



SOCIAL AND BEHAVIORAL SCIENCES. Psychology

ORIGINAL RESEARCH



## The Impact of the War in Ukraine on the Psychological Well-Being of Students



### Authors' Contribution:

- A – Study design;
- B – Data collection;
- C – Statistical analysis;
- D – Data interpretation;
- E – Manuscript preparation;
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**Received:** 29.10.2023; **Accepted:** 30.11.2023; **Published:** 25.12.2023

### Background and Aim of Study:

### Material and Methods:

### Results:

### Conclusions:

### Keywords:

### Copyright:

### DOI and UDC

### Conflict of interests:

### Peer review:

### Source of support:

### Information about the authors:

### Abstract

The war in Ukraine affects the psychological state and life activities of university students. Aim of the study: to identify the state of psychological well-being of students and the peculiarities of students' use of coping strategies in overcoming life crises on their own.

The study was conducted among 323 Ukrainian university students aged 20-35 in October 2023. According to the impact of the hostilities on them, the respondents were divided into 3 groups: Group 1 – 111 persons living in the area of active hostilities; Group 2 – 104 persons living in the areas where missiles and drones were fired; Group 3 – 108 persons living on the territory of Ukraine, where there were no hostilities and shelling, and in the EU countries. The Psychological General Well-Being Index, PGWBI, and the Coping Strategies Inventory, CSI, were included in an online survey. Both techniques were found to have adequate internal consistency (Cronbach's alpha was 0.928 and 0.759, respectively).

Respondents in all groups are moderately distressed. The highest level of distress (the lowest level of PGWBI) was found among students in Group 1 (55.1 points). Students in Groups 2 and 3 had lower scores (60.1 and 63.5 points, respectively), which corresponds to moderate distress. Students use a variety of coping strategies in stressful situations. However, the coping strategy of cognitive restructuring was used more often (9.8 points in Group 3, 9.5 points in Group 1). This was due to a general rethinking of the meaning of life, of attitudes toward oneself and others because of the war. Coping strategies of social support (8.9 points) and self-criticism (8.7 points) were also important for Group 1. This was due to the importance of social support, reassessment of one's own behavior and thinking in the war.

The obtained data indicate that the war in Ukraine has a negative impact on the psychological state of students. The level of impact was higher the closer the students were to the active combat zone. This influence determined the students' choice of coping strategies in dealing with life crises on their own.

students, psychological well-being, distress, coping strategy, war

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DOI <https://doi.org/10.26697/ijasa.2023.2.2> UDC 159.972

The authors declare that there is no conflict of interests

Double-blind review

This research did not receive any outside funding or support

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## Introduction

The war in Ukraine affects both the physical health and psychological well-being of individuals and communities. Despite the relatively long period of martial law (20 months), most Ukrainians are still in the epicenter of active hostilities. People are killed and injured as a result of the constant bombardment of public places by Russian missiles and drones, the usual way of life is disrupted, and there is often no communication, water, heat or electricity (Stadnik et al., 2022).

Although a part of the population of Ukraine lives in safer regions or abroad, millions of Ukrainians have become internally displaced persons, migrants (Patel & Erickson, 2022).

Recent studies show that many Ukrainians have lost their homes, jobs, money, property, parents and relatives, and have mental health problems (Ben-Ezra et al., 2023; Stadnik et al., 2023).

Data from the WHO World Mental Health Surveys have highlighted that recovery from post-traumatic stress disorder is particularly slow in the context of war (Koenen et al., 2017).

War causes trauma to both its participants and the wider community (Surzykiewicz et al., 2022). One of the most vulnerable categories is the student youth, who are forced to endure all the hardships and difficulties of war. In addition, university study is a period of adult formation characterized by dramatic psychosocial changes, problems related to learning, interpersonal relationships, and the need to adapt to student life.

As a result, the combination of these factors can have a significant impact on learning outcomes, as well as on students' health and psychological well-being.

To achieve a sufficient level of psychological well-being, it is necessary to learn how to use constructive and effective coping strategies (Pérez-Chacón et al., 2023). Appropriate coping strategies help students to deal with life's difficulties and obstacles and to find adaptive opportunities in stressful situations. However, poorly chosen coping strategies can not only cause situational failure, but also perpetuate destructive ways of dealing with difficult life situations. As a result, it can lead to mental health problems (Yeh et al., 2023). In times of war, this is especially important for students.

Therefore, ignorance of protective behavior patterns (or the psychological mechanisms for dealing with difficult situations) can be a trigger for the onset of psychosomatic illness and other psychogenic personality disorders.

*The aim of the study.* To determine the impact of the war in Ukraine on the psychological well-being of university students and to identify the peculiarities of their use of coping strategies in overcoming life crises on their own. This study will allow us to better understand the key factors that affect the psychological state of students, develop appropriate measures of psychological support and psychoprophylaxis for students, and help optimize education at universities under martial law.

## Materials and Methods

To conduct the study, we engaged Ukrainian students of Kharkiv National University of Internal Affairs (KhNUIA) and Uzhhorod National University (UzhNU) in October 2023.

