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## **Predictors and protectors of the risk of developing post-traumatic stress disorder in Ukrainians as a result of the Russian-Ukrainian war: Demographic aspects and war stressors**

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**Abstract.** Post-traumatic stress disorder is considered one of the mental health consequences of war. Predicting the level of risk of developing post-traumatic stress disorder among the population is an essential task in terms of strategic planning, including the costs of building a mental health system. A review of meta-analyses of post-war societies and estimates of the level of post-traumatic stress disorder among Ukrainians in the first year of the war suggests that the expected prevalence of this disorder is much higher than the officially determined 10-20%. The study analysed the results of a mass representative survey of the adult population of Ukraine conducted from 6 to 10 October 2023 (the number of respondents was 2,767) using the index of post-traumatic stress disorder (criterion B – intrusion) based on a questionnaire for assessing the symptoms of stress disorders among civilians. It was found that 75% of the civilian population does not have clinically significant levels of post-traumatic stress disorder symptoms in the 20th month of the full-scale Russian-Ukrainian war. The expected risk of developing this disorder at 25% reflects optimistic dynamics compared to 2022 but requires intensive development of the mental health system and commensurate investments. The demographic preconditions for the development of post-traumatic stress disorder include female gender, younger age, residence in the frontline and de-occupied territories, and low financial welfare. According to the regression analysis, two groups were identified among the most common stressors of the war: a group of subjective stressors, traumatic memories, and a group of social stressors, discrimination, lack of support, and moral dilemmas. One of the most common stressors of the war,

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which is relevant for almost 81% of Ukrainians, is the experience of seeing and hearing things in the media, which confirms the need for further investigation of the impact of war images on mental health

**Keywords:** war stressors; stressor uncertainty index; moral conflict; social support

## INTRODUCTION

Traumatic stress disorders are considered one of the most frequent consequences of war. They include, primarily, post-traumatic stress disorders (PTSD), depression and anxiety disorders. Overall, mental health issues are an integral part of changing society's life during war and the post-war period. Mental disorders reduce the quality of life and labour productivity, increase the burden on the education system due to the need to compensate for educational losses, and, naturally, on the healthcare system due to the need for more resources to provide psychiatric care and treat distress-related psychosomatic diseases. The level of post-traumatic stress disorders among war survivors varies considerably around the world.

Based on an overall meta-analysis of studies conducted from 1983 to 2021 (Lim *et al.*, 2022), the cumulative prevalence of post-traumatic stress in war-affected populations is 23.5%. Post-traumatic stress was assessed in 45 studies of more than 67,000 participants from 23 conflicts (civilians 25.7%, military 21.3%). An analysis of the level of PTSD among adults who continue to live in the area of former hostilities after the end of the war shows higher values – 30.6% (Morina *et al.*, 2018). The meta-analysis was based on the results of 18 included studies with a total sample of more than 10,000 participants from 12 different countries in Africa, Asia, and Europe. Assessment was conducted on average 9.6 years after the conflict ( $SD = 3.7$ , range: 2-17 years). The prevalence of PTSD ranged between 4% and 85%. Prevalence rates of post-traumatic stress disorders in the included publications varied widely, from 0% to 99%. Mental disorders are often combined, with 54% of participants with depression in this study also meeting the criteria for comorbid PTSD.

Should weighted averages be used when there are such major differences that depend on multiple factors? How to determine the most accurate expected level of PTSD among the Ukrainian civilian population? To assess the state of society, an essential guideline is people's awareness of the symptoms of stress pathologisation, when distress develops into symptoms of mental disorder.

According to the official data of the Ministry of Health of Ukraine, over the past two years, there has been a considerable increase in the number of patients diagnosed with PTSD. Thus, in 2023, the number of patients with PTSD increased almost fourfold compared to 2021, while in the first two months of 2024, almost the same number of patients were diagnosed as in the entire year 2021 – 3,292 patients (as of 6 March 2024)

(The number of patients.,., 2024). The problem has been indisputably growing over the three years of war. However, risk forecasting, which is necessary for proactive development of the care system, should be based on a nationwide assessment of the risk of developing stress pathology, which leads to the development of stress-related mental disorders.

The number of diagnoses depends on the availability of psychiatric services, the level of help seeking by people in need, and may not reflect the extent of the risk of developing the disorder. In the public space of Ukraine, there is a rather controversial situation regarding the forecasting of the level of PTSD among the civilian population. According to official reports from the Ministry of Health of Ukraine, based on pre-war statistics on the risk of PTSD in survivors of traumatic events, 10-20% of victims are at risk, while the rest 90-80% are coping with the stress of the traumatic event without psychiatric treatment and, accordingly, without a diagnosis.

Making a basic calculation based on the total population of Ukraine in 2024 – 31.1 million people, as stated in the Strategy of Demographic Development of Ukraine until 2040 (Order of the Cabinet of Ministers of Ukraine No. 922-r., 2024), even with the minimum expected risk of 10%, at least 3 million people will require aid.

