



SOCIAL AND BEHAVIORAL SCIENCES. Psychology

ORIGINAL RESEARCH









Mental Health and Life Satisfaction of University Students Influenced by War



Authors' Contribution:

- A – Study design;
- B – Data collection;
- C – Statistical analysis;
- D – Data interpretation;
- E – Manuscript preparation;
- F – Literature search;
- G – Funds collection

Melnyk Y. B.^{1,2 ADEF} , Stadnik A. V.^{1,3 BDE} , Mykhaylyshyn U. B.^{3 BD} ,
Vveinhardt J.^{4,5 FE} , De Frias C. M.^{6,7 E} , Pypenko I. S.^{1,2 CDE} 

¹ Kharkiv Regional Public Organization "Culture of Health", Ukraine

² Scientific Research Institute KRPOCH, Ukraine

³ Uzhhorod National University, Ukraine

⁴ Institute of Sport Science and Innovations, Lithuania

⁵ Lithuanian Sports University, Lithuania

⁶ University of Alberta, Canada

⁷ MacEwan University, Canada

Received: 20.11.2024; Accepted: 22.12.2024; Published: 25.12.2024

Background and Aim of Study:

Abstract

The current situation in Ukraine, where active hostilities are taking place, has had a significant impact on students' mental health and life satisfaction.

The aim of the study: to identify the impact of war on the mental health and life satisfaction of university students.

Material and Methods:

The study was conducted in Ukraine in November 2024. A total of 219 students between the ages of 18 and 35 were surveyed. Respondents were divided into two groups. Group 1 (n=107): those who had been temporarily displaced (in Ukraine and in EU countries), including 20.6% of men and 79.4% of women. Group 2 (n=112): those who had not left their usual place of residence (Ukraine without active hostilities), including 21.4% of man and 78.6% of women. The mental health and life satisfaction of university students influenced by war were assessed using three psychological measures: the Satisfaction with Life Scale (SWLS), the Patient Health Questionnaire (PHQ-9), and the Generalised Anxiety Disorder (GAD-7).

Results:

The SWLS, PHQ-9, and GAD-7 scores showed high internal consistency (Cronbach's alpha of 0.827 to 0.961) in both groups of students. Significant negative correlations of high / moderate strength were found between the SWLS and PHQ-9 depression symptoms / the GAD-7 anxiety disorder. Students who had been internally displaced were extremely dissatisfied (13.1%) and dissatisfied (23.4%) with their lives. These levels of dissatisfaction are almost one-third higher than those who did not leave their usual place of residence (8.9% and 17.9%, respectively). Further detailing of mental health features revealed the presence of depression and anxiety among all the studied groups of students. At the same time, severe depression (8.4%), moderately severe depression (29.0%), and severe anxiety (20.6%) were almost twice as common among students in Group 1 as among students in Group 2 and require psychological support.

Conclusions:

The war had the greatest impact on the mental health and life satisfaction of students who were forced to seek refuge at home and abroad. The data obtained calls for developing and implementing appropriate social and psychological support methods for students affected by the war. These methods should be comprehensive and involve the integration of psychological support into the structure of universities, including individual and group counselling, crisis intervention, psychological training, and student support programmes.

Keywords:

mental health, life satisfaction, anxiety, depression, students, temporarily displaced persons, war



Copyright: © 2024 Melnyk Y. B., Stadnik A. V., Mykhaylyshyn U. B., Vveinhardt J., De Frias C. M., Pypenko I. S. Published by Archives of International Journal of Science Annals

DOI: <https://doi.org/10.26697/ijsa.2024.2.6>

Conflict of interests: The authors declare that there is no conflict of interests

Peer review: Double-blind review

Source of support: This research did not receive any outside funding or support

Information about the authors: **Melnyk Yuriy Borysovych** – <https://orcid.org/0000-0002-8527-4638>; Doctor of Philosophy in Pedagogy, Affiliated Associate Professor; Chairman of Board, Kharkiv Regional Public Organization “Culture of Health” (KRPOCH); Director, Scientific Research Institute KRPOCH, Ukraine.
Stadnik Anatoliy Volodymyrovych – <https://orcid.org/0000-0002-1472-4224>; Doctor of Philosophy in Medicine, Affiliated Associate Professor, Kharkiv Regional Public Organization “Culture of Health”, Uzhhorod National University, Ukraine.
Mykhaylyshyn Ulyana Bohdanivna – <https://orcid.org/0000-0002-0225-8115>; Doctor of Psychological Sciences, Full Professor; Head of the Department of Psychology, Uzhhorod National University, Ukraine.
Vveinhardt Jolita – <https://orcid.org/0000-0001-6231-9402>; Doctor of Social Sciences, Full Professor, Chief Researcher, Institute of Sport Science and Innovations, Lithuanian Sports University, Lithuania.
De Frias Cindy – <https://orcid.org/0009-0005-0501-3833>; Doctor of Philosophy in Psychology, University of Alberta, MacEwan University, Canada.
Pypenko Iryna Sergiivna (Corresponding Author) – <https://orcid.org/0000-0001-5083-540X>; iryana.pipenko@gmail.com; Doctor of Philosophy in Economics, Affiliated Associate Professor, Secretary of Board, Kharkiv Regional Public Organization “Culture of Health”; Scientific Research Institute KRPOCH, Ukraine.

Introduction

The last decade has seen an increase in military conflicts worldwide. In particular, on the territory of Europe, Ukraine is currently engaged in a full-scale war on a scale not seen since the Second World War (Mykhaylyshyn et al., 2024).