The participants are between the ages of 20 and 35 years old. All participants were divided into the following 3 groups:

Group 1 – students living in the area of active hostilities (Kharkiv region of Ukraine) in the amount of 111 persons, including 33 (29.7%) males and 78 (70.3%) females.

Group 2 – students living in the areas of Ukraine where there were shelling by missiles and drones and who are internally displaced persons, in the amount of 104 persons, including 19 (18.3%) males and 85 (81.7%) females.

Group 3 – students living in the areas where there were no hostilities and shelling (Transcarpathian region of Ukraine and the EU countries), in the amount of 108 persons, including 16 (14.8%) males and 92 (85.2%) females.

Due to the war in Ukraine, the study was conducted online. The psychological tests were posted on the official website of the Scientific Research Institute KRPOCH (2023), using Google Forms for potential participants. In addition, all groups were monitored during remote and face-to-face classes. An individual interview was used when it was necessary.

The following techniques were used to achieve the research goal: Psychological General Well-Being Index – PGWBI (Grossi & Compare, 2014) and Coping Strategies Inventory – CSI (Tobin et al., 1989).

Psychological well-being was assessed using the Ukrainian version of the 22-item Psychological General Well-Being Index questionnaire (<https://forms.gle/MG5nmrydPo5Ff3Tx5>). This self-assessment tool is designed to measure subjective well-being or suffering over the past 4 weeks. It explores six different domains: Anxiety (ANX), Depressive Mood (DEP), Positive Well-Being (PWB), Self-Control (SC), General Health (GH), and Vitality (VT). Each item was rated on a 6-point scale (from 0 to 5). The global summary score was calculated by dividing the raw score obtained during the test by the maximum raw score obtained for each parameter and multiplying the result by 100. Higher scores indicate a better PGWBI. More specifically, a total score of less than 55 points indicates severe distress, 55-65 points indicates moderate distress, and 66-100 points indicates no distress or a state of psychological well-being. High scores on ANX and DEP indicate low anxiety and low depression, while high scores on PWB, SC, GH, and VT indicate high positive well-being, self-control, good general health, and vitality.

Coping strategies were assessed using the Ukrainian version of the 32-item Coping Strategies Inventory (<https://forms.gle/PHxRXbtVRhx35M2s5>).



The primary subscale of coping strategies includes the following items: Problem Solving (PS), Cognitive Restructuring (CR), Express Emotions (EE), Social Support (SS), Problem Avoidance (PA), Wishful Thinking (WT), Self-Criticism (SC), and Social Withdrawal (SW). The secondary subscale of coping strategies includes the following items: Problem-Focused Engagement (PFE), Problem-Focused Disengagement (PFD), Emotion-Focused Engagement (EFE), and Emotion-Focused Disengagement (EFD). The tertiary subscale of coping strategies includes the first tier items: Engagement (E) and Disengagement (D), as well as the second tier items: problem-focused and emotion-focused engagement, problem-focused and emotion-focused disengagement.

To calculate the secondary and tertiary subscale scores, the scores of the relevant items on the primary subscale are summed. Each item was rated on a 5-point Likert scale. Respondents were asked to rate the overall frequency with which they use each coping strategy

listed on the survey, indicating their choices as follows: 1 = "Never", 2 = "Seldom", 3 = "Sometimes", 4 = "Often" and 5 = "Almost Always". Higher scores reflect greater use of the relevant coping strategy.

Statistical analysis were calculated using SPSS 27.0 software. The data collected were analyzed using descriptive statistics procedures, using frequencies, means and standard deviations. Internal consistency was assessed using Cronbach's alpha. To assess the associations between the scales, the Pearson correlation coefficient was calculated.

### Results

Mean scores for all items and the global summary measures were calculated according to the first technique (PGWBI). The general results of psychological well-being by the scales of anxiety, depressive mood, positive well-being, self-control, general health, and vitality of Ukrainian universities students during the war are shown in Table 1.

**Table 1**

*The Scores of Psychological Well-Being by Domains (Anxiety, Depressive Mood, Positive Well-Being, Self-Control, General Health, and Vitality) for Students of the Ukrainian Universities during the War (Points)*

Group	Anxiety	Depressive Mood	Positive Well-Being	Self-Control	General Health	Vitality	Global
Group 1	52.7	60.6	52.4	54.4	62.7	52.4	55.1
Group 2	55.5	65.6	56.0	66.0	70.7	54.0	60.1
Group 3	58.6	71.8	58.4	68.7	74.1	56.6	63.5

Anxiety in students is related to the perception of tension and worry. The highest scores (less anxiety) on the ANX scale were found among students in Group 3 (58.6 points), which is lower than the scores of Group 2 (55.5 points). The lowest scores (more anxiety) were shown by students in Group 1 (52.7 points).

Depressive mood is a state of low mood and feelings of sadness and despair that can be caused by sleep disturbance and fatigue during war. Major depression may be a risk factor for suicide. The lowest scores on the DEP scale (with depression) were observed among students in Group 1 (60.6 points), and the highest scores (without depression) were observed among students in Group 3 (71.8 points). The data showed a significant difference ( $p < 0.05$ ) between these groups.

