

# Risk Factors for Substance Use among University Students in Ukraine during Wartime

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**Citation** | Myshakivska, O., Polyvianaia, M., Yachnik, Y., & Pinchuk, I. (2024). Risk factors of substance use among university students in Ukraine during wartime. *Adiktologie*, 24(2), 119–129. <https://doi.org/10.35198/01-2024-002-0001>

**INTRODUCTION:** The impact of ongoing conflict in the country on substance use among youth remains unclear. This study aims to identify the risk factors for substance use among university students and their association with mental health problems and sociodemographic characteristics during the war in Ukraine. **METHODS:** University students (N =1398) in Ukraine aged 18-20 (75.5% female) completed surveys on substance use, PTSD, depressive and anxiety symptoms, and a brief screening for insomnia and suicidal behavior. ANOVA analysis was used to examine interaction between sociodemographic characteristics and CRAFT risk score, and ANCOVA analysis to explore the interaction between covariates. Additionally, we applied the Pearson correlation adjusted with Benjamini-Hochberg procedure to determine correlations of main variables with substance use intensity. **RESULTS:** A total of 66.4% of university students reported alcohol use, 11.5% had used other substances. The vast majority of students had a trauma experience (91.1%), and more than half experienced multiple trauma (62.0%). Students of relatively older age, those who were relocated twice (inside Ukraine

and abroad or abroad and back to Ukraine), stopped education, or were on academic leave used substances more. Any traumatic experience was associated with more intensive substance consumption. Living with relatives and having better wellbeing before the war was connected with lower substance use.

**CONCLUSIONS:** Traumatic experiences and unsecure living environment due to the ongoing war in Ukraine put Ukrainian students at high risk of further increases of mental health and substance use issues. Preventive measures are needed to protect students from the war adversities and to help them develop psychological resilience.

**Keywords** | Students – Substance Use – Mental Health – Ukraine – War

**Submitted** | 20 May 2024

**Accepted** | 26 August 2024

**Grant affiliation** | The article has been prepared based on the results of the research project that was implemented with the grant support of the National Research Fund of Ukraine (project registration number 2022.01/0030).

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## 1 INTRODUCTION

Previous studies on the impact of armed conflicts on mental well-being have established that war has multifaceted consequences for people (Charlson et al., 2019; Chouhan, 2016; Kurapov et al., 2023a; Østergaard et al., 2023; Predko et al., 2023). War is usually associated with changes in daily lifestyles, redistribution of resources, destruction of social ties and life-threatening situations, which in turn generates a whole range of health problems (Chudzicka-Czupala et al., 2023; Lushchak et al., 2023).

The impact of war is particularly noticeable among young people, particularly students, who bear a double burden of stress (Kurapov et al., 2023b; Pavlova & Rogowska, 2023; Pinchuk et al., 2024). From the beginning of the full-scale Russian invasion on February 22, 2022, until today, Ukrainian students are under the constant threat of missile attacks, see terrible pictures of destroyed buildings, lose relatives and friends, and at the same time continue their studies (Tamilina et al., 2023).

In conflict settings, exposure to aggressive and traumatic events may be associated with substance use, which can act as a coping strategy (Ezard, 2021; Malla, 2021). However, other studies show that exposure to armed conflict and forced displacement does not increase alcohol consumption among the entire conflict-affected population compared to the non-conflict population in the same country (Luitel et al., 2013; Roberts et al., 2014).

The national report on the situation with drugs and alcohol, conducted in Ukraine in 2022 among respondents aged 15–24 years, showed that 18.8% of them used psychoactive substances. In a 2023 cross-sectional study of war-exposed Ukrainian adolescents aged 15–18 years (Goto et al., 2024), 20.5% screened positive for moderate risk or higher for substance use disorder (CRAFT 2.1) young people.

Studies of students conducted in Ukraine before the war showed different findings. Thus, according to the results of the ESPAD study in 2019, alcohol consumption among students over 16 years of age in Ukraine during their lifetime was 85%, and illicit drug use was 8.6%. Pavlenko et al. (2022) found that 70.8% of students in Ukraine had used substances in the past month.

