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PSYCHOLOGICAL STATE OF WAR VICTIMS IN UKRAINE: ASSESSMENT OF STRESS REACTIONS AND PSYCHOPATHOLOGICAL SYMPTOMS

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Abstract. The psychological analysis of the victims' condition is an important tool for understanding and determining the peculiarities of the impact of traumatic events on the human psyche (Bondarchuk, 2016: 11–14). This study examined the psychological aspect of the state of survivors of traumatic events, focusing in particular on reactions, adaptation mechanisms and possible ways to restore the mental health of military personnel, people from the temporarily occupied territories and internally displaced persons (IDPs). The study involved 250 (45.5%) servicemen and 300 civilians (110 people from the temporarily occupied territories and 190 people from IDPs) with various psychological symptoms. The psychological states were assessed using the Posttraumatic Stress Disorder (PTSD) Self-Assessment Scale and the Mississippi Posttraumatic Stress Disorder Scale (Hryshchenko, 2022: 166–180). Levels of anxiety were measured using the Beck Anxiety Scale, the Hamilton Anxiety Scale (HAM-A) and the PHQ-9 Patient Health Questionnaire were used to assess levels of anxiety and depression, revealing significant levels across all study groups. Further research is needed to improve the methods of medical and psychological rehabilitation aimed at improving the psychological state of war victims.

Key words: psychological state, depression, stress, anxiety, PTSD, stress reactions, psychopathological symptoms.

Introduction. The war in Ukraine has a significant impact on the psychological state of the population, causing the development of stress reactions and psychopathological symptoms in victims. The study of this problem is an important aspect of modern psychology, as the consequences of war include a wide range of psychological problems, such as post-traumatic stress disorder (PTSD), depression, anxiety disorders and other psychopathological conditions (Blinov, 2019: 22; Xue, 2015: 1–21). An analysis of the global scientific literature shows the importance of a comprehensive approach to the study and treatment of these conditions.

The purpose of the study is to assess the psychological state of victims of the war in Ukraine, in particular, to evaluate stress reactions and psychopathological symptoms. An important aspect is to identify effective methods of overcoming psychological trauma that can be used in crisis situations during the war, in particular, using the cognitive behavioural approach.

Research studies conducted in different countries that have experienced military conflicts show the effectiveness of medical and psychological rehabilitation in the treatment of post-traumatic experiences, which can reduce the intensity of PTSD symptoms, anxiety and depression, and improve the quality of life of victims. For example, studies conducted in the United States, Israel and the United Kingdom demonstrate positive results of implementing medical and psychological rehabilitation for veterans and civilians who have experienced military conflicts (Born, 2019: 145–156; Crocq, 2000: 47–55).

Research by scientists in Jerusalem shows that during war, the human psyche can react with moderate and temporary stress to severe mental trauma, which has serious negative health consequences, including depression, substance abuse and PTSD. Research by American scientists also confirms that the traumatic events of war can have a lasting impact on people's health and well-being. A project by researchers from Ohio (USA) shows that most war survivors gradually adapt to the new reality and recover (Forbes, 2019: 95–110). Some of them even feel elated in response to stressful circumstances, as if discovering a "second wind". This phenomenon is explained by Hobfall's theory, according to which trauma can lead to both the loss and acquisition of important resources. Thus, it can be expected that exposure to war can contribute to a deeper understanding of the value of life, which in turn can increase achievement and life satisfaction.

In Ukraine, according to the Order of the Ministry of Health No. 2118 of 13.12.2023 "On the Organisation of Psychological Assistance to the Population", various measures are provided for the provision of psychological assistance to servicemen and women. These measures include individual counselling, group psychological therapy, emergency (crisis) psychological assistance, crisis psychological counselling and an integrative approach. The purpose of these measures is to effectively overcome psychological trauma, reduce distress and improve the psychological state of servicemen and women, which will allow them to better perform their duties (Order "On the organisation of providing psychosocial assistance to the population", 2023).

The main part

The aim of the study is to assess the psychological state of victims of the war in Ukraine, in particular, to evaluate stress reactions and psychopathological symptoms.

Objectives of the study:

1. To study the prevalence and severity of PTSD disorders among victims.
2. Identify levels of anxiety and depression in different categories of victims.
3. To analyse the difference in psychopathological symptoms between military personnel, prisoners of war, and internally displaced persons.
4. To assess the effectiveness of existing methods of psychological assistance for victims.