Positive well-being refers to satisfaction with learning, work, and daily activities. The data obtained did not show a significant difference between the groups studied. Students in Group 1 perceived their learning and living conditions as more unsatisfactory than other groups, while students in Group 3 had the highest scores on the PWB scale (58.4 points).

Self-control means having the ability to control your emotions, behaviors, desires, confidence, and need to make difficult decisions. According to the SC scale, significant differences were found between students of Group 1 and Groups 2, 3 (54.4 and 66.0, 68.7 points, respectively). Students in Group 1 had the lowest scores (less self-control).

General health characterizes perceptions of health and

measures fear of illness and/or feeling too tired to study, which can interfere with learning. Students in Group 3 scored the highest on the GH scale (74.1 points), which is significantly higher than the scores of Group 1 (62.7 points) and Group 2 (70.7 points).

Vitality assesses mental and physical fatigue, apathy, loss of energy, and activity. According to the VT scale, the scores for the three groups of respondents did not differ significantly. The lowest scores (lower vitality) were for students in Group 1 (52.4 points), and the highest scores were for students in Group 3 (56.6 points).

The highest level of distress (the lowest level of PGWBI) was found among students in Group 1 (55.1 points). Students in Groups 2 and 3 had lower scores (60.1 and 63.5 points, respectively), which corresponds to moderate distress.

A comparison of gender differences (Figure 1) showed that male students scored higher than female students on almost all indicators of PGWBI technique, indicating a higher level of psychological well-being.

At the same time, female participants in Groups 2 and 3 scored higher on the DEP scale (66.8 and 72.2 points) than male participants (59.7 and 69.6 points). This indicates a low level of depression and stress. It should also be noted that women in Group 1 have rather low scores on the ANX (50.3 points), PWB (49.7 points), SC (53.4 points), and VT (47.9 points) scales. This indicates their great distress. The absence of distress on the GH scale was shown by men of all groups, indicating their

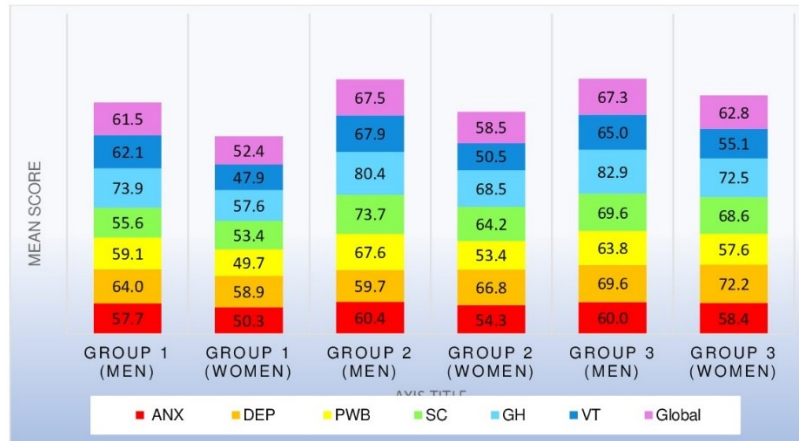


satisfactory general health. Men in Groups 2 and 3 have the highest global scores (67.5 and 67.3 points, respectively), indicating their state of no distress. The

lowest score of all gender groups (52.4 points), and thus the highest overall level of distress, is found among female students in Group 1.

**Figure 1**

*The Scores of Psychological Well-Being by Gender of Students of the Ukrainian Universities during the War According to Six Scales (Points)*



Note. ANX – Anxiety, DEP – Depressive Mood, PWB – Positive Well-Being, SC – Self-Control, GH – General Health, VT – Vitality.

The mean, standard error, standard deviation, and median of the total scores obtained from the PGWBI technique scales are summarized in Table 2. Cronbach’s alpha coefficients were computed for each of the six scales of the PGWBI to estimate internal consistency reliability (Table 2). All scales were found to have acceptable levels of reliability ( $\alpha=0.689-0.843$ ).

Cronbach’s alpha for the total scale was 0.928. These scores indicate the homogeneity of the items in each of the dimensions of the scale.

Inter-item correlation matrix for PGWBI scales is shown in Table 3. The correlation indicated a strong, positive relationship between all items on the scale.

**Table 2**

*Descriptive Statistics and Internal Consistency Reliability for PGWBI Scales (N=323)*

Scales	Mean	Standard error of mean	Median	Standard deviation	Internal consistency reliability
Anxiety	55.49	1.124	64.00	20.19	0.843
Depressive Mood	65.86	1.203	73.33	21.61	0.741
Positive Well-Being	55.65	1.043	55.00	18.74	0.766
Self-Control	62.79	1.175	66.67	21.11	0.729
General Health	68.96	1.108	66.67	19.92	0.689
Vitality	54.12	0.996	55.00	17.90	0.814

**Table 3**

*Inter-Item Correlation Matrix for PGWBI Scales*

Scales	ANX	DEP	PWB	SC	GH	VT
ANX	1.000	0.703	0.825	0.787	0.649	0.811
DEP	0.703	1.000	0.550	0.615	0.691	0.623
PWB	0.825	0.550	1.000	0.761	0.548	0.788
SC	0.787	0.615	0.761	1.000	0.613	0.731
GH	0.649	0.691	0.548	0.613	1.000	0.630
VT	0.811	0.623	0.788	0.731	0.630	1.000

Note. ANX – Anxiety, DEP – Depressive Mood, PWB – Positive Well-Being, SC – Self-Control, GH – General Health, VT – Vitality.