The literature also provides various data on risk factors for substance use among young people. Risk factors include age (Esmaeelzadeh et al., 2018), gender (Roberts et al., 2014), stress exposure (Istasy et al., 2019; Martin et al., 2020), traumatic experiences (WHO World Mental Health Survey, 2022), level of education (Grant et al., 2012; Martsenkovskiy et al., 2024), living conditions, in particular, living on campus (Gavurová et al., 2021), low self-regulation (Kalina et al., 2021). The association of early initiation of alcohol, cigarette, and cannabis/marijuana use with suicidal thoughts and attempts in young people in France and the United States has also been confirmed (Swahn et al., 2012).

Many authors have pointed to the association of substance use with mental health problems (Blows & Isaacs, 2022; Burlaka et al., 2021; Farrell et al., 2001). In particular, Cranford et al. (2009) found that frequent binge drinking among college students

was negatively associated with major depression and positively associated with generalized anxiety disorder, and these associations were significantly stronger in men than women. The results of Conway et al. (2006) show that comorbid mental disorders may increase the risk of more severe illicit drug use disorders and that higher comorbidity between mood, anxiety and substance use disorders is observed in women.

According to many authors, one of the main factors that prevents the use of psychoactive substances by students is their support from family and parents (Hogue et al., 2021; Kopak et al., 2012; Lee et al., 2022). According to the study of Sonmez et al. (2016), lifetime substance use among college students depended on factors related specifically to the family, its structure, parental attitudes, intra-family relationships, parental socioeconomic status, parental substance use, and parental control (Görgülü et al., 2016).

Given the diversity of existing data on this issue, we conducted our own research to determine the factors associated with the use of psychoactive substances among Ukrainian students during the war.

**The aim** of this study was to identify the risk factors for substance use among university students and its association with mental health problems and sociodemographic characteristics during the ongoing war in Ukraine.

## 2 METHODS

### 2.1 Study design and population

We conducted an analytical qualitative cross-sectional study. To facilitate participants' enrollment we wrote to the rectors of universities, from different regions of Ukraine (center-north-south-west-east). The respondent group consisted of university students from 17 higher educational institutions located in different regions of Ukraine, as well as those who were abroad. Data was collected between 25.09.2023 and 09.11.2023, using an anonymous and confidential Qualtrics online survey that was distributed through Viber, Facebook groups and Telegram channels. At the beginning of the survey, participants were asked to read the description and fill out an informed consent form. At the end of the survey, a list of resources where participants can find mental health support was provided.

A total of 2364 students from all regions of Ukraine took part in the survey. 54 individuals refused to sign informed consent, 912 students answered less than half of questions of the survey. Thus, the responses of 1398 participants were subjected to statistical analysis.

We collected demographic data, including age, gender, and year of study. We asked whether the person was resettled within the country or abroad, and how this affected the educational process. We also asked students about their wellbeing and experience of traumatic events, and whether they had been able to receive any support from social networks, close ones or professional support from mental health specialists.

## 2.2 Statistical analysis

Categorical variables are presented as descriptive statistics, and continuous variables are expressed as mean ± standard deviation (M ± SD); we used t-test and analysis of variance (ANOVA) to determine the differences in CRAFFT risk between participant characteristic-based groups. Namely, we ran a set of ANOVA analyses to investigate each class of variables relating to CRAFFT risk. In cases where the choice was unique (e.g. age group, relocation) we ran a 1-way ANOVA where we determined the effect of each group on CRAFFT risk. However, we also faced cases where a variable had overlapping, multiple choice questions (e.g. “Living during the war”) where instead we split each yes/no question into its own factor, and ran a factorial ANOVA with all the questions within a variable (e.g. “alone”, “with child”, etc.). After that we ran an additional ANOVA to disambiguate key socio-demographic factors affecting CRAFFT risk. The correlation analysis was performed using Pearson correlation test, adjusted with Benjamini-Hochberg procedure.

We also ran a factorial ANCOVA looking at the effect of mental health risk factors on CRAFFT risk, including 5 different independent covariates.