Publications in reputable English-language journals based on representative surveys conducted in Ukraine at the beginning of the full-scale invasion suggest somewhat contrary predictions. Thus, Y. Levin *et al.* (2024) estimate the risk of PTSD among the Ukrainian population at 32.5% and complex post-traumatic stress disorder (CPTSD) at 42.6% based on a sample of 2,000 people surveyed between 7 and 15 April 2022. T. Karatzias *et al.* (2023), based on a study of 2,004 parents with minor children living in Ukraine between 15 July and 5 September 2022, found that 25.9% of Ukrainians meet the diagnostic criteria for PTSD while another 14.6% meet the criteria for CPTSD, for a total of 40.5%, noting that this is higher than the global average for recent meta-analytic studies of PTSD in post-war societies (26.5%). In a study conducted one year after the full-scale invasion, S. Wang *et al.* (2024) found that 14.4% of adults living in Ukraine were likely to have PTSD and 8.9% were likely to have CPTSD (for a total of 23.3%).

That is, on the one hand, the identified levels of PTSD risk based on the analysis of symptoms are mostly higher than the expectations officially stated by the Ministry of Health of Ukraine, although there is a tendency for the number of people with clinically

significant symptoms to decrease over time. On the other hand, the mythology of all Ukrainians having total PTSD is functioning and is constantly supported, specifically, with the incorrect understanding of the concept of collective trauma used by scientists. The number of alleged PTSD cases is often overestimated for marketing purposes to promote low-quality services by unscrupulous operators of the mental health services market, who use the following statements: “we will all have PTSD”, “90% already have PTSD”, etc.

So, what is the real level of PTSD among Ukrainians in the context of war? How can the groups of people who are at higher risk be identified to provide them with prompt prevention services, psychosocial support, and psychiatric care? What is the impact of demographic characteristics and life circumstances on the risk of developing PTSD? Answers to all these questions should be based on scientific research and thorough professional assessments.

The purpose of this study was to present the research findings on the stressful conditions of the population in the context of war, considering demographic features, namely, predictors and protectors of the risk of PTSD in civilians based on the data of the all-Ukrainian representative survey of the population of Ukraine conducted 20 months after the full-scale invasion.

## MATERIALS AND METHODS

The mass representative survey was conducted by the Institute of Sociology of the National Academy of Sciences of Ukraine within the framework of the research project “Stressful Conditions of the Ukrainian Population in the Context of War: Prevalence, Risk Groups and Ways of Compensation”. The survey was defined by the following parameters: it represented the adult population aged 18 to 69 years who use a smartphone (70% to 80% of the adult population). The survey was conducted from 6 to 10 October 2023. Survey was completed by sociologic group Rating on the territory of Ukraine (without occupied Krym and Donbass). Data were collected by “mixed mode”: CATI – computer-assisted telephone interview for recruitment and socio-demographic characteristics, followed by CAWI – computer-assisted internet (web) interview for the main part of the survey. Participants were provided with a symbolic reward and a personal report. A total of 2,767 respondents were analysed. The coefficient of respondents’ reach – 9.5%. The statistical error, considering the design effect, was 2.0%. The median CAWI time was 31 minutes.

Features of interaction with respondents: Automatic sending of survey invitations immediately after the recruitment in CATI. The invitation was sent through several channels. The Rating Online platform offers a user-friendly interface for completing the survey using a phone. At the end of the survey, respondents were presented with their score on the final page. The reward was credited automatically as soon as the

questionnaire was completed. As a result, almost 50% of those who started the survey online finished it.

Overall, the sample comprised 77% of urban residents and 23% of rural residents, 46% of respondents were men, young people (18-35 years old) accounted for 30% of respondents, middle-aged people (36-50 years old) – 38%, and older people (51+ years old) – 32%. The respondents represented all regions of Ukraine: East (14%), South (25%), Centre (27%), West (20%), and residents of Kyiv (13%).

To assess the risk of pathological distress, the PTSD index was used, which describes core symptoms that meet criterion B (intrusion) (DSM-5). To construct the PTSD index, 5 indicators were used that correspond to the PCL-C questions on the diagnostic criterion of intrusion by F.W. Weathers *et al.* (1993). The PCL-C is a measure specifically adapted for the diagnosis of PTSD in civilians. Even though this methodology was created during the period of DSM-IV, the diagnostic criterion B has not undergone major changes (Armour *et al.*, 2016), while special studies by K.I. Karstoft *et al.* (2014) proved the diagnostic accuracy of this methodology not only for civilians but also for the military, which led to its choice for surveying civilians in wartime. Criterion B (intrusion) covers the following symptoms: intrusive memories, recurrent dreams, flashbacks, emotional and physiological reactions to memories of traumatic events (see Table 1 for the wording used). The comparative analysis of the wording of the indicators of the group B symptoms of the two methods (PCL-C and PCL-5) conducted by the authors of this study showed two content differences: an emphasis on the undesirability of memories (introduced in item 1 in PCL-5) and de-emphasis on stressful experiences related to the past (in items 1, 2, 4, 5, which were removed from PCL-5). In the current situation of war and ongoing threats to life, referring stressful experiences to the past is essential, as it allows respondents to differentiate memories from immediate threats and thus from acute stress reactions.