Materials and methods of the study. When selecting a set of methods, the principles of ease of use, complementarity, accessibility, speed of implementation and reliability of results were followed (Krushelnytska, 2006: 206). *The* questionnaires were finalised based on the analysis of the literature, taking into account the requirements of healthcare during martial law (Horachuk, 2012: 23).

At this stage, to analyse the psychological aspects of the state of victims of the war in Ukraine, the following research methods were developed and defined: psychodiagnostic methods: "Scale for self-assessment of post-traumatic stress disorder (PTSD). PCL-M and PCL-C" (Weathers, 2013), the Mississippi Scale for Posttraumatic Stress Disorder (Mississippi Scale) (Keane, 1988: 85–90), the Beck Anxiety Scale (Hryshchenko, 2022: 166–180), the Hamilton Anxiety Scale (HAM-A) (Kessler, 2005: 617–627), and the PHQ-2 (two-item depression self-assessment scale).

Research results and discussion. The study involved 550 people, including 200 military personnel (36.3%), 50 prisoners of war (9.2%), 80 adults (14.5%) and 30 children (5.5%) who had spent some time in the temporarily occupied territories and 120 adults (21.8%) and 70 children (12.7%) internally displaced persons or refugees.

All cases of psychological conditions were characterised by various stress reactions and psychopathological symptoms.

The findings confirm the need for systematic psychological support for war victims. The introduction of psychological and medical therapy at the state level can significantly improve the psychological state of victims, reduce stress and improve their quality of life. At the same time, the study showed the need to develop new approaches and improve existing methods of psychological assistance, taking into account the specifics of the Ukrainian context.

The developed recommendations include the integration of psychotherapeutic methods with social support and medical treatment, the introduction of a system of regular monitoring of the psychological state of victims and the expansion of access to psychological assistance for all categories of victims, including children and internally displaced persons.

Replication of this study is possible provided that the methods and principles of the study are followed. Let's consider and compare the symptoms of PTSD among military personnel and civilians affected by the war (see Fig. 1).

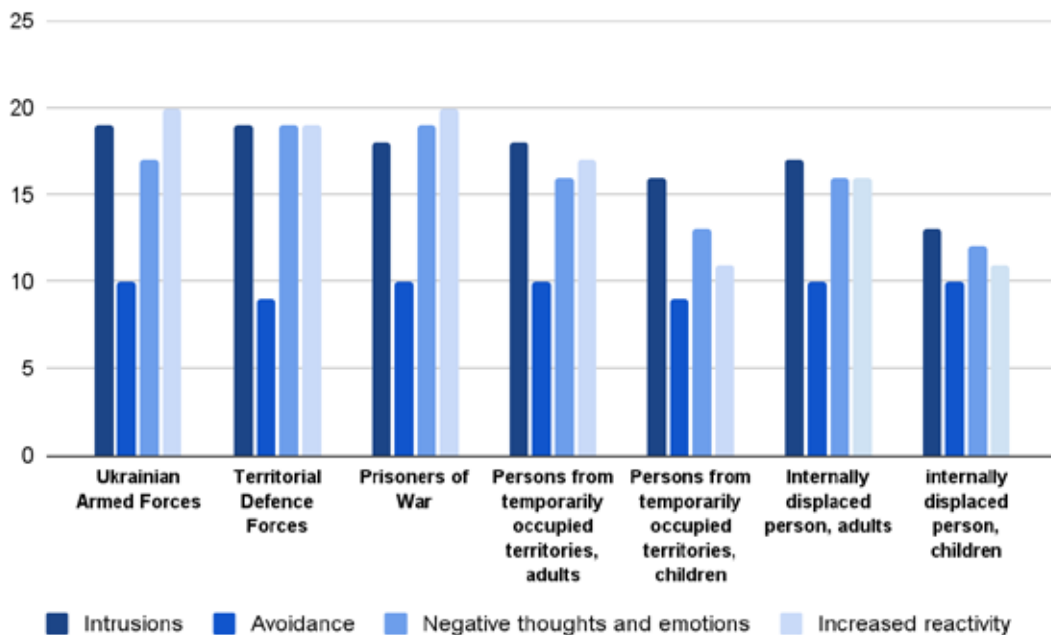


Fig. 1. Comparison of PTSD symptoms among military personnel and civilians

The correlations of PTSD between military personnel and civilians showed no significant differences. When comparing military personnel and civilians, it is possible to determine that average scores and severity of PTSD symptoms tend to differ. Servicemen and women who survived captivity have a higher mean score, indicating more severe PTSD symptoms than other groups. In the civilian population (people from the temporarily occupied territories and IDPs), although the average scores are also high, they show some differences in the level of symptoms. Such a comparison allows us to identify the specifics of the mental state of different population groups and can serve as a basis for developing effective psychological support programmes.

