

# Compliance with the NATO Standards in the Field of Psychological Assistance for the Servicemen with Post-Traumatic Stress Disorder

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**Abstract:** The increasing number of the servicemen with post-traumatic stress disorder (PTSD) as a result of the war raises the problem of providing them with psychological assistance among the top priorities at the national level. *The aim* of the study is to identify the effectiveness of using NATO standards in the system of psychological assistance to the servicemen with PTSD.

*Methods:* The study employed the Mississippi Scale, Impact of Event Scale (IES-R), Hospital Anxiety and Depression Scale (HADS). The statistics were processed using descriptive statistics, analysis of variance, Student's t-test for independent samples.

*Results:* The study showed that 20.28% of the servicemen had a high level of PTSD. They have pronounced symptoms of intrusion, avoidance, hyperarousal, high anxiety, and depression. It was established that the use of NATO standards of psychological assistance to the servicemen with PTSD is reliably effective in reducing symptoms of intrusion ( $t=2.53$ ,  $p\leq 0.01$ ), avoidance ( $t=3.22$ ,  $p\leq 0.01$ ), excitability ( $t=4.18$ ,  $p\leq 0.01$ ), anxiety ( $t=4.56$ ,  $p\leq 0.01$ ), and depression ( $t=3.87$ ,  $p\leq 0.01$ ). *Conclusions.* The problem of the occurrence of PTSD and symptoms of the disorder among the servicemen participating in military operations was confirmed. It was proved that the use of NATO standards in the training and psychological assistance to service men is effective in reducing the PTSD level and its symptoms.

*Prospects:* The obtained results are significant for military psychologists who work directly with the servicemen in warfare and can use the obtained data for early intervention to prevent the occurrence of PTSD.

**Keywords:** Stress syndrome, traumatic event, anxiety, depression, social adaptation, psychological rehabilitation.

## 1. INTRODUCTION

With the beginning of a full-scale invasion of the territory of Ukraine, thousands of Ukrainians stood up to defend their country at the cost of their own health and lives. Mobilization is still ongoing and all servicemen who took part in military operations need active psychological support in the early stages of returning to peaceful life. This makes the issue of psychological assistance to such servicemen critically necessary and urgent.

In a state of war, military psychologists and centres for servicemen should focus on providing primary care, the effectiveness of which ensures further rehabilitation of injured servicemen [1]. It is also appropriate to note that today the psychological support and assistance provided to servicemen affected by the war in Ukraine is still fragmentary. A single base of psychological

support has not been created, only separate centres and public associations. Besides, servicemen can have severe physical and psychological trauma effects, including post-traumatic stress disorder (PTSD), which are difficult to detect in the early stages. According to the researchers, PTSD symptoms are characteristic of 30-35% of servicemen who participated in combat operations [2], in some studies it is 20% [3] and 14-20% [4]. PTSD negatively affects the mental state of servicemen, their relationships with loved ones, and reduces social adaptation [5]. Untimely treatment of PTSD leads to severe health consequences and sometimes to suicide [6]. Moreover, on a par with psychological and social problems, PTSD is an additional criminogenic factor, as it contributes to alcoholism and illegal behaviour [7].

According to confirmed data, psychological help is more effective in reducing the manifestations of PTSD than pharmacological treatment [8]. When providing psychological care to servicemen with PTSD, it is

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important to consider the complex effects of co-occurring mental and physical health symptoms, which will ensure the effectiveness of rehabilitation [9]. Therefore, there is an urgent need to provide psychological assistance to servicemen who took direct part in hostilities and were traumatized, with the aim of improving their psycho-emotional state and well-being in general. Compliance with NATO standards in the field of psychological assistance to servicemen with PTSD is effective [10]. The recommendations and standards developed by the North Atlantic Alliance make it possible to prepare the servicemen for stressful situations, for captivity, develop their psychological resistance to the possible consequences of physical injuries. Such training is especially necessary in the conditions of a brutal war, when there is constant pressure from the enemy, constant shelling and a threat to life [11]. By learning NATO standards, every serviceman will know the rules of behaviour in threatening situations and will be able to provide help to himself [12]. It is particularly important that PTSD has a long-lasting effect and may manifest some time after the immediate trauma [13]. Therefore, not only the professional help of psychologists is important under such circumstances, but also the psycho-emotional ability of the serviceman himself to control his condition and seek help in time [14]. Although, according to researchers, most servicemen do not seek assistance or receive a minimum assistance, believing that they can cope with PTSD on their own [15]. This suggests that a high percentage of servicemen do not seek assistance and therefore do not receive proper treatment. This makes the problem of creating a single system of psychological training and psychological assistance for military personnel during the war particularly urgent.