The symptom was assessed on a 5-point frequency scale over the past month. Positive answers “quite often” and “very often” were considered significant symptoms. Such answers indicate the presence of a PTSD symptom. The answers “never”, “almost never”, “sometimes” were considered negative – insufficient to conclude on the presence of the symptom. The specific feature of this group of symptoms is that in a clinical examination, even one positive response may be sufficient to determine the risk of developing PTSD according to this clinical criterion. Accordingly, the PTSD index will range from 0 (no positive responses) to 5 (when there is a positive response to all indicators). In addition, this study used a quantitative version of the PTSD index, which was calculated as the sum of the scores of the frequency of symptoms from 1 to 5 for each item (the index has a scale from 5 to 25 points).

Apart from the demographic features mentioned above, questions about marital status, the presence of children of different ages, and indicators of financial well-being (what categories of purchases can be afforded) were also used. The list of various war stressors was proposed based on the analysis conducted by S. Dembytskyi, reflecting the variety of life circumstances that people face in times of war. Linear regression analysis (IBM SPSS Statistica 26) was used to identify predictors and protectors of PTSD among these demographic characteristics and stressors. All survey participants were informed about how their

anonymity is ensured, they were informed about the purpose of the survey, how the data they provided would be used, and the risks involved. The study was conducted following the rules of The Declaration of Helsinki (1975).

**RESULTS AND DISCUSSION**

Table 1 presents data on the prevalence of key PTSD symptoms among the general population. According to the clinical criteria, 25% of Ukrainian citizens are at risk of developing PTSD, as they give a positive response to 1 or more indicators.

**Table 1.** Prevalence of individual PTSD symptoms among the population, % (N = 2,767)

Indicators	Have symptoms	“quite often”	“very often”
1. Recurring disturbing memories, thoughts, or mental pictures of stressful experiences from the past	13.1	10.1	3.0
2. Recurring disturbing dreams about stressful experiences from the past	9.0	6.3	2.7
3. Had sudden feelings as if the stressful event were happening again (or acted as if you were experiencing it again)	7.8	5.8	2.0
4. Feeling terribly upset when something reminded you of a stressful experience from the past	14.4	11.0	3.4
5. Had physical reactions when something reminded you of a stressful experience from the past	10.1	7.8	2.3

**Source:** compiled by the authors of this study

Table 2 presents the distribution of positive responses to the PTSD risk index (the sum of the 5 indicators recoded into a dichotomous variable, where the clinically significant answer options “quite often” or “very often” were coded as 1, while other answers were coded as 0). This table clearly shows that 75% of

respondents do not report clinically significant levels of intrusion symptoms, which are core to the diagnosis of PTSD. Meanwhile, 25% have varying degrees of clinical symptoms, with 8.3% of Ukrainians having the most severe symptoms (positive answers to most questions).

**Table 2.** Distribution of PTSD symptoms among the population, % (N = 2,767)

Number of symptoms	Percentage of respondents
1	11
2	5.6
3	3.2
4	3.0
5	2.1
No clinically significant symptoms	75

**Source:** compiled by the authors of this study

Let us analyse the level of risk of developing PTSD in certain demographic groups (gender, age, education, marital status, place of residence).

*Gender.* According to self-reports, the risk of developing PTSD is higher in women, and they are more likely to report clinically significant symptoms (30%) compared to men (20%), which may also be explained by cultural norms of self-presentation.

*Age.* The younger the subjects, the greater the risk of developing PTSD, which decreases linearly from 36.4% in young people aged 18-29 to 18.4% in people aged 60+.

*Place of residence.* The relationship between the risk of PTSD and the type of settlement in which the respondents live is more complicated. In urban settlements, the level of risk ranges from 23.2% in oblast cities to 32.7% in urban-type settlements (now settlements), 24.8% in other cities, and 26.7% in villages. It is likely that the spread of the risk of stress pathology is influenced by multiple factors, which results in this non-linear relationship. For instance, in settlements and villages, the risk of developing PTSD may be influenced by a lower level of access to care and a lower level of financial welfare. Therewith, the social

structure of interaction with neighbours and communication with nature and natural rhythms in the village can also affect the level of symptoms.

An analysis of *regional differences* by traditional regions (East, West, Centre, South) revealed insignificant differences from 28.2% and 26.1% of the population at risk of developing PTSD in the East and West respectively, to slightly lower rates (23.5% and 24.6%) in the Centre and South respectively. However, according to the new regional distribution dictated by the war, the risk of PTSD is higher in Donbas (34.5%) and in the de-occupied areas (27.1%). Respondents living outside of Ukraine have a higher-than-average frequency of positive responses and, consequently, a higher-than-average risk of developing PTSD (32.7%), although due to the small sample size (N = 57), these data cannot be extrapolated to the entire population of emigrants.