The clinical manifestations of PTSD were also studied using the Mississippi Scale for Posttraumatic Stress Disorder (Mississippi Scale) (Keane T. M., 1988, pp. 85–90). The results of the peculiarities of adaptation of the AFU and TDF servicemen, prisoners of war and civilians (persons from the temporarily occupied territories and IDPs) are presented in Table 1.

72.2% of the AFU servicemen had a sufficient level of adaptation, 14.2% have problems with adaptation and need medical and psychological support in medical institutions that do not specialise in psychiatry, and 13.6% need to consult a psychiatrist to confirm the diagnosis of PTSD and appropriate treatment. Servicemen and women in the TDF have 67.7% of a sufficient level of adaptation, and 17.9% have severe adaptation disorders. And 14.5 per cent of the servicemen of the TDF have significant adaptation disorders and PTSD. Among prisoners of war, the highest rates of adaptation

Table 1

Peculiarities of adaptation of the AFU and TDF servicemen, prisoners of war, persons from the temporarily occupied territories and IDPs

Those affected	Sufficient level of adaptation	Severe adaptation disorder	Adaptation significantly impaired, PTSD
Servicemen of the Armed Forces of Ukraine	72,2%	14,2%	13,6%
Military personnel of the TDF	67,6%	17,9%	14,5%
Prisoners of war	59,9%	22,4%	17,7%
Persons from the temporarily occupied territories	Adults	73,4%	14,7%
	Children	90%	5,9%
IDPS	Adults	74,3%	16,5%
	Children	98,3%	1,7%

disorders and PTSD were found – 17.7%, with 22.4% having severe disorders. A sufficient level was found in 59.9% of prisoners of war. Among the civilian population, the rates of adaptation disorders and PTSD are lower. A sufficient level of adaptation among adults from the temporarily occupied territories and IDPs was 73.4% and 74.3%, respectively. Severe adaptation disorders were detected in 14.7% of adults from the temporarily occupied territories and 16.5% of IDPs. Signs of significant adaptation disorders and PTSD among adults from the temporarily occupied territories and IDPs were observed in 11.9% and 9.2% of the victims. Indicators of adaptation disorders and PTSD were found only in children from the temporarily occupied territories – 3.1%. A sufficient level of adaptation was found in children from the temporarily occupied territories (90%) and IDPs (98.3%), while children from the temporarily occupied territories (5.9%) and IDPs (1.7%) had severe adaptation disorders. Statistical analysis of differences in adaptation using the Mann-Whitney U-test showed no significant differences in the level of adaptation of military personnel and civilians ($p > 0.05$).

An analysis of the study results using the Beck Anxiety Inventory (see Appendix B), which effectively measures anxiety as a symptom of an anxiety disorder, showed significant differences in BAI scores between military personnel and civilians. These differences were particularly pronounced in those suffering from anxiety-phobic or anxiety-depressive syndrome (see Table 2). It was found that with increasing duration of stress, the level of anxiety in patients with anxiety disorders increases. As a result, anxiety becomes "chronic", which can have a negative impact on both satisfaction with medical care and health-related quality of life.

Low levels of anxiety according to the Beck Anxiety Scale were observed in 23 (4.1%) of the TDFal number of patients, including AFU, TDF and POWs (2 (0.4%) each). Among the civilian population, 15 (2.7%) IDP children and 9 (1.6%) people from the temporarily occupied territories had low levels of anxiety. In adults from the temporarily occupied territories and IDPs, low levels of anxiety were observed in 12 (2.1%) and 14 (2.5%) people, respectively. Mild anxiety was detected in 127 victims. The highest number of patients with this level of anxiety among the military was among the TDF servicemen – 13 (2.4%), and among the civilian population – among IDPs, where 29 (5.3%) adults and 23 (4.2%) children had mild anxiety. The largest number of victims had a medium level of anxiety – 299 (54.4%) people. In particular, AFU servicemen – 78 (14.2%), TDF servicemen – 47 (8.5%) and prisoners of war – 38 (6.9%). Among adults from the temporarily occupied territories, the average level of anxiety was 29 (5.3%), and among children – 5 (1%). In IDPs, the average level of anxiety was observed in 65 (11.8%) adults and 28 (5%) children. High levels of anxiety were detected in 101 (18.4%) victims. The highest number of victims was among AFU servicemen – 20 (3.6%) and adults from the temporarily occupied territories – 22 (4%).