The aim of the study is to identify the effectiveness of using NATO standards in providing psychological assistance to the servicemen with PTSD. The aim involves the fulfilment of the following research objectives:

- Identify signs and symptoms of PTSD in the servicemen;
- Study the manifestations of anxiety and depression in the military;
- Determine the effectiveness of using NATO standards in the structure of psychological assistance to the servicemen with PTSD.

The research hypothesis was advanced based on the aim and objectives: the use of NATO standards in providing psychological assistance is effective in reducing the level of PTSD, thereby enabling to reduce the level of PTSD and its symptoms.

## 2. LITERATURE REVIEW

Post-traumatic stress disorder (PTSD) is a psycho-emotional disorder that arises as a result of a traumatic situation and can manifest immediately or after a long time. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR), PTSD is characterized by 4 types of symptoms: intrusive memories, avoidance, changes in mood and cognitive processes, hyperarousal (aggression, hostility). These symptoms can be diagnosed when they persist for more than 1 month and cause functional impairment [4].

PTSD can occur in all people equally against the background of stressful traumatic events. But this disorder is most characteristic of military personnel who participated in combat operations [16]. In particular, the duration of participation in combat operations can also affect the occurrence of PTSD [17]. PTSD leads to health problems due to changes in cognitive functions [18]. Under such conditions, servicemen are not able to independently determine their condition and feelings, therefore, in most cases, they do not seek assistance in time. PTSD in servicemen may be additionally caused by physical injury or physical illness [19].

Common symptoms of PTSD include memory impairment and re-experiencing the trauma. If not successfully treated, they exacerbate other symptoms of the disorder [8]. Servicemen with PTSD experience helplessness and general distress in the face of long-term mental health symptoms associated with traumatic exposure, co morbidities [9]. Many of them try to cope with the disorder on their own by resorting to avoidance strategies (e.g., isolation from others, self-blame) or self-treatment of stress with alcohol and other substances [15].

Despite the severity of the course of PTSD, servicemen who have received special psychological assistance have improvements in their psychological state [1]. Many researchers note the effectiveness of using "memory consolidation/reconsolidation therapy" (MEMREC) [20], "trauma-focused" psychotherapy [11] in helping military personnel with PTSD, virtual reality exposure therapy (VRET) [3]. These methods make it possible to provide emergency psychological

assistance in the early stages of psychological rehabilitation.

The most effective way to provide psychological help to military personnel with PTSD is to use NATO standards, particularly at the stage of military training. They are a set of training measures for behaviour in extreme conditions [21]. In accordance with these standards, servicemen undergo initial training, which ensures the formation of mental resistance to stressful situations and self-help skills in such situations [22]. This makes it possible to increase the stress resistance of personnel, to ensure the success of psychological rehabilitation after participation in combat operations.

According to the Standards of Psychological Training in the Armed Forces of Ukraine [23], which are created on the basis of NATO standards (STANAG 2565, STANAG 7225, STANAG 7226, STANAG 7229), the main methods of mental self-regulation of the military include: emergency psychological self-help, the formation of psychological stability of the military in the course of overcoming an obstacle course, during the fight against the enemy's armoured vehicles, during artillery fire and psycho-traumatic factors of hostilities.

The main directions of psychological assistance provided by the NATO standards include: psychological awareness, psychological examination, and decompression [24]. Psychological awareness is the formation of the emotional intelligence of servicemen, their stress resistance, emotional and volitional self-control at the stage of preparation for combat operations [25, 26]. Psychological examination is a set of diagnostic methods that make it possible to detect certain psychological disorders of servicemen after participating in combat operations. Decompression is the first step in helping military personnel in a state of stress. It consists of a complex of methods of physical and psychological recovery of the body. The main goal is the gradual readaptation of servicemen to society and peaceful life, minimizing psychological trauma [10]. The optimal model of decompression involves the gradual removal of psychological tension in military personnel who participated in combat operations and the development of their self-control [12].