*Marital status.* Among respondents with varying marital statuses, the highest risk of developing PTSD was found among those who effectively separated but did not formalise their relationship (33%), i.e., uncertainty is added to the conflict factor. Single people who have never been married (31.7%), those who are in a common-law (unregistered) marriage (27.5%), officially divorced (27.2%), and widows/widowers (27.3%) also have a higher-than-average risk of PTSD. The lowest level of risk was recorded among those who are officially married (21.6%).

*Children.* Having children, as well as being officially married, can be considered as a condition that acts as a protector of PTSD development, as among those surveyed who do not have children, 30.6% have a risk of developing PTSD, while among those who have

children – 23%. This figure varies among parents of children of different ages: from 21.7% among those with adult children to 25.3% among those with primary school-age children. Despite expectations, the level of PTSD among parents of adolescents aged 10-14 (22.8%) and 15-18 (21.8%) is somewhat lower than among parents of preschool children (24.7%). This is probably associated with the increased workload of parents of younger students due to distance learning, which educational institutions are forced to use because of the constant shelling by the Russian military.

The regression analysis of the significance of the influence of demographic variables on the risk of developing PTSD ( $R^2 = .026$ ,  $df = 10$ ,  $F = 3.022$ ,  $p.val. = .001$ ) confirms only the role of gender at a statistically significant level.

*Education.* There is no unambiguous linear relationship between the level of education and the level of PTSD risk (see Table 3). A somewhat higher percentage of people with PTSD symptoms is observed among people with primary, incomplete, and completed secondary education, as well as basic higher education (28-30%); among those who have completed a master's degree (complete higher education), the percentage is lower (22%), while among people with a scientific degree, the percentage is the lowest (8%). The analysis of gender differences reveals the following feature: the increase in the percentage of respondents with PTSD symptoms with lower levels of education is at the expense of women, because it is among women that symptoms are much more pronounced than among men with the same level of education (35-37% vs. 21-22%).

**Table 3.** Proportion of people with clinical symptoms of PTSD among women and men by level of education (percentage)

	women	men	total
Primary or incomplete secondary education (7-9 <sup>th</sup> grades of secondary school)	35	21	28
Complete general secondary education (10-11 years of secondary school)	37	22	29
College degree	29	23	26
Secondary specialised education – junior specialist/bachelor's degree	27	22	25
Basic higher education – Bachelor's degree	34	26	30
Complete higher education – specialist, master's degree	28	15	22
Academic degree – PhD/Candidate of Science, Doctor of Science	10	6	8
Total	29	20	25

**Source:** compiled by the authors of this study

*Financial welfare.* Low financial status (having to economise, borrow, or seek help to pay for each item, including food) is a significant predictor of PTSD risk ( $\beta = .063$ ,  $p.val. = .041$ ) in a linear regression model of financial indicators from six levels of well-being ( $R^2 = .018$ ,  $df = 7$ ,  $F = 7.214$ ,  $p.val. < .001$ ). Financial well-being, when a person can afford to buy new large appliances (e.g., refrigerator, washing machine,

large-screen TV) or new furniture, acts as a protector and prevents the development of PTSD, although with low power ( $\beta = -.041$ ,  $p.val. = .047$ ).

*Employment.* The type of employment affects the level of risk of developing PTSD: unemployment and disability are associated with the highest risk (35% and 45% respectively have clinical symptoms). Almost a third of people employed in households and the same

proportion of students (32%) have symptoms of PTSD. In contrast, among people with full-time employment, there are significantly fewer such symptoms (22% of respondents) (Table 4).

**Table 4.** The proportion of people with clinical symptoms of PTSD among people with varying levels of employment (in percentage terms)

Social status	Have symptoms
Full-time employment (over 30 hours a week)	22
Part-time employment (under 30 hours a week)	28
Self-employed	27
Retired	19
Householder	32
Student	32
Unemployed	35
Incapacitated	42
Other	33

Source: compiled by the author of this study

Notably, full-time employment is negatively correlated with low financial well-being ( $r = -.138, p.val. < .01$ ), while receiving a pension is positively correlated ( $r = .083, p.val. < .01$ ). Despite the financial difficulties among retirees, the smallest proportion of respondents (19%) reported PTSD symptoms, which is likely to be explained by socio-cultural factors and value orientations.

**Analysis of the relationship between PTSD risk and war stressors**

*Living in a combat zone.* There is a link between the experience of living in a combat zone and the risk of developing PTSD (see Table 5). As expected, those who did not live in a combat zone have a lower risk of developing PTSD (21.9%) compared to those who did (27.6%), while those who were involved in combat or helped the military have a much greater risk, approaching one third of this population.

