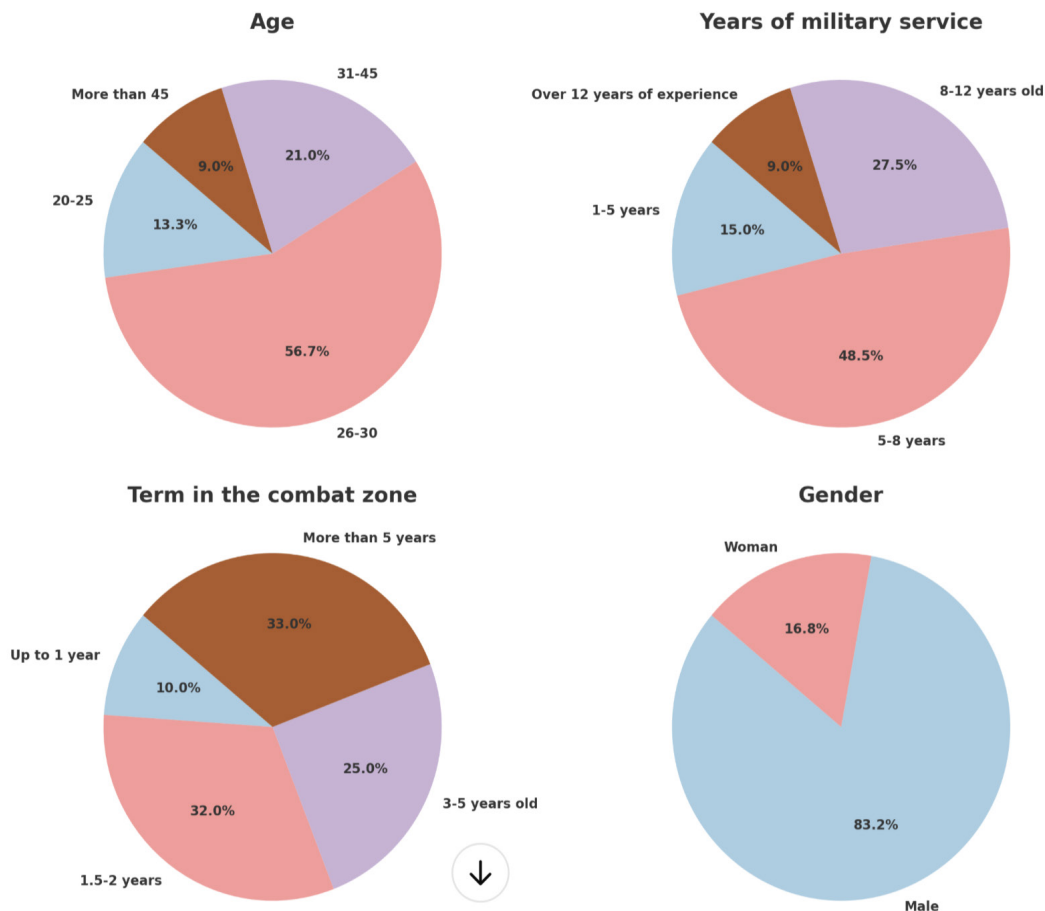


Figure 1. Demographic data

Table 1. Template from the questionnaire	
Section of the questionnaire	Question
Demographic data	1. Enter your age and gender 2. How many years you have been in service 3. How long were you in the combat zone? 4. Have you received treatment for PTSD before?
Performance evaluation	5. Rate the effectiveness of the comprehensive programme from 1 to 5 6. Evaluate the effectiveness of the following activities: group sessions, muscle relaxation, art therapy, music therapy, outdoor relaxation practices 7. Has your health improved? 8. Has your process of adaptation to peaceful life improved?
Overall impression	9. Provide an overall impression of the programme

Data analysis

All the data obtained from the measurement indicators and the questionnaire were subjected to rigorous analysis. A comprehensive analysis of three indicators was carried out first: PCL-M, PHQ-9 and GAD-7. All data obtained from these indicators were entered into unique tables: the first stage (before the programme), two weeks, and four months after the intervention. All the data obtained were entered into these tables to track the recovery dynamics. After that, the data from the survey conducted among 30 participants were also transferred to another table. First, a table was created with demographic data related to gender, age,

service length, and combat participation. After that, the last table was created, which concerned the overall assessment of the developed psychological rehabilitation programme. After that, all the data obtained were systemised and synthesised. Finally, a comparative analysis was used to compare the data obtained from the indicators and survey analysis with the data available in the scientific literature.