An important aspect of this training is providing military personnel with knowledge about psychological injuries, their consequences, methods of prevention and treatment [22]. This helps to reduce the risk of developing mental disorders in those mobilized during and after hostilities. The main types of psychological

preparation are trainings, simulation exercises, practical classes [27].

At the same time, specialists who provide assistance to servicemen with PTSD need to consider not only the importance of social support for them, but also monitor the quality of the received support [28]. In case of refusal to receive psychological assistance by servicemen with PTSD, the main strategy for increasing the effectiveness of their support is active involvement in the therapeutic process [29].

So, PTSD is a common consequence of military combat. This disorder can appear immediately after returning, or it can be observed several months later. Therefore, an important task is to identify and treat PTSD using international training standards, in particular NATO standards.

### **3. METHODS**

#### **3.1. Research Design**

The study was conducted in the period from October 2023 to January 2024 in 5 stages. The first stage involved a theoretical and methodological review of the problem, the selection of diagnostic tests in accordance with the aim and objectives of the research. During the second stage, military personnel were diagnosed with signs of PTSD and negative emotional states. The third stage included the processing and interpretation of the obtained results, its quantitative and qualitative analysis. The fourth stage involved the provision of psychological assistance to the servicemen in accordance with the NATO standards. At the fifth stage, a statistical analysis was conducted to identify the effectiveness of using NATO standards in the psychological rehabilitation of servicemen with PTSD.

#### **3.2. Sampling**

The study involved 260 servicemen aged 25 to 50 who participated in military operations: 40 women and 220 men. The study was conducted at the Kyiv City Crisis Centre "Socio therapy" (Kyiv). The servicemen are clients of this institution who undergo psychological rehabilitation after participating in hostilities. The study included servicemen regardless of age, gender, military rank, and health status. All of them received psychological assistance according to the NATO standards, which included a psychological examination, psychotherapeutic sessions (8-10 sessions) and

training sessions for the formation of psychological resilience.

### 3.3. Methods

Signs of PTSD were identified in servicemen using the Mississippi Scale for Combat-Related PTSD. The scale was developed in 1987 by Keane, T. for diagnosing post-traumatic stress disorder in servicemen who participated in the war [29]. The scale contains 35 questions and their answers on a 5-point Likert scale. The total index can vary from 35 to 175 points.

The Impact of Event Scale (IES-R) was used to identify the predominant symptoms of PTSD in the servicemen. The scale was developed by M. Horowitz in 1979. The test includes 22 questions with a 5-point answer system and 3 subscales are distinguished: intrusion, avoidance, and hyperarousal.

Hospital Anxiety and Depression Scale (HADS). The scale was developed in 1983 by A.S. Zigmond, R.P. Snaith and allows screening for anxiety and depression. When forming the HADS scale, the authors included only those symptoms that relate directly to the psycho-emotional state.

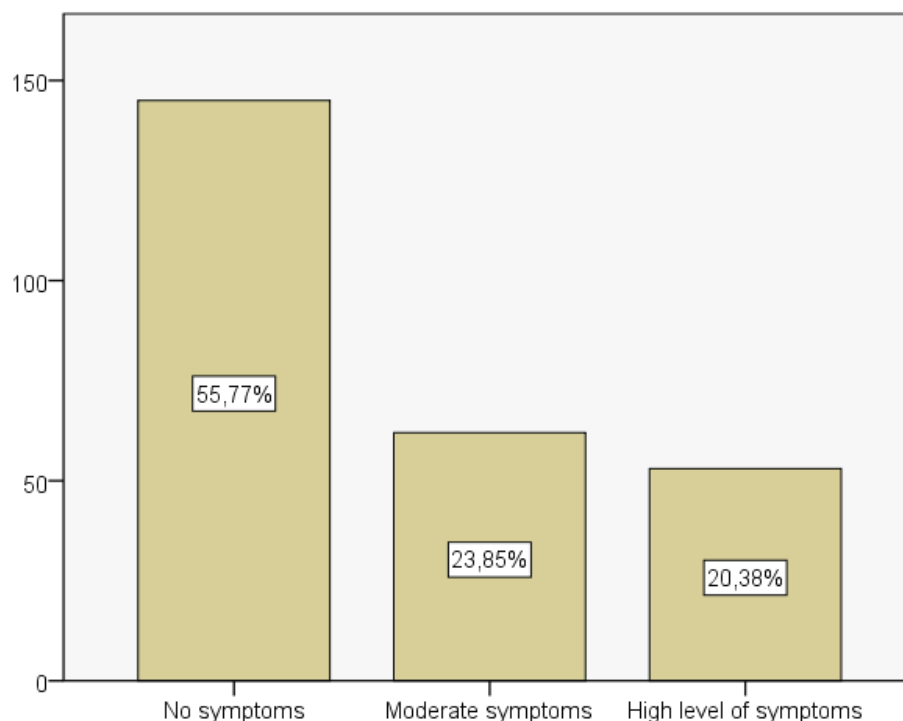
All calculations were performed using Microsoft Excel and SPSS 22.0. Statistical analysis included