The Pearson correlation coefficient was calculated to assess the associations between the scales (Table 4). Mean scores for all items and the global summary measures were calculated according to the second

technique (CSI). The level of use of coping strategies for the primary subscale by the students of the Ukrainian universities during the war, including gender differences, is shown in Figure 2.

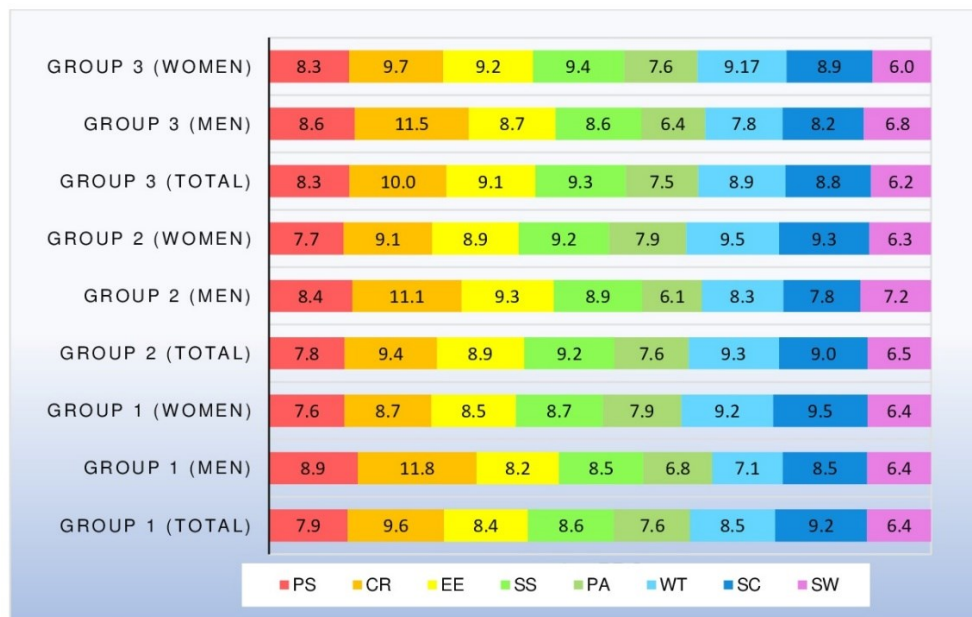


**Table 4**  
 Pearson Correlations for PGWBI Scales

Scales		ANX	DEP	PWB	SC	GH	VT
ANX	Pearson Correlation	1.000	0.703**	0.825**	0.787**	0.649**	0.811**
	Sig. (2-tailed)	-	<0.001	<0.001	<0.001	<0.001	<0.001
	N	323	323	323	323	323	323
DEP	Pearson Correlation	0.703**	1.000	0.550**	0.615**	0.691**	0.623**
	Sig. (2-tailed)	<0.001	-	<0.001	<0.001	<0.001	<0.001
	N	323	323	323	323	323	323
PWB	Pearson Correlation	0.825**	0.550**	1.000	0.761**	0.548**	0.788**
	Sig. (2-tailed)	<0.001	<0.001	-	<0.001	<0.001	<0.001
	N	323	323	323	323	323	323
SC	Pearson Correlation	0.787**	0.615**	0.761**	1.000	0.613**	0.731**
	Sig. (2-tailed)	<0.001	<0.001	<0.001	-	<0.001	<0.001
	N	323	323	323	323	323	323
GH	Pearson Correlation	0.649**	0.691**	0.548**	0.613**	1.000	0.630**
	Sig. (2-tailed)	<0.001	<0.001	<0.001	<0.001	-	<0.001
	N	323	323	323	323	323	323
VT	Pearson Correlation	0.811**	0.623**	0.788**	0.731**	0.630**	1.000
	Sig. (2-tailed)	<0.001	<0.001	<0.001	<0.001	<0.001	-
	N	323	323	323	323	323	323

Note. \*\* Correlation is significant at the 0.01 level (2-tailed); ANX – Anxiety, DEP – Depressive Mood, PWB – Positive Well-Being, SC – Self-Control, GH – General Health, VT – Vitality.

**Figure 2**  
 Level of Use of Coping Strategies for the Primary Subscale by Ukrainian University Students during the War (Points)



Note. PS – Problem Solving, CR – Cognitive Restructuring, EE – Express Emotions, SS – Social Support, PA – Problem Avoidance, WT – Wishful Thinking, SC – Self-Criticism, SW – Social Withdrawal.