As this war threatens the lives of the entire population of this country, a significant number of its citizens have been forced to leave their homes and normal lives to seek refuge within and outside the country. Millions of people have been forced to leave their homes as a result of the massive destruction (Leon et al., 2022; McKee & Murphy, 2022). All of this has led to significant changes in the lives of Ukrainians and affected their mental health. This was particularly felt by more vulnerable groups, including young students (Pypenko et al., 2023). Displacement creates a deep sense of loss, insecurity, and difficulty in adapting to a new environment, and disrupts social networks, including family and community ties. This adds to the emotional burden, increasing depression and anxiety and affecting quality of life (Stadnik et al., 2022).

University students are experiencing social transformations (social crisis, forced displacement, destruction of social ties), educational changes (introduction of new technologies based on distance learning), and psychological strain due to constant stress, which affect their quality of life.

The aim of the study. To identify the impact of war on the mental health and life satisfaction of university students.

This study focuses on the subjective well-being and characteristics of mental disorders of university students living in extreme conditions.

The data obtained are important for the development of appropriate measures of psychological support and psychoprophylaxis for students in war conditions.

Materials and Methods

Participants

The study was conducted during the Russian-Ukrainian war at Uzhhorod National University (Ukraine) in November 2024. The respondents were 219 students aged between 18 and 35. They were divided into 2 groups:

Group 1 – university students who had been temporarily displaced, living in a relatively safe place (Ukraine) or in a safe place (EU country): 107 persons, including 22 (20.6%) males and 85 (79.4%) females.

Group 2 – university students who had not left their usual place of residence, living in a relatively safe place (Uzhhorod, Ukraine, area of no active hostilities): 112 persons, including 24 (21.4%) males and 88 (78.6%) females.

Due to the active phase of the war in Ukraine, the survey of students was conducted remotely by posting psychological methods on the Google Forms platform. In addition, students were observed during distance and face-to-face teaching. Where necessary, individual interviews were conducted.



Mental Health Measures

The Satisfaction with Life Scale, a 5-item scale, SWLS (Diener et al., 1985) was used to assess students' life satisfaction and quality of life. In the present study, the adapted Ukrainian version of the questionnaire by Stadnik and Melnyk was used (<https://forms.gle/9GoFoTZjWnMxrMW5A>).

The SWLS aims to measure the overall perception of quality of life. This allows each respondent to rate the importance of life domains according to their values and provides an overall judgement of life satisfaction. Each of the 5 items is rated on a 7-point Likert scale (1 - strongly disagree; 7 - strongly agree). Higher scores indicate greater life satisfaction.

The SWLS scores showed good internal consistency. The Cronbach's alphas were 0.961 and 0.879 for Group 1 students (who had not left their usual place of residence) and Group 2 students (who had been temporarily displaced), respectively.

Symptoms of depression were assessed using the Patient Health Questionnaire, a 9-item depression scale, PHQ-9 (Kroenke et al., 2001).

In the present study, the Ukrainian adaptation of this questionnaire by Stadnik and Melnyk was used (<https://forms.gle/74BKVXRWHgtL9D75A>).

The PHQ-9 is the depression module. It is widely used in clinical and research settings. It contains 9 questions that meet the criteria for diagnosing depression. Answers to each question are rated on a Likert scale (0 - not at all; 1 - several days; 2 - more than half the days; 3 - nearly every day). The individual answers to the questions are added up to a score of 0 to 27. The severity of depression is usually classified as follows: minimal depression (0-4), mild depression (5-9), moderate depression (10-14), moderately severe depression (15-19), and severe depression (20-27).

The Cronbach's alphas for the PHQ-9 scores in the present study were 0.827 and 0.843 for Group 1 students (who had not left their usual place of residence) and Group 2 students (who had been temporarily displaced) respectively.

The Generalised Anxiety Disorder, a 7-item anxiety scale, GAD-7 (Spitzer et al., 2006) was used to assess anxiety.

As in the two previous diagnostics, we used the adapted Ukrainian version of this questionnaire by Stadnik and Melnyk (<https://forms.gle/5BLmcVxjs36fJ4tR6>).

The GAD-7 is used to measure or assess the severity of generalised anxiety disorder. Each item on the GAD-7 is rated on a Likert scale (0 - not at all; 1 - several days; 2 - more than half the days; 3 - nearly every day).

The individual answers to the questions are combined into a score from 0 to 21, where (0-4) is minimal anxiety, (5-9) is mild anxiety, (10-14) is moderate anxiety, and (15-21) is severe anxiety.

In the present study, we obtained Cronbach's alphas of 0.877 for the GAD-7 scores of Group 1 students (who had not left their usual place of residence) and 0.879 for the GAD-7 scores of Group 2 students (who had been temporarily displaced).

The psychological methods and research procedure used in the study were approved by the Committee on Ethics and Research Integrity of the Scientific Research Institute KRPOCH (protocol no. 024-1/SRIKRPOCH dated 10.08.2023).

Statistical Analysis

All data analysis was performed using IBM SPSS Statistics for Windows (Version 30.0).

The reliability (internal consistency) of the scales was assessed by evaluating internal consistency using Cronbach's alpha test as well as item-test correlations. Scales show good internal consistency when Cronbach's alpha is greater than 0.7. In addition, Pearson correlations were performed between all the items in the scales (inter-item). A value greater than 0.4 indicated that the item was homogeneous in measuring the scale. Divergent validity was evaluated by correlating total scores on the Satisfaction with Life Scale (SWLS) with total scores on the Patient Health Questionnaire (PHQ-9) and Generalised Anxiety Disorder (GAD-7). Convergent validity was assessed by correlating the PHQ-9 total score with the GAD-7 total score. Pearson correlation coefficients were used for both convergent and divergent validity.