descriptive analysis, Student's t-test. Descriptive statistics made it possible to present average test results and standard deviations values. The Pearson correlation coefficient was used to identify the relationship between PTSD and the emotional states of military personnel. Student's parametric test for independent samples was used to establish a significant shift in the indicators of the subjects before and after the completed program.

### 4. RESULTS

The obtained results made it possible to identify the servicemen with different levels of PTSD (Figure 1).

It was established that almost half of the servicemen have no signs of PTSD. At the same time, respondents with a moderate and high level of PTSD were identified. Signs of an average level of PTSD are characteristic manifestations of hyperarousal or increased fatigue, lack of activity, concentration of thoughts on traumatic events. However, such signs are rare and cannot confirm the severity of PTSD. But those servicemen who have a high level are characterized by the constant experience of traumatic events in the form of nightmares, which are accompanied by negative emotions and pronounced somatic reactions. Constant tension leads to exhaustion of the body, loss of control, violation of interpersonal communication with others.



**Figure 1:** Frequency distribution of the servicemen according to the level of PTSD.

The study revealed PTSD symptoms among the servicemen with different levels of PTSD (Table 1).

The obtained results indicate that low levels of intrusion, avoidance, and hyperarousal symptoms predominate in servicemen with low levels of PTSD. In the military, who have a moderate level of PTSD, indicators of symptoms of intrusion, avoidance, and hyperarousal are within the normal range. But servicemen with high levels of PTSD tend to have high rates of intrusion, hyperarousal, and avoidance. This suggests that military personnel with PTSD have constant intrusive thoughts about traumatic events, nightmares, memories with negative emotions. They seek to escape from constant thoughts about a stressful situation and trauma. They try to switch to another type of activity to forget, but it is difficult for them to do so. High levels of hyperarousal indicate the predominance of such emotional reactions as anger, aggression, hostility to others, mistrust, in some cases feelings of guilt and low self-esteem because of the inability to cope with such a condition independently.

The research revealed indicators of anxiety and depression, which are direct signs of PTSD (Table 2).

The obtained data showed that the servicemen with low and moderate levels of PTSD have low values of anxiety and depression. At the same time, the servicemen with high levels of PTSD have high levels of anxiety and depression. These emotional states are concomitant signs of PTSD and indicate loss of interest in life, low mood, alertness, and constant emotional discomfort. This leads to deep immersion in oneself, the inability to build relationships with other people.

Correlation analysis showed the presence of a direct relationship between PTSD and its symptoms and emotional states (Table 3).

It was found that PTSD has a direct positive relationship with anxiety and depression. In particular, symptoms of intrusion, avoidance, and excitability have highly direct associations with anxiety and depression. That is, the greater the manifestations of PTSD and its symptoms, the higher the anxiety and depression in the military.

PTSD and its symptoms were re-diagnosed after the use of the NATO standards in psychological care for the servicemen. It was established that the number

**Table 1: Indicators of Symptoms of PTSD in the Servicemen (N=260)**

PTSD level	PTSD symptoms					
	intrusion		avoidance		hyperarousal	
	M	SD	M	SD	M	SD
Low level of PTSD (n=145)	6.81	3.5	7.21	2.8	7.42	2.99
Moderate level of PTSD(n=62)	8.75	2.67	11.43	3.86	12.81	4.53
High level of PTSD(n=53)	26.62	1.79	20.81	3.25	23.56	2.69