RESULTS

Many servicemen and women who took part in hostilities need targeted psychological rehabilitation measures. Accordingly, developing a particular comprehensive psychological rehabilitation programme is becoming an urgent task. First and foremost, trust plays a vital role in recovery from PTSD. As proven by other scholars studying the relevant experience of European army personnel, establishing trust becomes a critical stage in the long process of rehabilitation and further adaptation to peaceful conditions. First and foremost, trusting relationships are necessary with specialists (psychologists, psychiatrists and other professionals) responsible for treatment at different stages of PTSD.^(18,19) This basis for effective treatment is the ability to talk openly about unpleasant topics, better understand experiences, and use further effective treatment methods. In addition, trust is effective in collective sessions - in an environment of participants with similar experiences, it is possible to create safe conditions for free exchanging thoughts and experiences.^(20,21,22) Such opportunities contribute to the realisation that servicemen and women are not alone in their problems, which have similar manifestations in many identical cases.⁽²³⁾

An important aspect is the development of trust between servicemen and women and between society and service members. It is difficult for service members to integrate into civilian life because of psychological trauma, so support from family, friends, government agencies, and effective rehabilitation programmes are extremely important for subsequent reintegration.^(24,25) Researchers also believe that trust is essential for self-perception, as servicemen and women need to restore trust in themselves and their capabilities, which can be a step towards developing resilience and self-confidence.^(26,27,28) In the long run, this component will help restore the ability to make informed decisions, deal with internal affairs, and deal with domestic problems, conflicts, etc.⁽²⁹⁾

Therefore, the implementation of a rehabilitation programme should begin with trust as a manifestation of guaranteeing safety, receiving the necessary support from loved ones, establishing effective interaction with professionals, and working on self-awareness, which generally significantly improves the ability of servicemen and women to undergo rehabilitation and return to everyday life successfully.⁽³⁰⁾ At the same time, modern European armies use a unique approach to combating PTSD. It involves early psychological training, allowing soldiers to withstand combat stress's harmful effects while performing direct combat missions.^(31,32)

The use of such techniques relies on special exercises aimed at learning stress management techniques, providing the necessary psychological support during rotations on the battlefield or peacekeeping missions, continuously checking the psychological state of service members, identifying problematic elements at the initial stage with recommendations for further rehabilitation measures.^(33,34)

After servicemen return from special operations, combat operations or peacekeeping operations, special psychological services use special sessions of "defusing" (expressing servicemen's expression during a discussion about their experiences) and "defraining" (discussing and analysing in detail the stressful situations in which the serviceman found himself during combat).^(35,36) The use of such tactics reduces psychological pressure and helps to identify possible psychological disorders at the early stages of their occurrence. At the same time, much attention has been paid to the development of programmes to combat PTSD, which indicates the overall effectiveness of this approach.⁽³⁷⁾

A modern programme should be aimed at restoring the internal and external resources of combatants who have had PTSD. This programme focuses on the use of psychological techniques and forms of psychotherapeutic care. Table 2 demonstrates the main stages, tasks and techniques at different stages of the developed comprehensive programme for psychological rehabilitation of military personnel. This programme is addressed both internally and externally.

Table 2. Stages, goals and techniques of a comprehensive psychological rehabilitation programme

Stage name	Objective	Target	Techniques
Initial (first meetings)	Creating a safe space for adaptation and stabilisation	Negative attitudes towards communication with a psychologist	Empathetic interview
Information support (first meetings)	Raising awareness of veterans about the impact of extreme stress on their health	Lack of knowledge about the negative impact of difficult experiences	Interviews, elements of psycho-education (psycho-education)

Psychotherapeutic (2-10 meetings)	Reduction of symptoms, levelling of tension Working with internal resources	Mental maladjustment	CPT Group PA Autogenous training Exposure therapy EMDR therapy Muscle relaxation Biosuggestion Stress management Art therapy Music therapy Relaxation practices, etc.
Outer circle (2-4 meetings)	Activating external resources Working with the environment	Secondary trauma	Psychoeducation
Final stages	Integration of experience Support the change	New life skills	Group PA Relaxation-no practices Wellness practices

The main objectives of the developed programme include the following elements:

1. Eliminating potential or actual existing threats to the mental health of combatants
2. Integration of the individual into a normal lifestyle
3. Restoration of a person’s personal status

When faced with psychological changes in a person, it is worthwhile to conduct a systematic assessment of mental health through clinical diagnosis. Does the person possess a certain resource that can be defined as the dynamics of appropriation? That is, whether there are certain resources that can be used to support a person to start a recovery path.⁽³⁸⁾ This aspect should be considered both for patients who are just starting to recover and those with progressive chronic PTSD.⁽³⁹⁾ The psychologist should also consider markers when studying each specific situation. They should take into account not only the situational determinants studied but also the possibilities for overcoming them. The availability of such tools will help determine the best actions for patients.