Correlation coefficient value between -1 and 1, where a value of -1 indicates an overall negative linear correlation, 0 indicates no correlation, and +1 indicates an overall positive correlation. A strong correlation was indicated by a correlation coefficient value of ≥ 0.5 .

Results

Life satisfaction is a complex, multifactorial, and structurally dynamic phenomenon that serves as a generalised assessment of an individual's quality of life. The issue of life satisfaction is relevant for Ukraine in today's environment.

War has a detrimental effect on people's physical and mental health.

There are, therefore, many factors that determine life satisfaction (personal security, health, family, work, acceptance of circumstances, freedom of choice, etc.), but they all relate to the quality of one's own life.

This is related to the affective aspects of subjective well-being status, such as happiness, joy, depression, anxiety, and stress.

Life satisfaction is, therefore, an important indicator of an individual's quality of life and psychological well-being (Stadnik, 2023).

Table 1 shows the descriptive statistics for each item (life satisfaction criteria): the mean, the standard deviation, and the 95% confidence intervals for Group 1 and Group 2.

The average score of satisfaction with life was 17.26 points (SD 6.64) for Group 1 and 18.66 points (SD 5.93) for Group 2.

The analysis of the reliability of the SWLS showed an internal consistency of 0.961 and 0.879 (Cronbach's alpha) for students who had not left their usual place of residence (Group 1) and students who had been temporarily displaced (Group 2).



Similarly, we confirmed that the inter-item correlation was significant. All items were moderately and highly correlated, with values ranging from 0.563 to 0.896 in both groups (Table 2).

Table 3 shows the life satisfaction among university students during the war.

Table 1
Descriptive Statistics for the Satisfaction with Life Scale Items

Items	Mean		Standard deviation		95% Confidence intervals			
	Group 1	Group 2	Group 1	Group 2	Group 1		Group 2	
					Lower	Upper	Lower	Upper
Item 1	3.28	3.40	1.37	1.33	3.01	3.55	3.20	3.68
Item 2	3.32	3.63	1.30	1.27	3.08	3.60	3.36	3.86
Item 3	3.41	3.44	1.60	1.37	3.11	3.75	3.17	3.72
Item 4	3.64	4.21	1.31	1.29	3.36	3.92	3.97	4.44
Item 5	3.61	3.97	1.58	1.83	3.32	3.91	3.64	4.28
Total	17.26	18.66	6.64	5.93	15.95	18.58	17.42	19.75

Table 2
Inter-Item Correlation Matrix for the Satisfaction with Life Scale Items

Items	Item 1*	Item 2*	Item 3*	Item 4*	Item 5*
Item 1*	-	0.896	0.796	0.789	0.797
Item 2*	0.761	-	0.814	0.830	0.844
Item 3*	0.757	0.700	-	0.856	0.864
Item 4*	0.579	0.563	0.548	-	0.890
Item 5*	0.649	0.595	0.688	0.615	-

Notes. *Correlation is significant at the 0.01 level.
 Correlations for Group 1 are shown above the diagonal and those for Group 2 are below the diagonal.

Table 3
The Assessment of Life Satisfaction Levels among University Students during the War

Life satisfaction level	Group 1, %			Group 2, %		
	Total	Male	Female	Total	Male	Female
Extremely dissatisfied	13.1	27.3	9.4	8.9	8.3	9.1
Dissatisfied	23.4	13.6	25.9	17.9	16.7	18.2
Slightly dissatisfied	22.4	13.6	24.7	30.4	25.0	31.8
Neutral	1.9	4.6	1.2	2.7	4.2	2.3
Slightly satisfied	26.2	27.3	25.9	25.9	29.2	25.0
Satisfied	13.1	13.6	12.9	14.3	16.7	13.6
Extremely satisfied	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

When analysing the level of life satisfaction, it can be seen that the indicators of extremely dissatisfied (13.1%) and dissatisfied (23.4%) with their lives are almost one-third higher among the students of Group 1 who were forced to change their place of residence during the war (living in Ukraine and the EU) than among the students of Group 2 who did not leave their usual place of residence (8.9% and 17.9%, respectively). This was manifested in concerns about their health and the lives of their loved ones, worries about their future in the context of war, socio-economic insecurity, and

deterioration of their financial situation. The percentages of students who are extremely satisfied (0.0%) and satisfied (13.1%) with their lives are about the same for Group 1 (0.0% and 13.1%) and Group 2 (0.0% and 14.3%), with no statistically significant differences.

The gender peculiarities were that the proportion of men in Group 1 who were extremely satisfied with their lives reached 27.3%, which was the highest of all the gender groups and almost three times higher than the proportion of women in Group 1 (9.4%). This indicates their low



psychological well-being and quality of life. It should be noted that the absolute dissatisfaction and dissatisfaction with their lives of men and women in Group 2 are almost identical and have no statistically significant differences.

Life satisfaction is thus a complex, structurally dynamic phenomenon that assesses an individual's quality of life and psychological well-being and depends on many factors. War is a powerful factor that negatively affects life satisfaction. Our research has shown that internally displaced students living in Ukraine and the European Union have indicators of being extremely dissatisfied (13.1%) and dissatisfied (23.4%) with their lives, which are almost a third higher than students who have not left their usual place of residence. At the same time, this indicator is significantly higher for men than for women,

which indicates their low psychological well-being and quality of life. All of this requires psychological help to acquire positive thinking skills, to communicate with positive people and to solve their deep personal problems. Thus, the study showed that even living in safe conditions (in Ukraine and in the EU) does not improve the psychological well-being and quality of life of internally displaced persons but causes a significant emotional distress and the need for psychological help and support.