All the analyses above were conducted using Python 3.11 software, and p value < 0.05 was defined as statistically significant.

## 2.3 Instruments

Measures included the CRAFFT Screening Test, a validated substance use screening tool (Knight et al., 1999). CRAFFT scores indicate a higher likelihood that the student meets criteria for a DSM-5 Substance Use Disorder of any level (mild, moderate, severe). A “low risk” student is defined as one that reports NO use in the past 12 months and CRAFFT score of 0; “medium risk” could be met in two ways: NO use in the past 12 months and YES to the CAR question, or ANY use in the past 12 months and CRAFFT score of < 2; Students are considered “high risk” if they report any use in the past 12 months and have a CRAFFT score of 2 or more (The CRAFFT 2.1 Manual, 2018).

Mental health symptoms were measured with the following questionnaires: Depression Scale PHQ-9 a brief severity of depression (Kroenke et al., 2001); the Primary Care PTSD Screen for DSM-5 (PC-PTSD-5) (Prins et al., 2016); the Brief Measure for Assessing Generalized Anxiety Disorder (GAD-7) (Spitzer et al., 2006); the Insomnia Severity Index (ISI) a brief screening tool for insomnia (Morin, 1993) and self-report tool for screening and measuring the self-report tool designed for the evaluation of suicidal behavior PSS (Paykel et al., 1974).

## 2.4 Ethical considerations

The study was approved by the Ethics Committees of the Institute of Psychiatry of the Taras Shevchenko National University of Kyiv (No.1, 17.07.2023) and ensured compliance with research ethics in accordance with the Declaration of Helsinki and confidentiality principles.

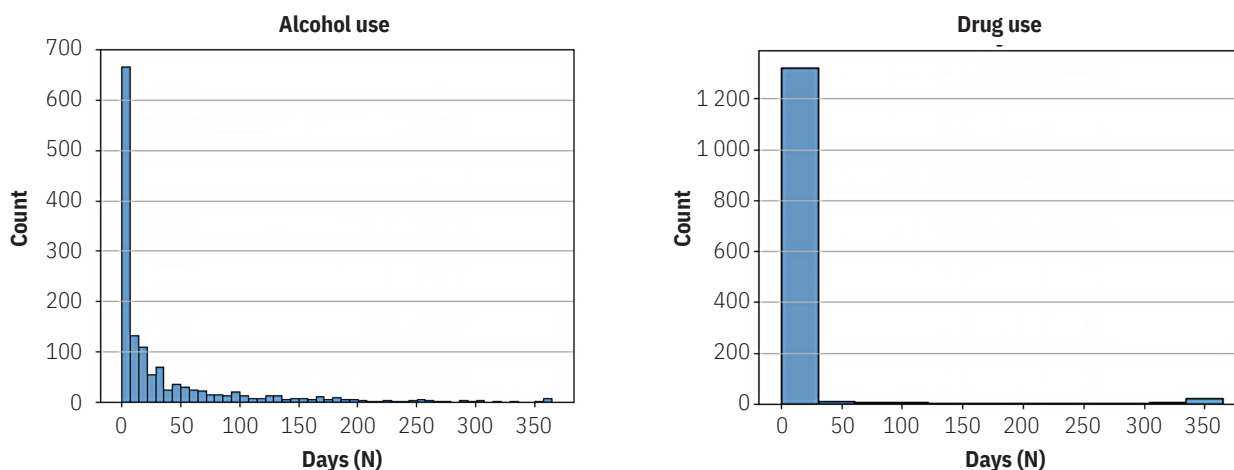
## 3 RESULTS

Most of the 1398 participants were female (75.5%), aged 18–20 years (81.2%), the mean age 19.6 ± 3.2 years. The majority of students stayed to live with their relatives (82.7%). More than half of respondents (58.5%) experienced relocation within Ukraine, abroad, or both; 17.5% returned to Ukraine in 2023. 6.1% of students informed that they had stopped studying and 1.0% were on academic leave. The vast majority of students stated that they had a trauma experience (91.1%), and more than half experienced multiple trauma (62.0%). *Table 1* provides a detailed overview of the sample characteristics.