The distribution of exposure to war stressors among the population is presented in the form of percentages of those who answered that this stressor is relevant to

them (see Table 6). Accordingly, the ranking of the most common war stressors was determined by the proportion of people with actualised stressors. The first place among the stressors that concern the majority of the population was taken by distress over what they heard and saw in the media (80.8%), which is ahead of even the immediate threat to the lives of loved ones (74.1%). The top ten stressors also included social stressors that are relevant to the majority of the population: the need to be responsible for others and take care of them (68.5%), forced separation from loved ones (60.4%), and health problems faced by loved ones (57%). Financial and material stressors are also among the most common: a critical decrease in income for you/your family (60.1%), significant financial and material losses (51.6%), temporary or permanent household problems (with electricity, water, heating, general condition of the property, etc.). Personal danger and deterioration of somatic health are also causes of current stress for many Ukrainians (55.2% and 47.4% respectively).

**Table 5.** PTSD index in citizens with varying experiences in the combat zone (Have you personally lived in a combat zone anywhere in Ukraine since the start of the large-scale invasion on 24 February 2022?)

Yes, lived and took part in the war bearing arms (N=164)	31.7
Yes, lived and assisted the military in the combat zone (N=293)	32.4
Yes, lived and did not take part in military operations (N=656)	27.6
No, did not live (N=1,654)	21.9

Source: compiled by the author of this study

**Table 6.** Rating of war stressors by the share of people for whom they are relevant, in%

STRESSOR	percentage of those for whom it is relevant
Distress over what is heard and seen in the media (radio, television, internet)	80.8
Immediate threat to the lives of loved ones	74.1
Need to be responsible for and care for others	68.5
Forced separation from loved ones	60.4
Critical reduction in income for you/your family	60.1

Table 6, Continued

STRESSOR	percentage of those for whom it is relevant
Temporary or permanent problems with electricity, water, heating, general condition of the property, etc.	57.6
Health problems faced by your loved ones	57
Immediate threat to your own life	55.2
Significant financial or material losses	51.6
Sustaining or aggravation of temporary health damage: injuries or illnesses	47.4
Mass panic due to military threat or other incidents	45.8
Recalling stressful experiences from the past and related negative feelings	44.4
Sustaining or exacerbating an injury or chronic illness	44.2
Performing your job duties without the opportunity to rest properly	37.5
Performing your job duties in hazardous conditions	35.2
Loss of job	35.1
Forced abandonment of your home for a prolonged time	33.6
Exposure to a situation where people were severely injured or killed	30.3
Conflicts with acquaintances or colleagues that were provoked by the military situation or its consequences	28.5
Lack of access to essential public services – financial, social, educational, etc.	26.5
Conflicts with close people that were provoked by the military situation or its consequences	25.4
Lack of access to the medicines you need or required medical care	23.6
Need to personally commit acts that you do not approve of due to complicated circumstances	20.1
Insufficient support from your loved ones, despite your dire need for it	17.3
Change of permanent residence	13.9
Discrimination based on your affiliation with a particular social group (religious, political, ethnic, etc.)	12.1
Poor living conditions in a new place	10.6
Attacks on you, insults, harassment on social media	8.2

Source: compiled by the authors of this study

Since the role of uncertainty as one of the factors shaping the negative consequences of events has been discussed in the literature recently, the authors of this study proposed an index of stressor uncertainty, which was calculated as the sum of the points assigned to the 'difficult to answer' response. Accordingly, the index

varies from 1 to 28. The idea of this indicator was to distinguish between people who find it difficult to answer, and thus to determine whether a particular stressor is relevant or not. Descriptive statistics of the uncertainty index of stressors are presented in Table 7. Overall, there is a fairly low level of uncertainty about the stressors.

Table 7. Specific features of the distribution of the stressor uncertainty index (N = 2,767)

Indicator	Value
Average	5.33
Median	5.00
Mode	4.00
Standard deviation	3.79
Variance	14.34
Skewness	1.143
Skewness standard error	.047
Excess	2.789
Excess standard error	.093

Source: compiled by the authors of this study

Multiple regression models for individual stressors and groups of stressors allow identifying the most dangerous stressors in the context of the risk of developing PTSD out of the 28 stressors studied.

The regression model for 28 separate stressors ( $R^2 = .112$ ,  $df = 28$ ,  $F = 12,316$ ,  $p.val. < .001$ ) identifies 13 significant variables, including 8 predictors and 5 protectors. The most significant predictor is memories of

the experienced events. Intrusive and uncontrollable memories are one of the symptoms of post-traumatic stress disorder, and therefore it is not surprising that for those who have memories adding to their current stress, the risk of stress pathology is identified as the strongest predictor. Recalling stressful experiences from the past and corresponding negative feelings explained 20% of the variance ( $\beta = .201$ ,  $p.val. < .001$ ). The second

strongest predictor is moral damages, which explains almost 8% of the variance in PTSD symptoms among civilians in Ukraine: having to personally do things you disapprove of due to complicated circumstances ( $\beta = .077$ ,  $p.val. < .001$ ). Moral conflict requires considerable psychological resources to overcome because of the need to reconcile one's actions with one's values. According to research on PTSD in the military, exposure to moral harmful events increases the risk of PTSD, suicidal ideation, and other mental health problems, as reported by B.J. Griffin *et al.* (2019). Therewith, V. Williamson *et al.* (2018) note that the role of moral trauma in the development of PTSD in civilians requires further investigation.