Further details of psychopathological symptoms were measured using the PHQ-9, and GAD-7 questionnaires. Table 4 shows the manifestations of depression among university students during the war, using the PHQ-9 scores.

Table 4
Levels of Depression Severity among University Students during the War

Depression level	Group 1, %			Group 2, %		
	Total	Male	Female	Total	Male	Female
Minimal	9.4	36.4	2.4	19.6	45.8	12.5
Mild	19.6	13.6	21.2	34.8	16.7	39.8
Moderate	33.6	13.6	38.8	26.8	12.5	30.7
Moderately severe	29.0	22.7	30.6	14.3	16.7	13.6
Severe	8.4	13.6	7.1	4.5	8.3	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Depression is a state of decreased mood, activity, and willpower. Depression is a risk factor for suicide. In Group 1 students, severe depression (8.4%) and moderately severe depression (29.0%) are almost twice as common as in Group 2 (4.5% and 14.3% respectively). At the same time, minimal depression (19.6%) and mild depression (34.8%) are much more common among students in Group 2. The gender differences in depression were as follows. Men in Groups 1 and 2 had a higher proportion of minimal symptoms of depression (36.4% and 45.8%, respectively), than women (2.4% and 12.5%, respectively). This indicates that they probably have latent depression, which manifests itself in substance

abuse, somatic disorders, and behavioural problems. In addition, we found a significantly higher prevalence of severe depression among men in Groups 1 and 2 (13.6% and 8.3%, respectively) than among women (7.1% and 3.4%, respectively). This probably indicates the presence of significant maladjustment in this group of students.

The descriptive statistics for each item (patient health criteria): the mean, the standard deviation, and the 95% confidence intervals for Group 1 and Group 2 are shown in Table 5.

The average score of depression severity was 11.45 points (SD 5.44) for Group 1 and 10.58 points (SD 5.47) for Group 2.

Table 5
Descriptive Statistics for the Depression Scale (Patient Health Questionnaire) Items

Items	Mean		Standard deviation		95% Confidence intervals			
	Group 1	Group 2	Group 1	Group 2	Group 1		Group 2	
					Lower	Upper	Lower	Upper
Item 1	1.64	1.51	0.91	0.87	1.46	1.80	1.31	1.68
Item 2	1.22	1.26	0.90	0.94	1.05	1.42	1.20	1.59
Item 3	1.56	1.39	1.07	0.99	1.37	1.79	1.20	1.59
Item 4	1.72	1.36	0.96	0.90	1.51	1.89	1.21	1.57
Item 5	0.97	0.98	0.83	0.82	0.76	1.16	0.84	1.14
Item 6	1.25	1.07	1.02	0.89	1.04	1.42	0.92	1.27
Item 7	1.35	1.29	0.94	0.89	1.15	1.51	1.12	1.47
Item 8	0.96	0.96	0.85	0.87	0.81	1.12	0.79	1.10
Item 9	0.77	0.76	0.90	1.04	0.58	0.94	0.56	1.00
Total	11.45	10.58	5.44	5.47	10.36	12.62	9.51	11.51



The analysis of the reliability of the PHQ-9 showed an internal consistency of 0.827 and 0.843 (Cronbach's alpha) for students who had not left their usual place of residence (Group 1) and students who had been temporarily displaced (Group 2). Similarly, we confirmed that the inter-item correlation was significant.

All items had moderate to high correlations with the scale (item test), with values, ranging from 0.401 to 0.597 in both groups (Table 6).

Table 7 shows the manifestations of anxiety among university students during the war.

Table 6

Inter-Item Correlation Matrix the Depression Scale (Patient Health Questionnaire) Items

Items	Item 1*	Item 2*	Item 3*	Item 4*	Item 5*	Item 6*	Item 7*	Item 8*	Item 9*
Item 1*	-	0.412	0.467	0.413	0.485	0.510	0.440	0.427	0.482
Item 2*	0.579	-	0.497	0.589	0.409	0.470	0.506	0.544	0.578
Item 3*	0.484	0.492	-	0.503	0.549	0.503	0.494	0.411	0.484
Item 4*	0.588	0.413	0.567	-	0.546	0.449	0.515	0.496	0.551
Item 5*	0.441	0.430	0.543	0.537	-	0.432	0.526	0.483	0.559
Item 6*	0.409	0.530	0.517	0.597	0.425	-	0.527	0.541	0.565
Item 7*	0.567	0.480	0.401	0.421	0.417	0.583	-	0.583	0.509
Item 8*	0.551	0.576	0.489	0.466	0.621	0.424	0.445	-	0.524
Item 9*	0.466	0.554	0.416	0.401	0.408	0.418	0.535	0.458	-

Notes. *Correlation is significant at the 0.01 level.

Correlations for Group 1 are shown above the diagonal and those for Group 2 are below the diagonal.