More than half of the respondents (55.9%) sought support during the war. Most of them received it from peers, friends, and relatives (40.8%), less from mental health professionals (26.9%). 15.8% of participants reported that they were still seeking support (*Table 1*).

Most of the students indicated that they had substance use experience during the last year: 928 (66.4%) reported alcohol use, 161(11.5%) reported using other substances, and 422

**Figure 1 |** Distribution of substance use among participants (days per last year)



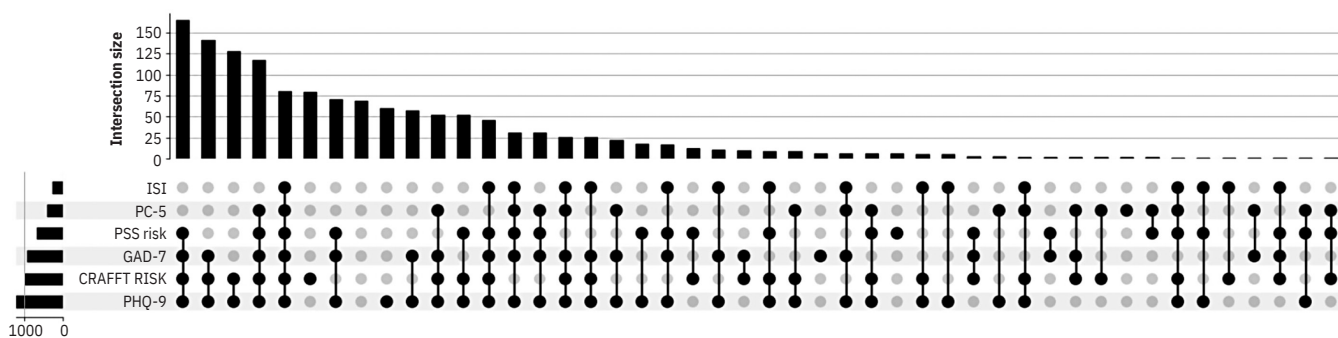
**Table 1** | Socio-demographic characteristics of participants

Variables	N (%)	Difference in CRAFFT risk scores		
		t	F	p
Gender				
Male	342 (24.5)	-1.81		0.07
Female	1056 (75.5)			
Age (years)				
18-20	1134 (81.2)			
21-22	191 (13.6)		Mar-78	0.02*
≥ 23	73 (5.2)			
Living during the war <sup>1</sup>				
Alone	95 (6.8)		41.37	0.00**
With child	16 (1.1)		146.55	0.00**
With friends / peers	31 (2.2)		18.74	0.00**
With partner	124 (8.9)		Aug-22	0.00*
With relatives	1156 (82.7)		10.00	0.00*
Other	5 (0.4)		0.65	0.42
Having a pet	25 (1.8)	Feb-39		0.02*
Relocation				
Internal	436 (32.2)			
External	253 (18.1)		4-Jan	0.01*
Internal + External	129 (9.2)			
Returned home	244 (17.5)	Jan-94		0.16
Academic leave	14 (1.0)	Feb-75		0.01*
Stopped education	85 (6.1)	Feb-99		0.00**
Trauma experience <sup>1</sup>				
War trauma	958 (75.2)		2.00	0.16
Death of a loved one	582 (45.7)		13.41	0.00**
Direct exposure to shelling or bombardment	468 (33.5)		0.11	0.74
Seeing someone killed or seriously injured	197 (15.5)		0.18	0.67
Sexual trauma	98 (7.7)		34.70	0.00**
Being under occupation	89 (7.0)		0.25	0.62
Serious accident	83 (6.5)		Jun-16	0.01*
Fire witness	51 (4.0)		Jan-38	0.24
Property loss	152 (10.9)		0.44	0.51
Physical assault	150 (10.7)		Dec-93	0.00**
Other	121 (9.5)		0.03	0.86
Multiple trauma (≥ 2)	789 (62.0)		29.44	0.00**
Support sought during war				
Non-professional support <sup>1</sup>				
Support sought from peers, friends, relatives	564 (72.2)		0.41	0.52
Support sought from social networks	132 (16.9)		0.01	0.93
Support sought from teachers, supervisors, colleagues	33 (4.2)		Feb-31	0.13
Professional support <sup>1</sup>				
MH practitioner	190 (13.6))		0.00	0.98
GP	32 (2.3)		106.98	0.00**
Psychological help hotline	20 (2.6)		43.26	0.00**
Self-help groups	15 (1.9)		Mar-50	0.06
Current need of support	221 (15.8)	Feb-74		0.01*
Professional support sought before war	162 (11.6)	Feb-69		0.01*