The highest coping strategy scores for all groups were for the CR coping strategy (10.0 points for Group 3, 9.6 points for Group 1, 9.4 points for Group 2). This demonstrates the importance of changing maladaptive thoughts to more appropriate ones in order to reduce the level of suffering. However, there are some differences in the scores of the groups studied, which may indicate certain peculiarities of the impact of proximity to the combat zone on students. Group 1 is characterized by the SC coping strategy

(9.2 points) in addition to the SS coping strategy (8.6 points). This is manifested in the independent search for mistakes, the evaluation of one's own behavior and the results of one's own thinking. In addition to social support (9.2 points for the SS coping strategy), Group 2 is characterized by wishful thinking (9.3 points for the WT coping strategy), which indicates that students' beliefs and decisions are formed according to what is pleasurable rather than according to rationality or reality.



For Group 3, expressing emotions (EE – 9.1 points) and social support (SS – 9.3 points) play an important role in overcoming anxiety and depression, which is manifested in expressive speech and behavior, physical and emotional help even to strangers.

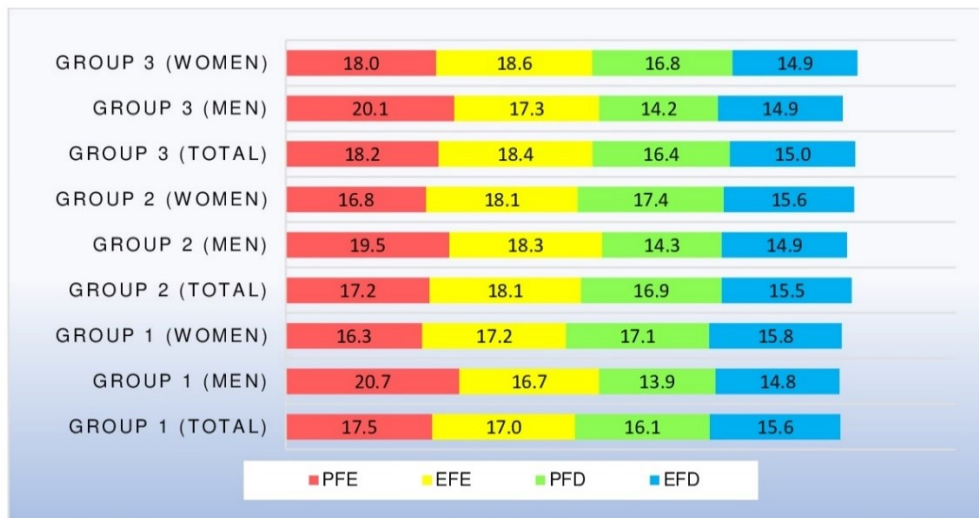
Representatives of all groups have the lowest scores on the social withdrawal subscale: 6.2 points in Group 3, 6.4 points in Group 1, and 6.5 points in Group 2 for the SW coping strategy. This demonstrates the ineffectiveness of this coping strategy in dealing with the stress of war.

Gender differences include the predominance of the CR coping strategy for men in all groups studied. For women in Group 1, self-critical coping (SC – 9.5 points) is typical, Group 2 is characterized by wishful thinking (WT – 9.1 points), and Group 3 is characterized by emotional coping (EE – 9.2 points) and cognitive restructuring coping (CR – 9.7 points).

Students' use of coping strategies for the secondary subscale is characterized as follows (Figure 3).

**Figure 3**

*Level of Use of Coping Strategies for the Secondary Subscale by Ukrainian University Students during the War (Points)*



*Note.* PFE – Problem-Focused Engagement, PFD – Problem-Focused Disengagement, EFE – Emotion-Focused Engagement, EFD – Emotion-Focused Disengagement

The highest scores among students of all groups are for coping strategies of emotion-focused engagement EFE (18.4 points for Group 3 and 18.1 points for Group 2) and problem-focused engagement PFE (18.2 points for Group 3 and 17.5 points for Group 1), which shows the importance of managing emotions and problems to overcome the effects of stress. At the same time, Group 2 is more likely to use a PFE coping strategy (17.2 points), and Group 1 is more likely to use an EFE coping strategy (17.0 points), which indicates a more

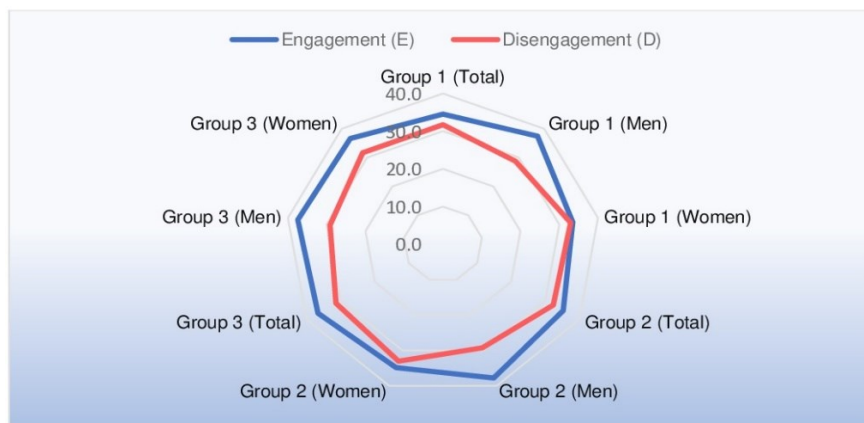
active assimilation of these strategies by the respective categories of students. EFD coping strategies are the least used by all groups (15.6 points, 15.5 points, and 15.0 points for Groups 1, 2, and 3, respectively).