Table 7

Levels of Anxiety among University Students during the War

Anxiety level	Group 1, %			Group 2, %		
	Total	Male	Female	Total	Male	Female
Minimal	14.0	13.6	14.1	28.6	54.2	21.6
Mild	27.1	18.2	29.4	33.9	8.3	40.9
Moderate	38.3	36.4	38.8	26.8	12.5	30.7
Severe	20.6	31.8	17.7	10.7	25.0	6.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Anxiety is characterised by the expectation of adverse developments, bad premonitions, fear, tension and excitement, leading to chronic fatigue and a deterioration in the quality of life. The feeling of severe and moderate anxiety was more pronounced among students in Group 1 (20.6% and 38.3%, respectively) than in Group 2 (10.7% and 26.8%, respectively), which manifested itself in an inability to concentrate, helplessness, confusion, extreme anxiety and negatively affected the activity and quality of the students' learning. Minimal anxiety (28.6%) and mild anxiety (33.9%) prevailed among students in Group 2. Gender differences between the study groups included a significant prevalence of severe anxiety among males in Groups 1 and 2 (31.8% and 25.0%, respectively) compared to females (17.7% and 6.8%, respectively), indicating their significant maladjustment. Indicators of mild anxiety were most pronounced in women in Group 2 (40.9%) and minimal anxiety in men in Group 2 (54.2%), indicating a better state of mental health. Thus, the study of students' mental health showed the presence of depression and anxiety in all the groups of students studied, which definitely affected their life satisfaction. At the same time, the rates of severe depression (8.4%), moderate depression (29.0%) and severe anxiety (20.6%) among students in Group 1 were almost double those of students in Group 2 (4.5%,

14.3%, and 10.7%, respectively). This manifested itself in feelings of tension, anxiety, emptiness, loss of interest in learning, low self-esteem, occasional agitation, or general apathy. Even staying in safe conditions is stressful for internally displaced students. Lack of permanent housing, financial difficulties and uncertainty about the future lead to increased dissatisfaction with their lives and increased manifestations of depression and anxiety. This requires developing and implementing appropriate social and psychological support methods for students affected by the war.

The descriptive statistics for each item (anxiety disorder criteria): the mean, the standard deviation, and the 95% confidence intervals for Group 1 and Group 2 are shown in Table 8. The average score of anxiety disorder was 9.80 points (SD 4.82) for Group 1 and 9.81 points (SD 4.82) for Group 2.

The analysis of the reliability of the GAD-7 showed a high internal consistency (Cronbach's alpha) for students who had not left their usual place of residence, Group 1, and students who had been temporarily displaced, Group 2. Similarly, we confirmed that the inter-item correlation was significant.

All items had high correlations with the scale (item test), with values ranging from 0.402 to 0.689 in both groups (Table 9).



Table 8

Descriptive Statistics for the Anxiety Scale (Generalised Anxiety Disorder) Items

Items	Mean		Standard deviation		95% Confidence intervals			
	Group 1	Group 2	Group 1	Group 2	Group 1		Group 2	
					Lower	Upper	Lower	Upper
Item 1	1.87	1.81	0.96	1.01	1.71	2.08	1.63	1.97
Item 2	1.23	1.19	0.91	0.94	1.06	1.42	1.04	1.36
Item 3	1.40	1.35	0.91	0.94	1.22	1.60	1.20	1.49
Item 4	1.47	1.27	0.94	1.06	1.29	1.68	1.05	1.45
Item 5	1.21	0.80	0.85	0.87	1.03	1.37	0.65	1.00
Item 6	1.57	1.36	0.91	0.99	1.32	1.75	1.13	1.53
Item 7	1.07	0.94	0.86	0.90	0.89	1.21	0.78	1.13
Total	9.80	9.81	4.82	4.82	8.83	10.80	7.62	9.72

Table 9

Inter-Item Correlation Matrix the Anxiety Scale (Generalised Anxiety Disorder) Items

Items	Item 1*	Item 2*	Item 3*	Item 4*	Item 5*	Item 6*	Item 7*
Item 1*	-	0.630	0.653	0.618	0.406	0.591	0.443
Item 2*	0.649	-	0.781	0.477	0.400	0.419	0.415
Item 3*	0.689	0.687	-	0.565	0.409	0.422	0.437
Item 4*	0.673	0.523	0.606	-	0.407	0.618	0.554
Item 5*	0.409	0.457	0.440	0.402	-	0.489	0.443
Item 6*	0.630	0.474	0.440	0.643	0.641	-	0.517
Item 7*	0.402	0.481	0.408	0.508	0.501	0.491	-

Notes. *Correlation is significant at the 0.01 level.

Correlations for Group 1 are shown above the diagonal and those for Group 2 are below the diagonal.

The internal consistency results for the scales (the Satisfaction with Life Scale, SWLS, the Patient Health

Questionnaire, PHQ-9, and the Generalised Anxiety Disorder, GAD-7) are presented in Table 10.

Table 10

Internal Consistency for the SWLS, PHQ-9, and GAD-7

Measures	Cronbach's alpha values	
	Group 1	Group 2
Satisfaction with Life Scale (SWLS)	0.961	0.879
Patient Health Questionnaire (PHQ-9)	0.827	0.843
Generalised Anxiety Disorder (GAD-7)	0.877	0.879

The internal consistency results showed that the scales of the SWLS, the PHQ-9 and the GAD-7 had a high degree of internal consistency with Cronbach's alpha values above 0.8. The results indicate that all items contributed well to measuring the SWLS, the PHQ-9,

and GAD-7 scales, as all item correlations were above 0.4.

Table 11 shows the correlations between the SWLS and the corresponding validation measures of psychopathological symptoms.

Table 11

Correlations between the SWLS, PHQ-9, and GAD-7 Scores

Validity measures	Patient Health Questionnaire (PHQ-9)	Generalised Anxiety Disorder (GAD-7)	Satisfaction with Life Scale (SWLS)
<i>Convergent validity</i>			
Patient Health Questionnaire (PHQ-9)	-	0.797	-0.448
Generalised Anxiety Disorder (GAD-7)	0.762	-	-0.614
<i>Divergent validity</i>			
Satisfaction with Life Scale (SWLS)	-0.414	-0.586	-

Notes. *Correlation is significant at the 0.01 level.