<sup>1</sup> multiple choice question

\* p&lt;0.05; \*\*p&lt;0.001

**Figure 2 |** Visualization of psychometric scales' intersections (PHQ-9, GAD-7, PC-PTSD-5, ISI, CRAFFT, PSS)



(30.2%) denied any substance use, 27 (1.9%) participants did not specify type of substance and number of days.

Alcohol use was reported by 928 study participants in average 36±63.2 days during last year. Half of the study participants used alcohol for more than 40 days during last year. The drug use was reported by 161 study participants in an average 11.2±55.6 days during last year. The distribution of participants by the number of days of use during last year is shown on *Figure 1*.

The medium substance use risk according to the CRAFFT scores was found in 798 (57%) participants and high risk in 178 (12.7%) participants.

Substance use most commonly occurred in combination with depression, anxiety, and suicidal thoughts, with depression and anxiety, depression alone, and with all psychometric symptoms together. But there was a part of participants 80 (5.7%) who had only increased CRAFFT scores and did not have any other symptoms (*Figure 2*).

The t-test showed that there were no significant gender-based differences in students' CRAFFT risk scores (see *Table 1*), but were differences related to having a pet, being on academic leave, stopping education, seeking professional support pre-war and current need of support.

The ANOVA analysis (see *Table 1*) showed that there were significant differences in students' CRAFFT risk scores related to age, living conditions, relocation experience, trauma experience and seeking professional support.

According to correlation analysis substance use among students was connected with age, relocation, living environment, termination of education, wellbeing, mental health support sought, and traumatic experience. Namely, students of relatively older age, those who were relocated twice (inside Ukraine and abroad or abroad and back to Ukraine), stopped education, or were on academic leave used substances more. Any traumatic experience (assault, loss, accident, sexual and multiple trauma) was associated with more intensive substance consumption. Living with relatives and having better wellbeing before the war was connected with lower substance use. Also, inversely, living alone, with a partner or with a pet was linked

to higher substance use. Respondents, who indicated the current need of support, sought professional support before the war and during the war (incl., psychologist, psychiatrist, psychotherapist) and took non-prescribed MH medications were more intense substance users (Annex).

We also ran an ANOVA to disambiguate key socio-demographic factors affecting CRAFFT risk. The results confirm our above correlational analysis and are presented in *Table 2*. We show that CRAFFT risk is affected by age, relocation, living conditions, leaving education, seeking professional support (during war), the presence and number of traumatic events. Contrariwise, we found no suggestion that CRAFFT risk was considerably affected by the usage of social networks, self-reported need of support and seeking non-professional support (during war) as well as seeking professional support (pre-war), and gender.

**Table 2 |** Socio-demographic factors affect CRAFFT risk score

	sum_sq	mean_sq	F	p
Gender	1.153286	1.153286	2.999661	0.08
Age	3.392699	3.392699	8.824305	0.00*
Relocation (yes/no)	1.779776	1.779776	4.629141	0.03*
Living alone (yes/no)	2.550384	2.550384	6.633470	0.01*
Stopped education	2.775721	2.775721	7.219563	0.00*
Social networks	0.744364	0.744364	1.936069	0.16
Support sought (prof.)	4.132060	4.132060	10.747359	0.00**
Support sought (non-prof.)	0.336388	0.336388	0.874934	0.35
Current need of support	0.678076	0.678076	1.763653	0.18
Support sought (prof.) pre-war	0.539869	0.539869	1.404183	0.24
Trauma (yes/no)	2.595536	2.595536	6.750908	0.01*
Multiple trauma	4.241362	4.241362	11.031650	0.00**

\*p<0.05; \*\*p<0.001.