Table 2

**Assessment of anxiety levels by the Beck Anxiety Inventory (BAI)
of military personnel and civilians**

Anxiety level	All patients (n=550), number, (%)	Military personnel, number, (%)		Prisoners of war, number, (%)	Persons from the temporarily occupied territories, number, (%)		IDPs, number, (%)	
		ARMED FORCES OF UKRAINE	TDF		Adults	Children	Adults	Children
Low level	23 (4,1)	2 (0,4)	2 (0,4)	2 (0,4)	12 (2,1)	9 (1,6)	14 (2,5)	15 (2,7)
Mild level of anxiety	127 (23,1)	12 (2,1)	13 (2,4)	1 (0,2)	17 (3,1)	15 (2,7)	29 (5,3)	23 (4,2)
Average level of anxiety	299 (54,4)	78 (14,2)	47 (8,5)	38 (6,9)	29 (5,3)	5 (1)	65 (11,8)	28 (5)
High level of anxiety	101 (18,4)	20 (3,6)	16 (2,9)	11 (2)	22 (4)	1 (0,2)	12 (2,1)	4 (0,8)

The results of the study indicate different levels of anxiety among different groups of people affected by the war in Ukraine. Taking into account these different levels of anxiety, it is possible to identify specific needs and areas of mental health care for each group. This will allow for more effective and targeted psychological support, which will contribute to improved quality of life and reduced psychopathological symptoms among those affected.

The next step is to assess stress reactions and psychopathological symptoms was the Hamilton Anxiety Scale (HAM-A) (Kessler, 2005: 617–627). The anxiety measure, along with the depression measure, is one of the key aspects of the study, as war victims are constantly in a state of anxiety. They carefully analyse any changes in their bodies, reacting to the slightest unpleasant sensations, as their main goal in life is to maintain their health. Let's analyse the main signs of anxiety and their level in the AFU and TDF servicemen, prisoners of war and civilians (adults and children from the temporarily occupied territories and IDPs), the analysis data are described in Table 3.

Table 3

Assessment of anxiety by the Hamilton Anxiety Scale in AFU servicemen, TDF, prisoners of war, persons from the temporarily occupied territories, IDPs

Those affected		Average value	Low level, %	Light level, %	Average level, %	High level, %
ARMED FORCES OF UKRAINE		17,5	5	23	32	40
TDF		16	2	40	29	29
Prisoners of war		19,1	-	12	44	44
Persons from the temporarily occupied territories	Adults	14,3	-	45	50	5
	Children	11,8	19	55	21	5
IDPS	Adults	15,13	8	35	32	25
	Children	10	27	42	31	-

The table shows the average anxiety score and the percentage distribution into different levels: low, mild, moderate and high for each group.

Among the AFU servicemen, the average value of anxiety is 17.5 points, which indicates a moderate depressive disorder. Servicemen of the TDF have an average score of 16 points, also characterised by moderate depressive disorder. Prisoners of war show a mean score of 19, which indicates a severe depressive disorder.

Among the civilian population, adults who have lived for some time in the temporarily occupied territories have a mean score of 14.3, indicating mild to moderate depressive disorder. Internally displaced persons (IDPs) on average have moderate depressive disorder with a mean score of 15.13. Among children from the temporarily occupied territories, the average score is 11.8, indicating mild depressive disorder, and among IDP children the average score is 10, also indicating mild depressive disorder.

Analysis of the table shows that anxiety levels differ between different groups. The comparison between military personnel and civilians highlights the need to pay attention to the mental health of different categories of the population, especially those who have experienced military events.

The Kruskal-Wallis test was used to analyse the differences among all groups of subjects. The results show that $h = 46.65138$, $p = -16670531422.3$. Based on these results, it can be concluded that there are statistically significant differences between the groups under consideration at a significance level of $p \leq 0.01$. This indicates that the groups differ in some parameter that was the object of the study, and this opens up additional opportunities for analysing and interpreting these differences.

The analysis of the level of depression in victims of the war in Ukraine using the PHQ-9 scale (Table 4) shows an increase in depression when experiencing stress as a result of the war, both in military personnel and civilians (adults and children).