Correlations for Group 1 are shown above the diagonal and those for Group 2 are below the diagonal.



The significant positive strong correlation ($r \geq 0.50$) between the PHQ-9 (depression symptoms) and the GAD-7 (anxiety disorder) scores provided evidence of convergent validity ($r = 0.797$, $p < 0.001$ and $r = 0.762$, $p < 0.001$ for Group 1 and Group 2, respectively).

These results are consistent with the findings of other studies on anxiety and depression (Almadani et al., 2024; Blenkiron and Goldsmith, 2019; Casares et al., 2024; Fortini et al., 2024; Mukuria et al., 2024; Sikström et al., 2023; Titov et al., 2022; Xiao et al., 2022).

As expected, depression symptoms (PHQ-9) and anxiety disorder (GAD-7) were negatively correlated with the Satisfaction with Life Scale (SWLS). The correlations obtained had moderate ($r \geq 0.30$) and high ($r \geq 0.50$) effect sizes.

The significant negative correlations of moderate strength were found between the SWLS and the PHQ-9 depression symptoms ($r = -0.448$, $p < 0.001$), and high strength between the SWLS and the GAD-7 anxiety disorder ($r = -0.614$, $p < 0.001$) for Group 1 students (who had been temporarily displaced). For students in Group 2 (who had not left their usual place of residence), significant negative correlations of moderate and high strength were found ($r = -0.414$, $p < 0.001$; $r = -0.586$, $p < 0.001$ respectively). This significant negative correlation supported the evidence for a divergent validity.

The results are consistent with the findings of other studies (Neto et al., 2024; Sikström et al., 2023; Titov et al., 2022; Valenti & Faraci, 2024; Xiao et al., 2022).

Therefore, we observed a significant increase in depression and anxiety among students who were forced to change their place of residence during the war, probably related to being in a place far from home, an unfamiliar place.

They cannot adequately assess the threat to their homes because they only know about it from the media and their relatives back home. These factors increase uncertainty, depression, and anxiety, deepening the chronic stress phase.

The loss of control over one's situation and one's life, the difficulty of adapting to new living conditions, aggravated by the blurring of one's personal identity and the longing for one's place of residence, are also reasons for the destructive effects.

Discussion

Psychological research ("Mississippi Scale for Combat-Related Post-traumatic Stress Disorder"; "Depression Anxiety Stress Scales"; "Insomnia Severity Index" techniques were used), conducted in Ukraine among military men aged 18 to 40 during low-intensity warfare and the coronavirus pandemic confirms that military personnel with combat experience are significantly less likely to suffer from anxiety, depression, stress, and sleep disorders than military personnel without such experience (Melnyk et al., 2020).

These points to the possibility of triggering the adaptation processes of the individual in extreme conditions, burdened by the simultaneous conditions of warfare and pandemic.

The General Health Questionnaire, to assess psychological well-being and emotional stability, and the Social Support Questionnaire, to determine the specifics of emotional support, practical support, and social integration, have been used in psychological studies of student youth. These studies have found a correlation between general health measures and psychological well-being and permanent residence in or near a combat zone (Stadnik et al., 2023). The authors suggest that the closer the students are to the combat zone, the greater the negative impact on their mental health.

Experiences of insecurity, instability, violence and prolonged stress caused by war can have long-term negative effects on students' mental health, which become apparent after several years (Yousef et al., 2021; Kassa et al., 2024). One of the main threats is the development of post-traumatic stress disorder, which can be manifested by persistent memories of war experiences, anxiety attacks, emotional detachment and difficulties in maintaining social relationships (Yousef et al., 2021; Kassa et al., 2024; Kassaye et al., 2023).

The effects of chronic stress can also manifest themselves in a variety of psychosomatic disorders, such as sleep disturbances, chronic fatigue, cardiovascular and digestive disorders, neurodegenerative disorders or autoimmune diseases (Oroian et al., 2021). These processes can be further complicated by prolonged uncertainty, feelings of insecurity, lack of support and financial hardship, which raises the need for long-term programmes that promote a systemic approach to individuals' adaptation, psychological and physical recovery (Yousef et al., 2021; Oroian et al., 2021).

Spiritual support can meaningfully complement psychological and social support measures for students who have been through various traumatic experiences (Hogue, 2024). Research shows that various religious practices, such as meditation, prayer, participation in religious ceremonies, and spiritual counselling, help to cope with the negative consequences of violent experiences, reduce anxiety and build emotional resilience (Hogue, 2024; Deikus & Vveinhardt, 2024; Vveinhardt & Deikus, 2021).

Universities could, therefore, offer intervention programmes, meditation groups, spiritual counselling services, or reflective spaces to help build an inclusive and supportive community and forge meaningful interpersonal relationships (Idoate et al., 2019; Scalora et al., 2020; Scalora et al., 2022).

Conclusions

Every Ukrainian felt the effects of the war. Millions of Ukrainian citizens have been forced to flee their homes and/or adapt to new living conditions in order to save their lives.

Students, as one of the most vulnerable sectors of the population, are affected by social changes (social crisis, forced displacement, destruction of social ties), changes in education (introduction of new technologies and distance learning), and psychological stress due to constant stress (death of relatives and friends, loss of housing and property, financial problems, etc.).



The disruption of social networks, including family and community ties, adds to the emotional distress, increasing depression and anxiety and affecting students' mental health and life satisfaction.