**Table 3** | Mental health symptoms affect CRAFFT risk score

Variables	sum_sq	mean_sq	F	p
PTSD (PC-PTSD-5)	9.235442	9.235442	23.964021	0.00**
Depression (PHQ-9)	7.663868	7.663868	19.886119	0.00**
Anxiety (GAD-7)	0.783979	0.783979	2.034260	0.15
Insomnia (ISI)	0.083041	0.083041	0.215474	0.64
Suicide risk (PSS)	5.673267	5.673267	14.720930	0.00**

\*p<0.05; \*\*p<0.001.

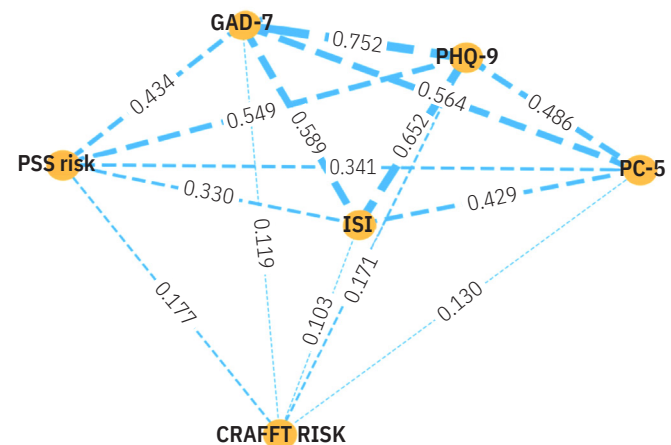
The CRAFFT scale had a relatively weak correlation with all psychometric scales (PHQ-9, GAD-7, PC-PTSD-5, PSS, ISI), whereas the correlation between psychometric scales themselves was much higher than their correlation with CRAFFT (Figure 3). The conducted ANOVA analysis showed that CRAFFT risk is mostly affected by depression, PTSD and suicide risk (Table 3).

#### 4 DISCUSSION

This study showed a high prevalence of substance use (66% alcohol use; 11.5 % other psychoactive substances) among university students in Ukraine in 2023. Nevertheless, our result of the prevalence of substance consumption does not coincide with studies from Ukraine and some other countries. Study conducted in Ukraine in 2023 showed that the level of alcohol consumption among people aged 18-29 years was 86.3%; the prevalence of use of other psychoactive substances in 2023 among persons aged 18-24 years was 10.7% (National Report on Drug and Alcohol Situation in Ukraine, 2023). Data from other non-conflict countries also showed high levels of alcohol use among university students, with 93.4% in the Netherlands (van den Bos et al., 2024) and 70.2% in South Africa reported alcohol use in the last 12 months (Chen et al., 2023). Our results can be explained by the fact that those with a university education and full-time students were less likely to screen positive for alcohol use disorder, as problematic alcohol and substance use is strongly associated with lower educational attainment in Ukraine (Martsenkovskiy et al., 2024).

Despite the relatively low levels of substance use in our study, the majority of students (predominantly females) who used substances were at medium to high risk of substance use disorders. The use of psychoactive substances was significantly correlated with traumatic experience, relocation, living environment, and wellbeing pre-war. These results are consistent with those of other studies: female college students who reported higher levels of traumatic stress symptoms, reported consuming larger amounts of alcohol (Edwards et al., 2006), and young patients and students with traumatic event expo-

**Figure 3** | Correlation between dependent variables



sure and posttraumatic stress had more severe substance use problems than those without such an experience (Basedow et al., 2020; Blumenthal et al., 2008).