Gender differences include more frequent use of problem-focused engagement coping strategies by men in all groups. While for women, it is a coping strategy of emotion-focused engagement.

The level of use of coping strategies for the tertiary subscale by the students is shown in Figure 4.

**Figure 4**

*Level of Use of Coping Strategies for the Tertiary Subscale by Ukrainian University Students during the War (Points)*





Students in all groups used engagement (E) coping strategies more often (34.5 points, 35.3 points, and 36.7 points for Groups 1, 2, and 3, respectively). At the same time, the gap in the use of disengagement (D) coping strategies is the smallest in Group 3, indicating

the ineffectiveness of coping with stress through engagement strategies among students in this group. The mean, standard error, standard deviation, and median of the total scores obtained on the subscales of the CSI technique are summarized in Table 5.

**Table 5**

*Descriptive Statistics for the Secondary and the Tertiary Subscales of the CSI and Internal Consistency Reliability*

Items of subscale	N	Mean	Standard error of mean	Median	Standard deviation	Range	Internal consistency reliability
PFE	323	17.73	0.305	18.00	5.48	23	0.795
PFD	323	16.46	0.284	16.00	5.11	22	0.739
EFE	323	17.86	0.320	18.00	5.75	20	0.844
EFD	323	15.31	0.269	14.00	4.83	18	0.672
E	323	35.59	0.545	36.00	9.80	39	0.820
D	323	31.77	0.477	30.00	8.57	34	0.706

*Note.* PFE – Problem-Focused Engagement, PFD – Problem-Focused Disengagement, EFE – Emotion-Focused Engagement, EFD – Emotion-Focused Disengagement, E – Engagement, D – Disengagement.

Cronbach's Alpha coefficients were computed for each of the secondary and the tertiary subscales of the CSI to estimate internal consistency reliability (Table 5). Acceptable internal consistency was seen for all subscales. Cronbach's alpha coefficients ranged from 0.672 to 0.844 for the secondary subscale, which are Problem-Focused Engagement, Problem-Focused Disengagement, Emotion-Focused Engagement, and

Emotion-Focused Disengagement, and 0.820 and 0.706 for the tertiary subscale, Engagement and Disengagement respectively. Cronbach's alpha for the total scale was 0.759. These scores indicate the homogeneity of the items in each subscale.

To assess the associations between the secondary and tertiary subscales, the Pearson correlation coefficient was calculated (Table 6).

**Table 6**

*Pearson Correlations for the Secondary and the Tertiary Subscales of the CSI*

Items of subscale	PFE	EFE	PFD	EFD	E	D	
PFE	Pearson Correlation	1.000	0.522**	-0.372**	-0.327**	0.865**	-0.406**
	Sig. (2-tailed)	-	<0.001	<0.001	<0.001	<0.001	<0.001
	N	323	323	323	323	323	323
EFE	Pearson Correlation	0.522**	1.000	-0.076	-0.161**	0.879**	-0.136*
	Sig. (2-tailed)	<0.001	-	0.173	0.004	<0.001	0.014
	N	323	323	323	323	323	323
PFD	Pearson Correlation	-0.372**	-0.076	1	0.486**	-0.252**	0.870**
	Sig. (2-tailed)	<0.001	0.173	-	<0.001	<0.001	<0.001
	N	323	323	323	323	323	323
EFD	Pearson Correlation	-0.327**	-0.161**	0.486**	1.000	-0.277**	0.854**
	Sig. (2-tailed)	<0.001	0.004	<0.001	-	<0.001	<0.001
	N	323	323	323	323	323	323
E	Pearson Correlation	0.865**	0.879**	-0.252**	-0.277**	1.000	-0.307**
	Sig. (2-tailed)	<0.001	<0.001	<0.001	<0.001	-	<0.001
	N	323	323	323	323	323	323
D	Pearson Correlation	-0.406**	-0.136*	0.870**	0.854**	-0.307**	1.000
	Sig. (2-tailed)	<0.001	0.014	<0.001	<0.001	<0.001	-
	N	323	323	323	323	323	323

*Note.* \*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed); PFE – Problem-Focused Engagement, PFD – Problem-Focused Disengagement, EFE – Emotion-Focused Engagement, EFD – Emotion-Focused Disengagement, E – Engagement, D – Disengagement.

## Discussion

This research is part of a comprehensive study of mental health in the extreme conditions of low-intensity war,

martial law, and full-scale war in Ukraine, which has been ongoing since 2014.