Table 3. The main steps and their description in the structure of psychological recovery

Step	Description
1. Stop	The soldier feels deep despair
2. Awareness step	The person regains control over their actions and states
3. Preparatory stage	The patient reconsiders his/her capabilities and weaknesses in order to achieve a positive result
4. Perestroika	The person is actively working on goal setting and self-determination for holistic recovery
5. The “development” step	The patient’s adaptation and the dynamics of his or her resistance become noticeable

The implementation of this programme also considers alternative approaches in modern psychological science. Various modern studies have identified the positive impact of exposure to the natural environment on the psychological well-being of military veterans. Several modern review articles suggest that exposure to the natural environment and outdoor recreation improves attention and helps fight anxiety and stress.^(40,41,42) Therefore, the study of therapeutic possibilities of recreational activities for military veterans with PTSD is particularly popular today. Recreational experiences in the outdoors are based on several modern theories, including “green exercise,” “therapeutic recreation,” “nature therapy,” or “active outdoor recreation”.⁽⁴²⁾ Such interventions in the developed programmes should be combined with psychological support from certified professionals. Accordingly, this programme was both innovative and comprehensive, considering various current trends and aspects.

The key analysis involved comparing measures before (phase 0) and after the intervention. The analysis was conducted at 2 weeks and 4 months after the psychological experiment. In this experiment, the analysis was conducted to assess the clinical significance of the findings between baseline and the 2-week intervention, as well as the 4-month follow-up. At baseline, the mean PCL-M score was 51,33, indicating acute PTSD. The PHQ-9, which corresponded to depression, was 19,01, indicating severe, in some cases moderately severe depression. GAD-7, which was responsible for anxiety, averaged 14,61, which corresponds to severe anxiety. Over the two months of the intervention, the scores decreased. In particular, the PCL-M was 33,54, the PHQ-9 was 10,83, and the GAD-7 was 9,059 (table 4).

Table 4. Comparative analysis of indicators in the period before the intervention and 2 weeks after the intervention

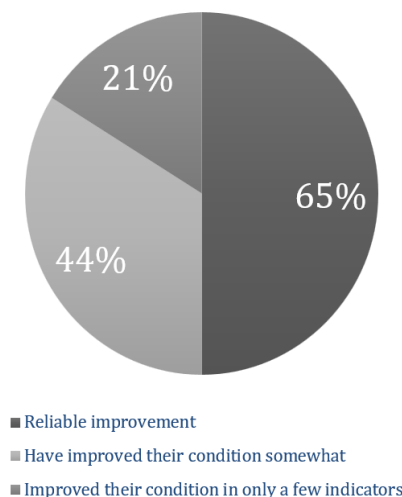
PTSD (PCL-M)	Pre-intervention	43,33	9,79 (difference)
	2 weeks post	33,54	
(PHQ-9) (Depression)	Pre-intervention	19,01	8,18 (difference)
	2 weeks post	10,83	
(GAD-7) (Anxiety)	Pre-intervention	14,61	5,56 (difference)
	2 weeks post	9,05	

After the comprehensive introduction of the recovery programmes, the 4-month follow-up analysis showed that the scores had changed slightly but not significantly. The PCL-M averaged 31,87. The PHQ-9 depression score of 12,87 indicated mild to moderately mild depression, and the GAD-7 anxiety score was 10,17, which generally indicated mild to moderate anxiety. Table 5 shows the scores from the initial and final stages of the experiment.

Table 5. Comparative analysis of all indicators

PTSD (PCL-M)	Pre-intervention	43,33	-11,46 (difference)
	2 weeks post	33,54	
	4 month post	31,87	
(PHQ-9) (Depression)	Pre-intervention	19,01	-6,24 (difference)
	2 weeks post	10,83	
	4 month post	12,87	
(GAD-7) (Anxiety)	Pre-intervention	14,61	-4,44 (difference)
	2 weeks post	9,05	
	4 month post	10,17	

For the entire sample at the 4-month baseline follow-up, it was found that 50 % of the soldiers showed a robust improvement in their condition; at the same time, 34 % improved somewhat, and 16 improved only on a few measures (see Figure 2). However, no participant reported a worsening of PTSD symptoms. In terms of overall scores, 87 % made clinically significant changes in their PTSD symptom scores. At the same time, most respondents noted that their well-being and adaptation process had improved.