**Table 2: Rates of Anxiety and Depression in the Servicemen with PTSD (N=260)**

PTSD level	Anxiety		Depression	
	M	SD	M	SD
Low level of PTSD(n=145)	6.59	1.61	6.22	1.92
Moderate level of PTSD(n=62)	7.71	1.50	7.50	1.65
High level of PTSD(n=53)	11.23	2.56	11.94	2.28

**Table 3: Correlation Analysis of the Relationship between PTSD Indicators and Military Anxiety and Depression**

PTSD/ symptoms	Anxiety	Depression
PTSD	0,784**	0,825**
Intrusion	0,801**	0,608**
Avoidance	0,677*	0,815**
Hyperarousal	0,527*	0,713**

\*\* - correlationcoefficientsfor  $p \leq 0.01$ , \* - correlationcoefficientsfor  $p \leq 0.05$ .

**Table 4: The Effectiveness of using the NATO Standards in Reducing PTSD Symptoms in the Servicemen (N=260)**

	Mean + SD	Mean + SD	T	p-value	Cohen's d
PTSD	81.69±31.88	57±27.69	3.12	0.000	0,83
Intrusion	11.35±8.32	8.19±3.26	2.53	0.002	0,65
Avoidance	10.98±5.47	7.32±2.94	3.22	0.000	0,91
Hyperarousal	11.63±4.78	6.37±1.98	4.18	0.000	0,89

**Table 5: Effectiveness of using the NATO Standards in Psychological Assistance to the Servicemen with PTSD (N=260)**

	Mean + SD	Mean + SD	T	p-value	Cohen's d
	8.83±2.54	5.11±1.69	4.56	0.000	0,76
Depression	10.16±3.09	6.22±1.87	3.87	0.000	0,85

of the servicemen with a high level of PTSD has significantly decreased (Table 4).

According to the obtained data, we can see that the indicators of the PTSD and PTSD symptoms have significantly decreased among the servicemen, all changes are statistically significant ( $p \leq 0.01$ ). Only the symptom of invasion has a slightly lower significance, although it is also statistically significant ( $p \leq 0.05$ ). This can be explained by the fact that even in the situation of improvement of the emotional state and decreased level of PTSD, traumatic memories remain characteristic of the servicemen for many years. Therefore, even such a reduction of this symptom is quite significant in improving the psychological state of the servicemen.

Changes in the indicators of anxiety and depression of the servicemen were also revealed (Table 5).

A repeated study revealed a statistically significant ( $p \leq 0.001$ ) decrease in anxiety and depression. This indicates that the military's negative experiences have decreased, work capacity has increased, and self-control mechanisms have been formed. Decreased signs of anxiety and depression indicate the normalization of the emotional state, the restoration of the body's adaptive capabilities, and the mobilization of internal resources.

The conducted research made it possible to establish that the use of the NATO standards in the process of providing psychological assistance is effective in reducing the level of PTSD and its symptoms.

## 5. DISCUSSION

The obtained results showed that a fifth of the studied servicemen had a high level of PTSD after participating in hostilities. They are characterized by such symptoms as constant intrusive thoughts about traumatic events, flashbacks, sleep disturbances, and night terrors. Most of them try to avoid these memories and talking about them, but this only worsens the state of hyperarousal, which is expressed in aggression, anger, and hostility towards others. PTSD and its symptoms were found to be direct predictors of anxiety and depression, as evidenced by correlational analysis. The use of the NATO standards in the providing psychological assistance to the servicemen made it possible to improve their psycho-emotional state and reduce the manifestation of PTSD symptoms.

The obtained results correspond to previous studies, which found that PTSD is a negative factor in the physical and mental health of servicemen [4]. Approximately 15 months after participating in combat operations, almost 91% of veterans have PTSD symptoms: sleep disorders, intrusive memories, headaches, emotional instability [28]. Similar to our study, [24] demonstrated that PTSD is a characteristic disorder of wartime military personnel and requires urgent attention for improved diagnosis, treatment, and support. The main PTSD symptoms in the service men are intrusive memories, emotional agitation, depression, and anxiety [7]. In most cases, the servicemen with PTSD have pronounced symptoms: depression, substance use, non-suicidal self-injury, and suicidal thoughts, as well as low mental, cognitive, and physical activity [31]. However, most of them do not seek help on their own, which greatly complicates the

rehabilitation process, and the loss of precious time worsens their mental state [32, 33]. In these conditions, depression and anxiety as the main symptoms of PTSD are supplemented by antisocial factors of behaviour: alcohol abuse, victim behaviour, and impaired social adaptation [15].