Table 4

Dynamics of depression according to the PHQ-9 scale in military personnel and civilians

Depression	Servicemen of the Armed Forces of Ukraine	Military personnel of the TDF	Prisoners of war	Persons from the temporarily occupied territories		IDPS	
				Adults	Children	Adults	Children
None	10 (9%)	12 (13%)	-	11 (14%)	5 (15%)	27 (22%)	22 (31%)
Mild (subclinical)	20 (18%)	4 (5%)	9 (18%)	7 (9%)	10 (35%)	16 (14%)	19 (27%)
Moderate severity	40 (36%)	36 (42%)	5 (10%)	40 (40%)	10 (35%)	33 (28%)	25 (36%)
Medium severity	30 (27%)	24 (27%)	22 (44%)	11 (14%)	5 (15%)	22 (18%)	4 (6%)
Heavy	12 (10%)	12 (13%)	14 (28%)	21 (23%)	-	22 (18%)	-

The table shows the distribution of depression levels among different groups of military personnel and civilians: 9% of AFU servicemen were not diagnosed with depression, 18% had mild depression, 36% had moderate depression, 27% had moderate depression, and 10% had severe depression. Among the servicemen of the TDF, 12% did not have depression, 5% had mild depression, 42% had moderate depression, 27 had moderate depression and 13% had severe depression. There were no persons without depression among POWs; 18% had mild depression, 10% had moderate depression, 44% had moderate depression, and 28% had severe depression.

Among civilians, 14 per cent of adults from the temporarily occupied territories did not have depression, and among children, 15 per cent did. Mild depression was reported in 9% of adults and 35% of children. Adults from the temporarily occupied territories had 40% of moderate depression, and 35% of children. Medium severity depression was observed in 14% of adults and 15% of children. Among adults, 23 per cent had severe depression, while this stage was not observed in children.

Among adult IDPs, 22 per cent did not have depression, and 31 per cent of children did not. Mild depression was observed in 14 per cent of adults and 27 per cent of children, and moderate depression in 28 per cent of adults and 36 per cent of children. Medium severity depression was observed in 18% of adults and 6% of children. Severe depression was observed in only 18 per cent of IDP adults.

Thus, the results of the study indicate a high prevalence of PTSD, depression, anxiety and stress among the AFU and TDF servicemen, including those who were held in captivity for a certain period of time and civilians who were in the temporarily occupied territories or IDPs. The findings underscore the need for systemic measures to support the mental health of different population groups to enable them to overcome emotional difficulties and restore psychological resilience.

Scientific analysis confirms that maintaining mental health requires not only body hygiene, but also psychohygiene, self-education, a clear life position and purity of thought. The path to mental health is the path to an integral personality that is not torn apart by conflicts of motives, doubts and self-doubt (Doniy, 1998: 354).

Taking into account the above and the results of our research, we conclude that a serviceman or a person who has been in the temporarily occupied territories or an IDP should study themselves, identify their strengths and weaknesses, and adequately assess their physical and mental capabilities. Thus, acting as a subject and an object of preserving their own health, victims of the war in Ukraine must skilfully manage it, which involves training their psyche, revealing its reserves and developing mental processes such as memory, attention and imagination.

In order to prevent the occurrence of mental disorders, borderline conditions and diseases in military personnel or civilians affected by the war in Ukraine, it is important to develop the qualities of a self-sufficient, holistic and internally harmonious personality. Such a personality should actively learn and improve themselves and the world, as well as optimally and harmoniously organise their activities, life, leisure and interaction in the family and team.

The key role in maintaining the mental health of a serviceman of the Armed Forces of Ukraine, the TRU, prisoners of war, IDPs or persons from the temporarily occupied territories is played by their ability to self-educate, during which they form the qualities of a subject that positively affects their mental health. Self-education includes personal actions aimed at self-development in accordance with ideals, life goals and internal standards. This process allows military personnel and civilians to actively work on themselves, improve their character, will and other positive qualities.

Through effective self-education, victims of war can successfully engage in self-preservation. By changing themselves, victims influence the conditions and circumstances of their lives, becoming the subject of preserving their health, including mental health. Let's determine the situational anxiety of victims of the war in Ukraine (Table 5).