Notably, the indicator of personal danger (Immediate threat to one's life), as the main stressor in determining psychological trauma, was not statistically significantly confirmed as a predictor of PTSD risk in the nationally representative sample ( $\beta = .040$ ,

$p.val. = .071$ ). The results of the regression analysis are presented in Table 8. It is worth highlighting that such conventional stressors for understanding the determination of traumatic states as receiving or exacerbating injuries (physical trauma), direct threat to the lives of loved ones, and being a witness to the injury or death of others have shown a negative relationship with clinical symptoms of PTSD. This provides a deeper understanding of stressful conditions in society in the second year of the full-scale invasion, when the focus is not on immediate long-term objective threats (stressors), but primarily on ways of responding to them. It can be assumed that threats to loved ones, and physical injuries mobilise people to a greater extent, which has a protective function against the pathologisation of stress. The same applies to social factors. It is not separation from loved ones that is a factor of psychotraumatization and the development of PTSD risk, but insufficient support from them in case of dire need for it.

**Table 8.** Specific features of the impact of various stressors on the PTSD index (multiple linear regression)

Stressors	Non-st. beta	St. deviation coef.	St. beta	t-test	Sig.
1. Immediate threat to your life	.094	.052	.040	1.807	.071
2. Immediate threat to the lives of loved ones	-.117	.059	-.044	-1.962	.050
3. Sustaining or aggravation of temporary health damage: injuries or illnesses	.068	.055	.029	1.236	.216
4. Sustaining or exacerbating injuries or chronic illnesses	-.138	.056	-.059	-2.462	.014
5. Health problems faced by your loved ones	.138	.049	.059	2.810	.005
6. Exposure to a situation where people were severely injured or killed	-.065	.051	-.026	-1.272	.203
7. Mass panic due to military threat or other incidents	.123	.047	.053	2.630	.009
8. Temporary or permanent problems with electricity, water, heating, general condition of the property, etc.	-.106	.046	-.045	-2.280	.023
9. Lack of access to the medicines you need or required medical care	-.049	.059	-.018	-.827	.408
10. Lack of access to essential public services – financial, social, educational, etc.	-.004	.057	-.002	-.077	.939
11. Forced separation from loved ones	-.103	.050	-.044	-2.085	.037
12. Insufficient support from loved ones, despite your dire need for it	.154	.062	.050	2.493	.013
13. Conflicts with close people that were provoked by the military situation or its consequences	.058	.057	.022	1.018	.309
14. Conflicts with acquaintances or colleagues provoked by the military situation or its consequences	.042	.054	.016	.778	.437
15. Need to be responsible for and care for others	-.100	.049	-.040	-2.037	.042
16. Discrimination based on your affiliation with a particular social group (religious, political, ethnic, etc.)	.173	.070	.049	2.454	.014
17. Attacks, insults, harassment on social media	.164	.084	.039	1.961	.050
18. Significant financial or material losses	.071	.052	.031	1.361	.174
19. Critical reduction in income for you/your family	-.027	.053	-.011	-.506	.613
19. Critical reduction in income for you/your family	.053	-.011	-.506	.613	
20. Loss of job	.010	.051	.004	.195	.845
21. Performance of job duties in hazardous conditions	.029	.050	.012	.583	.560
22. Performance of job duties without the opportunity to rest properly	.076	.048	.032	1.580	.114
23. Forced to abandon your home for a prolonged time	.115	.054	.047	2.121	.034
24. Poor living conditions at the new place of residence	-.096	.079	-.026	-1.219	.223
25. Change of permanent residence	.035	.069	.011	.515	.606
26. Recalling stressful experiences from the past and related negative feelings	.467	.047	.201	9.913	.000

Table 8, Continued

Stressors	Non-st. beta	St. deviation coef.	St. beta	t-test	Sig.
<b>27. Need to personally commit acts that you disapprove of due to complicated circumstances</b>	<b>.223</b>	<b>.059</b>	<b>.077</b>	<b>3.811</b>	<b>.000</b>
28. Distress over what is heard and seen in the media (radio, television, internet)	.101	.057	.034	1.764	.078

**Note:** Dependent Variable: Clinically significant PTSD symptoms; text in bold indicates statistically significant predictors (positive association) and protectors (negative association with PTSD symptoms)

**Source:** compiled by the authors of this study

The linear regression model for the stressor groups ( $R^2 = .089$ ,  $df = 11$ ,  $F = 24.443$ ,  $p.val. < .001$ ) identified by the cluster analysis (Table 9) has a slightly

lower explanatory potential but simplifies the structure of predictors and allows for a clear identification of the pattern.