Previous studies (Melnyk et al., 2019) have examined the



impact of extreme conditions of low-intensity warfare on military personnel. It was found that the level of resistance of military personnel to combat psychological trauma depends on the impact of extreme conditions (participation in combat operations). There is a high probability of mental disorders, a tendency to personality dysfunction, behavioral and activity disorders, even with slight exposure to extreme conditions (lack of combat experience). The COVID-19 pandemic has added extreme conditions to the already existing conditions of low-intensity warfare in our study of the mental health of military personnel and students. These new conditions made it possible to find out that military personnel with combat experience were significantly less likely to suffer from anxiety, depression, and stress and sleep disorders than military personnel without such experience (Melnyk et al., 2020; Melnyk & Stadnik, 2020). We assumed that the mental health of students in low-intensity war and extreme pandemic conditions would be significantly different from that of trained military personnel. For this reason, we studied only those students who participated in sports. It was found that most students had a moderate level of mental health, about a third had a high level of mental health, and less than 10% had a low level of mental health (Melnyk et al., 2022). Other researchers have found similar results regarding the positive effects of physical activity and sports on the mental health of probationers during this period (Klaus et al., 2023; Senışık et al., 2021). These studies confirm the fact that systematic physical activity has a positive effect on mental health, even under the extreme conditions of a pandemic and/or low-intensity war. The positive role of physical activity on students' mental health has been demonstrated in numerous studies (Biddle et al., 2019; Mahindru et al., 2023; Tyson et al., 2010; White et al., 2017), including in the extreme conditions of the COVID-19 pandemic (Lee et al., 2021; Lukács, 2021; Savage et al., 2020; Zhang et al., 2020).

Studies of student youth in the context of a full-blown war show that the greatest psychogenias are the following: risk of death of relatives, family, separation from relatives, family, lack of work or other source of income, fear of death and risk of loss of property. Associations have also been found between psychological distress and chronic fatigue and sleep disturbances (Stadnik et al., 2022). The relationship between the above aspects is bidirectional, as symptoms can be both a source and a consequence of psychological distress. In addition, the dependence of the psychological state of the students on their physical proximity to the combat zone was revealed. The closer students were to the combat zone, the greater the negative impact on their mental health (Stadnik et al., 2023).

As an extension of previous research on student mental health, this paper focuses on the following understudied aspect of the problem – analysis of the psychological well-being of university students and their choice of coping strategies in overcoming life crises in the context of the war in Ukraine. We took into account our earlier data on the effectiveness of the study by dividing the entire sample of students into groups based on their

proximity to the combat zone.

An important feature of the present study is the following:

- Group 1 was located in an active war zone. During the first 600 days of the full-scale war, the duration of alarms for Kharkiv region amounted to 99 days and nights, 18 hours and 11 minutes, and part of the territory was occupied.

- Group 2 was under the influence of war stressors at the time of the survey. However, this proved to be less significant and the territories were not occupied.

- Group 3 included Ukrainian students residing in Ukraine with the status of internally displaced persons and in EU countries with the status of temporary protection.

Marchi et al. (2022) studied the problems of refugees and migrants in Europe and found that the study participants experienced psychological stress leading to mental health problems. War-related population movements have a negative impact on mental health, which is regularly confirmed by numerous studies (Ben-Ezra et al., 2023; Bogic et al., 2015; Bryant et al., 2022; Mesa-Vieira et al., 2022).

The unprecedented scale of Russian aggression against Ukraine has caused the largest mass displacement of people in modern history (Patel & Erickson, 2022). Studies show that asylum seekers and refugees are particularly vulnerable to traumatic experiences, which are of a threefold nature: pre-migration, peri-migration and post-migration. (Chen et al., 2017). According to the researchers (Michalek et al., 2022), the experience of war and displacement can have profound effects on children's affective development and mental health. However, the mechanisms underlying these effects remain unknown.

The relevance of certain psychological symptoms (anxiety, depression, insomnia, feeling of poor health) among civilians during war is widely recognized by Carpinello (2023); Morina et al. (2018).

Contemporary studies during the Russian-Ukrainian war have shown high prevalence rates of symptoms of psychological distress, anxiety, depression, and insomnia among Ukrainians aged 18 years and older. In addition, the scientists emphasize the need for further research and the development of effective survival strategies for Ukrainians during the war (Khraban, 2022; Xu et al., 2023).

The real need and problem that was identified in the scientific literature, but not solved in practice, determined the choice of the research subject and the techniques we used. In research and practice, the PGWBI and CSI are effective and valid tools.

The PGWBI is widely used in modern research (Gonzales et al., 2023; Maugeria et al., 2020). It also allows analysis and comparison of the data obtained.

Our research has shown that students in Group 1, where the constant shelling causes tension, anxiety, and dissatisfaction with daily activities, have the lowest scores on the anxiety and well-being scales. At the same time, the highest rates of general health are observed among students of Group 3. This shows that poor mood and fatigue have minimal impact on learning outcomes.





The Psychological General Well-Being Index was quite low for most of the students surveyed, due to the presence of many psychogenias caused by the war. This includes shelling of public places, hospitals, schools, energy and supply facilities, resulting in prolonged lack of water, heat, electricity and communications. Representatives of all student groups are moderately distressed. The highest level of distress (the lowest level of PGWBI) was found among students in Group 1 (55.1 points), in the area where active hostilities are taking place. Students in Groups 2 and 3 had lower levels of distress (60.1 points and 63.5 points, respectively), but distress was still in the range of moderate distress for this technique. Only men in all groups showed no distress on a separate scale (general health), indicating their satisfactory general health and well-being. The highest distress (lowest score of all groups) on the positive well-being scale was reported by female students in Group 1 (49.7 points). We believe that this is due to certain psychological characteristics and social roles of women, as well as the fact that they often witness numerous civilian casualties during war.