A study we conducted in November 2024 showed that Group 1 students who are internally displaced and living in Ukraine and the European Union have indicators of absolute dissatisfaction (13.1%) and dissatisfaction (23.4%) with their lives. This is almost a third higher than for Group 2 students who did not leave their usual place of residence (8.9% and 17.9%, respectively). This was manifested in concern for their health and the lives of their relatives, worries about their future in the context of war, socio-economic insecurity and deterioration of their financial situation. At the same time, absolute dissatisfaction with life among men in Group 1 reached 27.3%, the highest of all gender groups and almost three times higher than among women in Group 1 (9.4%). This indicates their low psychological well-being and quality of life.

Further examination of mental health characteristics revealed the presence of depression and anxiety in all groups of students studied. At the same time, the rates of severe depression (8.4%), moderate depression (29.0%) and severe anxiety (20.6%) among students in Group 1 were almost double those of students in Group 2 (4.5%, 14.3% and 10.7%, respectively). This manifested itself in feelings of tension, anxiety, emptiness, loss of interest in learning, low self-esteem, occasional agitation or general apathy.

Thus, students who have been forced to change their place of residence and are currently in safe conditions remain under the influence of stressors. Lack of permanent housing, financial difficulties and uncertainty about the future lead to increased dissatisfaction with their lives and increased manifestations of depression and anxiety. This requires the development and implementation of appropriate methods of social and psychological support for students affected by the war, especially for those who have been internally displaced and need to continue their distance learning at university. This activity should be comprehensive and include psychological, social, medical and other types of support for students. The main areas of support can probably include individual and group counselling, crisis intervention, psychological training, and student support programmes.

Acknowledgments

We would like to express our deepest gratitude to all the students of Uzhhorod National University, Ukraine, who, despite the difficulties of martial law in the country, found the time to complete the questionnaires for this study.

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.

Research permission was granted by the Committee on Ethics and Research Integrity of the Scientific Research Institute KRPOCH (protocol no. 024-1/SRIKRPOCH dated 10.08.2023). Informed consent was obtained from all the participants.

Funding Source

This research did not receive any outside funding or support.

References

- Almadani, A. H., Alsubaihi, A. A., Alsqabi, H. A., Alkathiri, M. A., Alassaf, M. I., Alagel, O. A., Alshowihi, S. S., & Alolayan, M. A. (2024). Comparison of depression and anxiety in first-versus non-first generation Saudi medical students: A cross-sectional study. *Medicine* 103(30), Article e39115. <https://doi.org/10.1097/MD.00000000000039115>
- Blenkiron, P., & Goldsmith, L. (2019). Patient-reported outcome measures in community mental health teams: Pragmatic evaluation of PHQ-9, GAD-7 and SWEMWBS. *BJPsych Bulletin*, 43(5), 221–227. <https://doi.org/10.1192/bjb.2019.20>
- Casares, M. A., Díez-Gómez, A., Pérez-Albéniz, A., Lucas-Molina, B., & Fonseca-Pedrero, E. (2024). Screening for anxiety in adolescents: Validation of the Generalized Anxiety Disorder Assessment-7 in a representative sample of adolescents. *Journal of Affective Disorders*, 354, 331–338. <https://doi.org/10.1016/j.jad.2024.03.047>
- Deikus, M., Vveinhardt, J. (2024). "God is always on my side": internal and external predictors of workplace bullying targets' help-seeking behavior in a religious context. *Frontiers in Psychology*, 15, Article 1481718. <https://doi.org/10.3389/fpsyg.2024.1481718>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13
- Fortini, S., Costanzo, E., Rellini, E., Amore, F., Mariotti, S. P., Varano, M., Parravano, M., Virgili, G., Bandello, F., Rizzo, S., & Turco, S. (2024). Use of the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) questionnaires for clinical decision-making and psychological referral in ophthalmic care: A multicentre observational study. *BMJ Open*, 14(1), Article e075141. <https://doi.org/10.1136/bmjopen-2023-075141>
- Hogue, D. (2024). Introduction: Rites for wounded communities. *Liturgy*, 39(2), 1-3. <https://doi.org/10.1080/0458063X.2024.2330325>
- Idoate, R., Tibbits, M., Gilbert, M. A., Desmarais, M. M., Fisher, C. M., Bower, A., Shipp, D. J., & Kaminski, J. (2019). Promoting spiritual wellness on a college campus through community based participatory research. *International Journal of Transpersonal Studies*, 38(2). <https://doi.org/10.26181/16959337.v1>