Table 9. Specific features of the impact of various groups of stressors on the PTSD index

Stressor groups	Non-st. beta	St. deviation coef.	St. beta	t-test	Sig.
(Constant)	.184	.056		3.318	.001
Experience of being in dangerous situations	.006	.024	.006	.263	.792
Insufficiency of social services	-.054	.033	-.035	-1.614	.107
Change of permanent residence	.020	.045	.009	.446	.655
Difficulties associated with financial matters	.021	.022	.021	.953	.341
Abandonment of home and separation from loved ones	.006	.032	.004	.190	.849
Discrimination, lack of support, and moral dilemmas	.186	.028	.145	6.561	.000
Conflicts with family and friends	.047	.031	.031	1.526	.127
Health problems	-.007	.021	-.007	-.352	.725
Threat to life as a probability	-.014	.029	-.010	-.467	.640
Mass negative effects	-.028	.034	-.017	-.835	.404
Traumatic memories	.305	.031	.210	9.901	.000

**Note:** dependent variable: clinically significant PTSD symptoms; text in bold indicates statistically significant predictors (positive association) and protectors (negative association with PTSD symptoms)

**Source:** compiled by the authors of this study

The main predictors of pathological war stress are the group of subjective stressors Traumatic memories ( $\beta = .210$ ,  $p.val. < .001$ ) and the group of social stressors Discrimination, lack of support, and moral dilemmas ( $\beta = .145$ ,  $p.val. < .001$ ).

**CONCLUSIONS**

Thus, the analysis of the data from a representative study allows drawing the following conclusions. In October 2023, the level of stress pathology according to the indicator of PTSD core clinical symptoms (intrusion) was inherent in a quarter of the population (25%), which is much higher than the expected 10-20%. This does not refer to diagnoses, but to the clinical symptoms reported by respondents. It should also be noted that other disorders (depression, anxiety, which are also typical consequences of war) were not considered in this study. Comparison with the data from other studies conducted in the first year of the war shows a positive trend of a decrease in the number of people with clinical symptoms. It is probable that the model of PTSD and CPTSD symptoms and the measurement tools used did not sufficiently differentiate between PTSD and

acute stress reactions at the beginning of the war, especially as the impact of traumatic stressors continues. Notably, such a comparison of dynamics is rather conditional, as strict tracking of changes requires monitoring representative studies with the same instruments. The following demographic characteristics were found to be most associated with the risk of developing PTSD: gender (women report more PTSD symptoms), younger age, residence in the frontline and de-occupied territories, and low financial welfare. Among all the war stressors that were studied, the group of social stressors is most closely related to PTSD symptoms, including discrimination and lack of social support, as well as moral dilemmas. There is truly little that Ukrainians can do about objective stressors during the war (e.g., danger to their or their loved ones' lives and health), but as for subjective and social stressors, it is within everyone's power to help reduce the risk of PTSD in the country. Such messages should become the conceptual basis for building information campaigns to support mental health. The following factors are negatively associated with PTSD symptoms and can be considered as protectors: being married, having children, having a

complete higher education, and being engaged in science, and financial stability. Further research is needed on the role of media exposure during the war, which is related to the most common current stressor – worries about what is heard and seen in the media, especially in the context of re-traumatisation and triggering painful memories.

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## CONFLICT OF INTEREST

None.