The war in Ukraine, which began with the first Russian invasion in 2014 and continues to this day with a series of ongoing traumatic events and consequences, has made the living environment in Ukraine very stressful. There is a lack of research data from countries with long-lasting or ongoing conflicts, but some suggest that increased substance use among war-affected youth is a negative coping strategy to forget the stress, trauma and experiences of war (Makoha & Denov, 2024). Considering the widespread traumatic experiences among our respondents, it was anticipated that substance use levels would be higher among Ukrainian students compared to those in countries unaffected by war. However, our findings indicate that in the presence of enduring traumatic events, it is not the prevalence but rather the intensity of substance use that is more likely to increase.

Substance use is strongly associated with mental health issues (Richert et al., 2020), and our study confirms the considerable link between substance use and such mental symptoms as depression, PTSD and suicidal risk. Students who indicated a current need of support, sought professional support before the war and during the war (incl., psychologist, psychiatrist, psychotherapist) and took non-prescribed MH medications were more intense substance users. A previous history of mental problems (anxiety, depression, PTSD) worsens the prognosis after traumatic events and increases the number of symptoms compared to individuals without mental health issues. Younger age and increased alcohol/drug use were associated with increased depression and anxiety symptoms and reduced well-being (Lewis et al., 2022). This emphasizes the importance of mental health and substance use screening, as students with clinically significant anxiety or depression stratified by substance use have low access to any mental health services (Auty et al., 2022). On the other hand, students are less likely to seek help for substance use than for other mental health problems. This requires innovative forms of support that expand access to medical care (Shaikh et al., 2024).

Approximately 72% of students in our study received support from peers, friends, and relatives, and those who sought this informal support had more mental health symptoms. Friends and family are central agents in young people's mental health help-seeking pathways and could provide important facilitative resources or obstruct access to professional services (Lynch et al., 2023). Studies conducted in Ukraine in previous years indicate that stigmatization of mental health and substance use issues, concerns about anonymity, and the hope to manage independently were among the main barriers to seeking professional help (Burlaka et al., 2014; Quirke et al., 2021; Sereda et al., 2020).

Students living with relatives and having better well-being before the full-scale war in 2022 had lower levels of substance use. This is also in line with a May 2022 study of Ukrainian university students, which found that problematic alcohol use was significantly associated with gender and living with a partner, lower levels of alcohol use were found among those who stayed with relatives or parents (Pinchuk et al., 2024). Other studies suggest that perceived closeness of peers is highly protective against psychiatric symptoms (Mason et al., 2014), and perceived social support from family and friends is protective against depressive symptoms (Ioannou et al., 2019).

Students who remain in Ukraine note that obsessive thoughts about the war negatively affect their safety perception, and the absence of psychological support from the university worsens the situation, contributing to a significant decrease in the sense of safety. However, these thoughts tend to diminish for students studying abroad during the conflict (Tamilina et al., 2023). In our study, the experience of relocation was associated with trauma experience and seeking professional support. This highlights the need of Ukrainian universities to develop specific preventive interventions to protect students from mental health and substance use issues while living in a country at war, and to help them develop psychological resilience to deal with ongoing traumatic experiences.

#### 4.1 Limitations

The most important limitation of the current study was its cross-sectional design. Therefore, the association between mental health symptoms, alcohol and substance use may not necessarily be considered causation. Moreover, we cannot establish a causal relationship between the use of alcohol and psychoactive substances and the impact of war. The presence of mental health symptoms was based on respondents' self-reports rather than clinical diagnoses. In addition, the results obtained may reflect the state of mental health only at the time of the survey. A certain limitation is also the significant quantitative superiority of females in the overall sample. We also did not include coping strategies and prevention programs in this study, which could be explored in future studies. Our comments on our findings are very cautious, taking into account the continuation of the war, the rapidly changing circumstances and the need for further study of the impact of various factors.

The strengths of this study include its extensive geographic coverage across Ukraine and large sample size. Additionally, to our knowledge, this is the first study to examine the self-reported prevalence of substance use associated with mental health symptoms on standardized scales among the student population during the war in Ukraine.