- Kassa, M. A., Fenta, S., Anbesaw, T., Tesfa, N. A., Zemariam, A. B., Kassaw, G. M., Abate, B. B., & Semagn, E. G. (2024). Post-traumatic stress disorder and associated factors among high school students who experienced war in Woldia town. *Frontiers in Psychiatry, 15*, Article Article 1359370. <https://doi.org/10.3389/fpsy.2024.1359370>
- Kassaye, A., Demilew, D., Fanta, B., Mulat, H., Ali, D., Seid, J., Mulugeta, A., & Dereje, J. (2023). Post-traumatic stress disorder and its associated factors among war-affected residents in Woldia town, North East Ethiopia, 2022; community based cross-sectional study. *PLoS One, 18*(12), Article e0292848. <https://doi.org/10.1371/journal.pone.0292848>
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*(9), 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Leon, D. A., Jdanov, D., Gerry, C. J., Grigoriev, P., Jasilionis, D., Mckee, M., Mesle, F., Penina, O., Twigg, J., Vallin, J., & Vagero, D. (2022). The Russian invasion of Ukraine and its public health consequences. *The Lancet Regional Health – Europe, 15*, Article 100358. <https://doi.org/10.1016/j.lanepe.2022.100358>
- McKee, M., & Murphy, A. (2022). Russia invades Ukraine again: How can the health community respond? *BMJ, 376*, Article o548, <https://doi.org/10.1136/bmj.o548>
- Melnyk, Yu. B., Stadnik, A. V., & Pypenko, I. S. (2020). Resistance to post-traumatic stress reactions of vulnerable groups engaged in pandemic liquidation. *International Journal of Science Annals, 3*(1), 35–44. <https://doi.org/10.26697/ijsa.2020.1.5>
- Mukuria, C., Franklin, M. & Hinde, S. (2024). Mapping functions for the PHQ-9 and GAD-7 to generate EQ-5D-3L for economic evaluation. *The European Journal of Health Economics, 107*. <https://doi.org/10.1007/s10198-024-01692-0>
- Mykhaylyshyn, U. B., Stadnik, A. V., Melnyk, Yu. B., Vveinhardt, J., Oliveira, M. S., & Pypenko, I. S. (2024). Psychological stress among university students in wartime: A longitudinal study. *International Journal of Science Annals, 7*(1), 27–40. <https://doi.org/10.26697/ijsa.2024.1.6>
- Neto, J., & Neto, F. (2024). The Abbreviated 3-Item Versions of the Satisfaction with Life Scale and the Satisfaction with Love Life Scale. *Sage Open, 14*(4). <https://doi.org/10.1177/21582440241296916>
- Oroian, B. A., Ciobica, A., Timofte, D., Stefanescu, C., & Serban, I. L. (2021). New metabolic, digestive, and oxidative stress-related manifestations associated with posttraumatic stress disorder. *Oxidative Medicine and Cellular Longevity, 2021*(1), Article 5599265. <https://doi.org/10.1155/2021/5599265>
- 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/ijsa.2023.2.2>
- Scalora, S., Anderson, M., Crete, A., Drapkin, J., Portnoff, L., Athan, A., & Miller, L. (2020). A spirituality mind-body wellness center in a university setting: A pilot service assessment study. *Religions, 11*(9), Article 466. <https://doi.org/10.3390/rel11090466>
- Scalora, S. C., Anderson, M. R., Crete, A., Mistur, E. J., Chapman, A., & Miller, L. (2022). A campus-based spiritual-mind-body prevention intervention against symptoms of depression and trauma: An open trial of awakened awareness. *Mental Health & Prevention, 25*, Article 200229. <https://doi.org/10.1016/j.mhp.2022.200229>
- Sikström, S., Kelmendi, B. & Persson, N. (2023). Assessment of depression and anxiety in young and old with a question-based computational language approach. *Mental Health Research, 2*, Article 11. <https://doi.org/10.1038/s44184-023-00032-z>
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine, 166*(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Stadnik, A. V., Melnyk, Yu. B., Mykhaylyshyn, U. B., & de Matos, M. G. (2023). Peculiarities of the psychological well-being and social adaptation of young students and cadets in wartime conditions. *International Journal of Science Annals, 6*(1), 22–30. <https://doi.org/10.26697/ijsa.2023.1.7>
- Stadnik, A. V., Melnyk, Yu. B., Babak, S. A., Vashchenko, I. V., & Krut, P. P. (2022). Psychological distress among students and cadets of universities in the war conditions. *International Journal of Science Annals, 5*(1-2), 20-29. <https://doi.org/10.26697/ijsa.2022.1-2.0>
- Titov, N., Dear, B.F., Bisby, M.A., Nielssen, O., Staples, L.G., Kayrouz, R., Cross, S., & Karin, E. (2022). Measures of daily activities associated with mental health (Things You Do Questionnaire): Development of a preliminary psychometric study and replication study. *JMIR Formative Research, 6*(7), Article e38837. <https://doi.org/10.2196/38837>
- Valenti, G. D., & Faraci, P. (2024). Psychometric properties and measurement invariance of the English version of the Satisfaction with Life Scale (SWLS) for non-native English speakers. *European Journal of Investigation in Health, Psychology and Education, 14*(6), 1712-1721. <https://doi.org/10.3390/ejihpe14060113>
- Vveinhardt, J., & Deikus, M. (2021). Search for spiritual assistance in religious organizations: What are the motives of persons who have experienced destructive relationships at work? *Frontiers in Psychology, 12*, Article 702284. <https://doi.org/10.3389/fpsyg.2021.702284>



Xiao, P., Chen, L., Dong, X., Zhao, Z. Yu. J., Wang, D., & Li, W. (2022). Anxiety, depression, and satisfaction with life among college students in China: Nine months after initiation of the outbreak of COVID-19. *Frontiers in Psychiatry*, 12, Article 777190. <https://doi.org/10.3389/fpsy.2021.777190>

Yousef, L., Ebrahim, O., AlNahr, M. H., Mohsen, F., Ibrahim, N., & Sawaf, B. (2021). War-related trauma and post-traumatic stress disorder prevalence among Syrian university students. *European Journal of Psychotraumatology*, 12(1), Article 1954774. <https://doi.org/10.1080/20008198.2021.1954774>

Cite this article as:

Melnyk, Y. B., Stadnik, A. V., Mykhaylyshyn, U. B., Vveinhardt, J., De Frias, C. M., & Pypenko, I. S. (2024). Mental health and life satisfaction of university students influenced by war. *International Journal of Science Annals*, 7(2), 1–11. <https://doi.org/10.26697/ijasa.2024.2.6>

The electronic version of this article is complete. It can be found online in the IJSA Archive <https://ijsa.culturehealth.org/en/arhiv>



This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited (<http://creativecommons.org/licenses/by/4.0/deed.en>).