The obtained results also confirm previous studies, which found that approximately one-third of veterans after receiving psychological care experienced an improved mental state and reduced PTSD symptoms [8]. It was found that the sooner servicemen receive psychological assistance, the greater the chance of reducing PTSD symptoms and putting it into long-term remission [9].

In accordance with our results in [8] and [24], it is noted that PTSD causes negative emotional experiences. In particular, anxiety and depression are key among them. From this, we can see that the negative impact of PTSD is proven and requires active intervention to support the military psychologically.

Some studies on the predictors of PTSD in servicemen proved that such factors as older age, previous illnesses, and a low level of social support influence the occurrence of PTSD. This makes servicemen more vulnerable to PTSD [15]. These conclusions emphasize the importance of preliminary training of the military for combat operations, using a system of standards that allows 80% to form stress resistance, emotional lability, and volitional self-control in them [34].

PTSD symptoms have been shown to decrease among servicemen who received NATO-standard psychological care, despite increased social isolation, physical illness, and the emotional consequences of PTSD [35]. These findings suggest that psychological support according to the NATO standards in the early stages after return from combat operations provides an effective reduction of negative symptoms of PTSD in servicemen. In their study [6], observed a significant improvement in quality of life in the majority of servicemen with PTSD who received a course of psychological assistance. At the same time, according to the authors, after receiving psychological help, approximately two-thirds of servicemen with PTSD still experience the lingering effects of this disorder [6].

Research has also found that military personnel are more likely to discontinue treatment before their condition improves. However, the use of the NATO

standards in their psychological rehabilitation minimizes the negative manifestations of traumatization in the initial stages [36]. It is believed that psychological care in addition to decompression should include at least 8 counselling and therapeutic meetings for the maximum effect of reducing PTSD symptoms [29, 37].

The obtained results indicate that, on average, a third of servicemen who took part in hostilities have PTSD symptoms. About 15-20% of these symptoms may appear within a year after the end of the military service. Therefore, the importance of early diagnosis of PTSD and psychological assistance to servicemen is the main condition for reducing the symptoms of the disorder. The system of the NATO standards in the training of the servicemen ensures maximum effectiveness in preventing and overcoming PTSD.

## **6. CONCLUSIONS**

The conducted research showed that PTSD is a negative factor of violation of the personal balance of the servicemen, which affects further adaptation to society and peaceful life. The use of the NATO standards in psychological care is, however, an effective means of restoring mental health and improving the well-being of servicemen. Such results are valuable for military psychologists working with servicemen who have participated in combat operations. They prove the effectiveness of the standards and the necessity of their introduction into the general system of psychological rehabilitation of servicemen injured during the hostilities. Large-scale application of the obtained results will make it possible to reduce the level of PTSD in military personnel participating in military operations. And also to train more resilient fighters capable of self-control and overcoming PTSD. This is useful at the national level, as it will strengthen the strength of the Ukrainian army as a whole.

The limitation of the study is that a unified system of providing psychological services to servicemen participating in hostilities has not yet been created. Therefore, identifying PTSD is difficult, as it has a period of manifestation from 2 to 6 months. It is sometimes impossible to detect PTSD in the early stages without specialist examination. Moreover, when diagnosing PTSD, such factors as age, experience, intensity of hostilities, and possible injuries should be taken into account. They can exacerbate trauma and contribute to PTSD. An additional problem is the servicemen's early refusal of psychological assistance,

which hinders the effective reduction of PTSD symptoms. At the same time, the duration of the war does not make it possible to conduct a comparative and longitudinal study to reveal the dynamics of changes in PTSD and the effectiveness of its treatment, which can be used in future studies.

The prospects of the research are the study of the impact of additional factors on the occurrence and course of PTSD in the military. This will make it possible to more comprehensively implement NATO standards in the development of a system of psychological assistance to servicemen who took part in hostilities. In the future, it will be helpful to conduct a longitudinal study, which will probably show a qualitative shift in overcoming PTSD through the use of modern NATO standards.

### AUTHORS' CONTRIBUTIONS

All authors contributed equally to data analysis, drafting, and revising of the paper and approved this work.

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### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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