Previous work using the PGWBI has also largely indicated gender differences, with female students reporting higher levels of distress than male students (De la Rosa et al., 2022).

The use of other research techniques (the Depression Anxiety Stress Scales, DASS-21; General Health Questionnaire, GHQ-28; and the Social Support Questionnaire, F-SozU K-22) in the context of dividing students into groups according to their proximity to the combat zone allowed us to obtain similar results: the manifestations of depression were higher among women than among men. At the same time, severe and extremely severe manifestations of anxiety (2-3 times higher than similar indicators of respondents) were observed among students who were not in the vicinity of the combat zone (Stadnik et al., 2022, 2023). Thus, using different techniques to study this problem leads to similar results. The war had a significant negative impact on the mental state of the students, and the closer they were to the war zone, the greater the impact.

In the study, we took into account the particularities of student youth. For students, studying at a university is usually characterized by drastic psychosocial changes related to interpersonal relationships and the need to adapt to student life. Therefore, not only the effects of war, but also various social aspects of a student's life can significantly affect his or her ability to learn and lead to a deterioration of psychological well-being.

Previous research on the impact of the Russian-Ukrainian war on the mental health of student youth in Ukraine described by predictors determining the impact of specific features of the style of interpersonal behavior on the index of perceived stress, index of coping resources, positive attitude toward others, autonomy, environmental management, personal development, life goals, self-perception, psychological well-being, integration, control, risk acceptance and resilience (Lunov et al., 2023). Effects are also identified and characterized by levels of mental health impact: acute reactions – acute

disorder – chronic stress/disorder both on both personal and societal levels (Vus & Esterlis, 2022). Gilreath et al. (2022) studied stressors that can affect the academic performance and well-being of youth in wartime conditions.

Therefore, it is particularly important to study the strategies that students use to cope with stressful situations under difficult wartime conditions. Coping strategies are different ways of dealing with a stressful situation and are important for everyone's mental health. Furthermore, adaptive coping styles lead to improved mental health, while maladaptive coping styles lead to further deprivation and other mental health problems.

We chose the CSI questionnaire to study coping strategies because it is a reliable, proven, and widely used technique in research for assessing thoughts and behaviors that arise in response to a particular stressor (Pérez-Chacón et al., 2023; Yeh et al., 2023). As a particular type of social behavior, stress coping can either ensure or destroy a person's health and well-being. It allows the subject to cope with stress or inability to function in difficult life situations by being aware of their own actions. In addition, such behavior is aimed at actively interacting with the situation, i.e., changing it (if it is under control) or adapting to it (if it is not under control).

Our research has shown that university students use different coping strategies in the stressful situations of the war in Ukraine. However, the coping strategy of cognitive restructuring is more commonly used. It should also be noted that Group 1 is characterized by coping strategies of social support and self-criticism.

This study has some limitations. First of all, it should be noted that the study was conducted under conditions of active war, which may be the reason for the high values. Another limitation of our study is the small number of participants in each group. A more complex assessment of the students was not possible under these conditions. In our study of Ukrainian students, we used only the Ukrainian language versions of the PGWBI and CSI questionnaires. These versions of the questionnaires eliminated potential errors in question interpretation and optimized response time. Nevertheless, this provided important information that gives a first glimpse into the mental health status of the sample. It also made it possible to draw conclusions that help to take early measures aimed at improving the state of psychological well-being of students, taking into account the peculiarities of the use of coping strategies that they use to overcome life crises.

## Conclusions

Thus, the war in Ukraine negatively affects the psychological well-being of university students – the closer they are to the combat zone, the greater the impact. This influence is also reflected in their use of coping strategies to manage life crises on their own.

The findings add to the knowledge of resources that need to be developed to increase students' resilience and psychological well-being. It can also become the basis for developing modern methods of social and



psychological support for students affected by the war. These methods should be comprehensive and involve the active collaboration of educational stakeholders in developing strategies to overcome difficulties, taking into account the individual psychological, social and cultural characteristics of students. This complex approach can play an important role in developing a sense of security, individual empowerment and “getting back on track”.

The results of the study point to the need for further research on student youth living in areas of active hostilities to determine the long-term consequences of this exposure on their psychological state, as well as the possibilities for optimizing education at universities under martial law.

### Acknowledgments

The authors would like to thank the respondents for their participation in the survey.

### Ethical Approval

The study protocol was consistent with the ethical guidelines of the 1975 Declaration of Helsinki as reflected in a prior approval by the Institution’s Human Research Committee. Permission for research received in the Research Committee of virtue and ethics Scientific Research Institute KRPOCH (protocol No. 023-1/SRI-KRPOCH dated 10.08.2023). Informed consent was sought from all the participants.

### Funding Source

This research did not receive any outside funding or support.

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#### Cite this article as:

Pypenko, I. S., Stadnik, A. V., Melnyk, Yu. B., & Mykhaylyshyn, U. B. (2023). The impact of the war in Ukraine on the psychological well-being of students. *International Journal of Science Annals*, 6(2), 20–31. <https://doi.org/10.26697/ijasa.2023.2.2>

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