**Figure 2.** Dynamics of changes in respondents' status

At the same time, the process of incompleteness of the war and the abrupt withdrawal of service members from the area of active combat operations with the expectation of a quick return, without the organisation of specific active decompression measures (i.e. in the classical sense of seven-phase debriefing as a critical measure of post-crisis intervention), can only significantly aggravate the symptoms of PTSD. However, a self-assessment of the psychological state at the end of the experiment demonstrated a significant prevalence of

positive emotional states over negative ones.

In this system of psychological rehabilitation, an important role was played by such activities as cognitive therapy, group sessions, muscle relaxation, art therapy, music therapy, and outdoor relaxation practices. The latter served as an alternative means of support and recovery for servicemen and women with PTSD. The outdoor recreational experience was based on several modern theories. They included archery, fishing, and hiking. Such interventions in the developed programmes should be combined with psychological support from certified professionals. The military personnel rated the effectiveness of such measures on a Likert scale. Relaxation practices in nature, muscle relaxation, art therapy, and music therapy were remarkably highly rated (5 points each on the Likert scale). At the same time, such measures as the integrated model of CBT, group CBT, and autogenic training received 4 points each, and biofeedback and stress management techniques received a positive assessment (3 points each). However, it is essential to note that none of the respondents rated these techniques very negatively (1 point each).

The evaluation showed a positive response from respondents about using the proposed programme. This opens prospects for further research, particularly in developing more effective individual treatment trajectories, using balanced mechanisms of pharmacological and recreational effects, etc. This makes it possible to minimise the negative manifestations of PTSD, which will allow us to make progress in overcoming this problem in the future.

The problem of overcoming the consequences of PTSD in military personnel is a relevant topic for research, given the current possibilities of pharmacology, psychotherapy, resource support, opportunities for social integration, etc. The purpose of the study was to investigate the psychosocial rehabilitation of service members with post-traumatic stress disorder. Considering existing practices and the empirical study, the author proposes to consider specific problems contributing to a comprehensive rehabilitation programme and applying its elements in practice.

The results demonstrate an assessment of the potential impact of brief outdoor recreation experiences among military veterans with diagnosed PTSD who have not received any form of psychological therapy. The results of two experiments involving local outdoor recreational interventions among peer veterans demonstrate not only the potential to motivate veterans with PTSD to participate in this approach but also its potential clinical utility. Both in the Harvey et al.⁽¹⁴⁾ study and in line with our hypotheses, veterans showed clear and sustained improvements in PTSD-related symptoms, depression, anxiety, and stress because of the experience.

DISCUSSION

The proposed study also found that the main goals of the developed programme are to eliminate potential or actual threats to combatants' mental health, integrate the individual into a usual way of life, and restore the person's status. The results confirm the opinions of scientists about the importance of a systematic psychological assessment of a serviceman's condition, as used in European armies.⁽²⁶⁾ It is also noted that implementing the programme under study considers the positive impact of the natural environment on the psychological well-being of military veterans. This confirms the study's results by C. Huitt,⁽¹⁷⁾ who pointed out the importance of involving additional recreational activities. In general, this study is in line with current trends in medical science aimed at considering additional features of psychological rehabilitation and overcoming the adverse effects of urban infrastructure,^(22,42) which is also a rather innovative approach to psychological rehabilitation.⁽²⁸⁾ The combination of traditional methods of treatment with the possibilities of additional use of the recreational environment indicates the prospect of finding further programmatic ways to overcome PTSD in military personnel.

The results indicate that psychologists should consider the markers when studying each specific situation, allowing them to determine the best actions for patients. This confirms the findings of other researchers who emphasise the importance of individualising the rehabilitation process, forming individual trajectories during therapeutic interventions, and rehabilitation with family members.^(15,34) At the same time, the research findings focus more on the possibilities of overcoming PTRS while less on possible prevention methods. Researchers emphasise the importance of developing psychological flexibility in the military at the beginning of their service, which makes it possible to build greater psychological resilience to possible challenges in the future.^(5,16) However, this point of view has not been empirically proven,⁽¹²⁾ so it is essential to continue to pay attention to the possibilities of increasing psychological resilience from a theoretical point of view.