## REFERENCES

- [1] Armour, C., Müllervová, J., & Elhai, J.D. (2016). A systematic literature review of PTSD's latent structure in the Diagnostic and Statistical Manual of Mental Disorders: DSM-IV to DSM-5. *Clinical Psychology Review*, 44, 60-74. doi: [10.1016/j.cpr.2015.12.003](https://doi.org/10.1016/j.cpr.2015.12.003).
- [2] Griffin, B.J., Purcell, N., Burkman, K., Litz, B.T., Bryan, C.J., Schmitz, M., Villierme, C., Walsh, J., & Maguen, S. (2019). Moral injury: An integrative review. *Journal of Traumatic Stress*, 32(3), 350-362. doi: [10.1002/jts.22362](https://doi.org/10.1002/jts.22362).
- [3] Karatzias, T., et al. (2023). War exposure, posttraumatic stress disorder, and complex posttraumatic stress disorder among parents living in Ukraine during the Russian war. *Acta Psychiatrica Scandinavica*, 147(3), 276-285. doi: [10.1111/acps.13529](https://doi.org/10.1111/acps.13529).
- [4] Karstoft, K.I., Andersen, S.B., Bertelsen, M., & Madsen, T. (2014). Diagnostic accuracy of the posttraumatic stress disorder checklist-civilian version in a representative military sample. *Psychological Assessment*, 26(1), 321-325. doi: [10.1037/a0034889](https://doi.org/10.1037/a0034889).
- [5] Levin, Y., Ben-Ezra, M., Hamama-Raz, Y., Maercker, A., Goodwin, R., Leshem, E., & Bachem, R. (2024). The Ukraine – Russia war: A symptoms network of complex posttraumatic stress disorder during continuous traumatic stress. *Psychological Trauma: Theory, Research, Practice, and Policy*, 16(7), 1110-1118. doi: [10.1037/tra0001522](https://doi.org/10.1037/tra0001522).
- [6] Lim, I.C.Z.Y., Tam, W.W.S., Chudzicka-Czupala, A., McIntyre, R.S., Teopiz, K.M., Ho, R.C., & Ho, C.S.H. (2022). Prevalence of depression, anxiety and post-traumatic stress in war- and conflict-afflicted areas: A meta-analysis. *Frontiers in Psychiatry*, 13, article number 978703. doi: [10.3389/fpsy.2022.978703](https://doi.org/10.3389/fpsy.2022.978703).
- [7] Morina, N., Stam, K., Pollet, T.V., & Priebe, S. (2018). Prevalence of depression and posttraumatic stress disorder in adult civilian survivors of war who stay in war-afflicted regions: A systematic review and meta-analysis of epidemiological studies. *Journal of Affective Disorders*, 239, 328-338. doi: [10.1016/j.jad.2018.07.027](https://doi.org/10.1016/j.jad.2018.07.027).
- [8] Order of the Cabinet of Ministers of Ukraine No. 922-r “On Approval of the Strategy of Demographic Development of Ukraine for the Period up to 2040.” (2024, September). Retrieved from <https://zakon.rada.gov.ua/laws/show/922-2024-p>.
- [9] The Declaration of Helsinki. (1975). Retrieved from <https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/>.
- [10] The number of patients diagnosed with PTSD in Ukraine is increasing. What you need to know about post-traumatic stress disorder. (2024). Retrieved from <https://moz.gov.ua/uk/kilkist-pacientiv-zi-vstanovlenim-diagnozom-ptsr-v-ukraini-zrostaє-scho-treba-znati-pro-posttravmatichnij-stresovij-rozlad>.
- [11] Wang, S., Barrett, E., Hicks, M. H., Martsenkovskiy, D., Holovanova, I., Marchak, O., Ishchenko, L., Haque, U., & Fiedler, N. (2024). Associations between mental health symptoms, trauma, quality of life, and coping in adults living in Ukraine: A cross-sectional study a year after the 2022 Russian invasion. *Psychiatry Research*, 339, article number 116056. doi: [10.1016/j.psychres.2024.116056](https://doi.org/10.1016/j.psychres.2024.116056).
- [12] Weathers, F.W., Litz, B.T., Herman, D.S., Huska, J.A., & Keane, T.M. (1993). [The PTSD Checklist \(PCL\): Reliability, validity, and diagnostic utility](#). *Journal of Behavioral and Brain Science*, 7(8).
- [13] Williamson, V., Stevelink, S.A.M., & Greenberg, N. (2018). Occupational moral injury and mental health: Systematic review and meta-analysis. *The British Journal of Psychiatry*, 212(6), 339-346. doi: [10.1192/bjp.2018.55](https://doi.org/10.1192/bjp.2018.55).

## **Предиктори і протектори ризику розвитку пост-травматичного стресового розладу українців внаслідок російсько-української війни: демографічні аспекти і стресори війни**

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**Анотація.** Посттравматичний стресовий розлад вважається одним із наслідків війни в сфері психічного здоров'я. Прогнозування рівня ризику розвитку посттравматичного стресового розладу серед населення є важливим завданням з огляду на стратегічне планування, зокрема на витрати для розбудови системи охорони психічного здоров'я. Огляд метааналізу повоєнних суспільств та оцінки рівня посттравматичного стресового розладу серед українців у перший рік війни свідчить про значно вищі рівні очікуваного поширення цього розладу, ніж офіційно визначені 10-20 %. Проаналізовано результати масового репрезентативного опитування дорослого населення України, яке проводилося з 6 по 10 жовтня 2023 року (кількість опитаних – 2,767 осіб) з використанням індексу посттравматичного стресового розладу (критерій В – інтрузії) на основі опитувальника для оцінки симптомів стресових розладів серед цивільних осіб. Виявлено, що 75 % цивільного населення не має клінічно значущих рівнів симптомів посттравматичного стресового розладу на двадцятому місяці повномасштабної російсько-української війни. Очікуваний рівень ризику розвитку цього розладу у 25 % свідчить про оптимістичну динаміку порівняно з 2022 роком, проте вимагає інтенсивної розбудови системи охорони психічного здоров'я та відповідних інвестицій. Демографічними передумовами розвитку посттравматичного стресового розладу є жіноча стать, молодший вік, проживання на прифронтових і деокупованих територіях, низький фінансовий добробут. Серед найбільш розповсюджених стресових факторів війни, за результатами регресійного аналізу, виявлено дві групи: групу суб'єктивних стресорів «травматичні спогади» і групу соціальних стресорів «дискримінація, недостатня підтримка та моральні дилеми». Одним із найпоширеніших стресових факторів війни, який є актуальним для майже 81 % українців, є переживання щодо побаченого і почутого в медіа, що підтверджує необхідність подальшого дослідження впливу образів війни на психічне здоров'я

**Ключові слова:** стресори війни; індекс невизначеності стресорів; моральний конфлікт; соціальна підтримка