Almost all victims have the highest average level of anxiety, with only children having the lowest level. As a result, it was determined that for the successful preservation of the mental health of military personnel, IDPs and persons from the temporarily occupied territories, it is important to meet the following requirements:

Table 5

Analysis of anxiety among military personnel, people from the temporarily occupied territories and IDPs

Anxiety	Servicemen of the Armed Forces of Ukraine	Military personnel of the TDF	Prisoners of war	Persons from the temporarily occupied territories		IDPS	
				Adults	Children	Adults	Children
Low level	17 (15%)	19 (22%)	8 (16%)	21 (26%)	16 (53%)	16 (22%)	51 (42%)
Intermediate level	56 (50%)	48 (54%)	23 (46%)	27 (34%)	9 (30%)	36 (52%)	49 (41%)
High level	39 (35%)	21 (24%)	19 (38%)	32 (40%)	5 (17%)	18 (26%)	20 (17%)

1. Understand your mental health, realise the role of this health in your own life; the main factors that can affect mental health, both positively and negatively; types of psychohygiene and specific methods of influencing your own psyche.

2. Have control over your own feelings and mental state; use effective methods of self-regulation.

3. Adopt a healthy lifestyle and consciously implement a self-preservation programme that includes:

- avoiding negative living conditions;
- doing sports;
- organisation of leisure activities;
- avoiding destructive relationships in the family and military team;
- giving up bad habits (alcohol, drugs, tobacco smoking);
- avoiding physical, moral and mental overload.

Therefore, identifying the factors that influence the mental health of survivors is an important task for understanding and effectively managing the psychosocial aspects of their lives. Some of the main factors that can influence the mental health of survivors include: traumatic events, social support, economic hardship, access to health care, adaptation to change and individual resources.

For effective management and support of those affected by the war in Ukraine, it is important to analyse these factors and develop programmes and initiatives aimed at reducing the negative impact of factors and improving mental well-being.

Discussion. The results of the study show significant levels of anxiety and depression among military personnel and civilians affected by the war in Ukraine. Particularly pronounced symptoms of depression and anxiety are observed among prisoners of war, indicating serious psychological consequences of captivity.

Among the AFU and TDF members, medium levels of depression and anxiety were found, which also confirms the high psychological stress they face. Comparisons with the civilian population, including people from the temporarily occupied territories and IDPs, showed that this group of victims also had high levels of anxiety and depression, although slightly lower than POWs.

The high levels of anxiety and depression among children from the temporarily occupied territories and IDPs indicate the need for special attention to this vulnerable group. Children who have survived hostilities need special psychological support programmes, which may include both individual and group therapies aimed at reducing anxiety and improving their psycho-emotional state.

The analysis of the results of the study of anxiety on the Beck scale and depression on the PHQ-9 scale confirmed that the levels of anxiety and depression increase with the duration of stress. This indicates the need for timely intervention to prevent an increase in anxiety and depression, which negatively affects satisfaction with psychological care and health-related quality of life.

Comparing the results of the study with other researchers' data shows similar trends. For example, studies of PTSD among military personnel from other countries also show high levels of depression and anxiety among combat and captivity survivors. This confirms the universality of the problem and the need to develop international standards for the provision of psychological assistance to military and civilian victims of war.

Prospects for applying the findings in future research include studying the long-term effects of war on mental health, as well as developing and testing new approaches to treatment and support for victims. This may include both innovative therapeutic methods and new forms of social support adapted to the specifics of the Ukrainian context.

Conclusions. The study of the psychological state of those affected by the war in Ukraine allowed us to assess stress reactions and psychopathological symptoms in different population groups, including military personnel of the Armed Forces of Ukraine, the TDF, prisoners of war, as well as adults and children from the temporarily occupied territories and IDPs.

Prisoners of war showed the highest number of psychological disorders and are considered the most vulnerable group, demonstrating high levels of anxiety and depression. Significant psychopathological symptoms in the civilian population were observed among adults, and children from the temporarily occupied territories and IDPs also showed high levels of anxiety and depression. The group of children was particularly vulnerable, requiring special psychological support programmes.

The results also confirm that as the duration of stress increases, levels of anxiety and depression increase, which can lead to chronicity of these conditions and a deterioration in quality of life. This highlights the importance of timely intervention to prevent long-term negative consequences.

Integration of psychotherapeutic methods with social support and psychological treatment, introduction of a system of regular monitoring of the psychological state of victims, and expanding access to psychological assistance for all categories of victims are necessary measures to improve the psychological health of the population. Future research should focus on the long-term effects of war on mental health, as well as on the development and testing of new approaches to treatment and support for victims adapted to the specifics of the Ukrainian context.

Thus, the findings of our study point to a serious problem of psychological health among victims of the war in Ukraine and emphasise the need to develop and implement effective methods of overcoming psychological trauma that can be used in crisis situations during war.

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