The empirical measurements revealed that after the comprehensive introduction of recovery programmes, the 4-month follow-up analysis showed that the indicators changed slightly but not significantly. The PCL-M averaged 31,87. The PHQ-9 depression score of 12,87 indicated mild to moderately mild depression, and the GAD-7 anxiety score was 10,17, which generally indicated mild to moderate anxiety. For the entire sample at the 4-month baseline follow-up, 65 % of the soldiers were found to have made a robust improvement; at the same time, 34 % had a slight improvement, but no participants reported a worsening of their PTSD symptoms. This correlates with the findings of other researchers who have found an integrated approach to be productive

in counteracting the effects of PTSD.^(11,20) Therefore, applying the proposed programme with active recreational elements, in general, demonstrates effectiveness.

The results of the study also show that the process of incomplete warfare and the abrupt withdrawal of service members from the area of active combat operations and the expectation of a quick return, without prior organisation of decompression measures, can only significantly aggravate the symptoms of PTSD. This information has been widely discussed in contemporary studies and confirmed by another research.^(1,8,10) However, the results describe that the self-assessment of the psychological state, which was carried out at the end of the experiment, determined the prevalence of a positive emotional state over a negative one. This indicates the effectiveness of the proposed model of psychological recovery. Most researchers emphasise that positive emotions are an essential criterion for determining the effectiveness of psychological rehabilitation or adaptation.^(6,18,19) At the same time, modern research also confirms the idea that it is essential to introduce various innovative methods and forms of psychological support for the military.^(23,30) In the defined programme, activities such as group sessions, cognitive therapy, muscle relaxation, art therapy, music therapy, outdoor relaxation practices, etc., played an important role. The scientific community has different points of view regarding implementing green therapeutic measures. However, modern scholars increasingly agree that these measures are essential and even effective.^(29,25) Such interventions should be combined with psychological support from professional psychologists in the developed programmes. The respondents' effectiveness assessment demonstrated a high appreciation for outdoor relaxation practices, muscle relaxation, art therapy, or music therapy. The importance and effectiveness of the integrated model of CBT, group CBT, autogenic training and other techniques were also demonstrated. These psychological rehabilitation forms demonstrate the importance of conducting systematic, comprehensive programmes to develop external and internal indicators. This idea is confirmed in several modern works that describe the role of family and close environment in the recovery of those who have been in the combat zone.^(35,36,31)

The methodology used in this study has certain limitations. First, the scientific literature used for the analysis is written in English, and articles and monographs have been properly peer-reviewed and published in professional publishing houses and journals. At the same time, this does not deny the possibility that certain publications that are not in English have been overlooked. Although the study was mainly based on statistical calculations and surveys, this would have given more room for comparisons of different experiences dealing with the consequences of the PTRS. In addition, using the Likert scale (from 1 to 5) is only sometimes a reliable tool due to the subjectivity of the assessments. Thus, it is worth pointing out the possible subjective assessments expressed during the surveys, which may also introduce a slight correlation in the results, requiring a balanced interpretation in the future. In the future, it is worthwhile to develop a psychological rehabilitation programme with a greater emphasis on using innovative green practices. This will demonstrate how practices that are popular in the rehabilitation of people with PTSD in other countries can be used in real Ukrainian situations.

CONCLUSIONS

According to the developed program, the fight against post-traumatic stress disorder requires an approach that includes professional help, support from loved ones and self-reflection. It should begin with a motivational period, during which psychologists should eliminate negative attitudes towards communication. In the initial period, it is also necessary to provide ongoing support for information through psychoeducation. The psychotherapeutic period is the main period during which it is proposed to introduce various techniques: CBT, group CBT, muscle relaxation, biofeedback, stress management, art therapy, music therapy, logotherapy, outdoor relaxation methods, etc. According to pilot testing of program recreational exercises in the open air, tourism and outdoor activities must combine with specialists' psychological support. Therefore, the comprehensive rehabilitation programme considers such innovative experiences, current trends and aspects of therapeutic intervention development. The comprehensive implementation of this programme during the first 2 weeks demonstrated an improvement in terms of a decrease in PTSD symptoms (by 9 points in total). In addition, PHQ-9 scores decreased to 12,87, indicating mild to moderate depression, and GAD-7 scores decreased to 10,17, which corresponded to the general scale of mild to moderate anxiety. After 4 months, the scores increased slightly but not significantly. This demonstrated the importance of implementing this alternative comprehensive approach for the psychological rehabilitation of servicemen and women with PTSD. A promising area for further research is the possibility of introducing preventive psychological training for service members to increase their stress tolerance and reduce the destructive impact of psychological trauma.

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