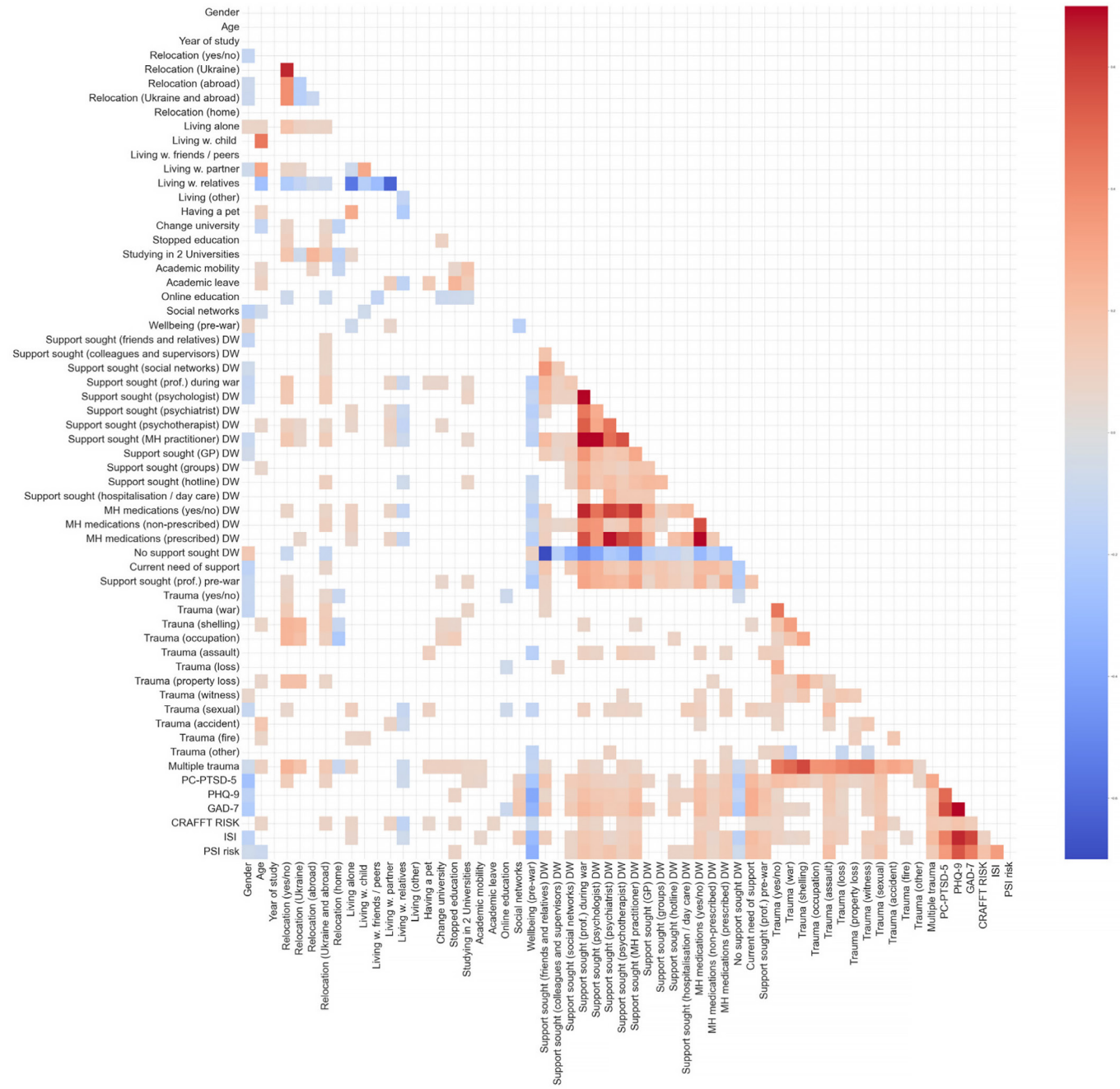
## 5 CONCLUSIONS

The relationship between war and substance use among college students is a complex and poorly understood issue. The presence of traumatic experiences and concomitant mental disorders in a young person is of great importance. Given the continuation of the war in Ukraine and the rapid development of events, it is necessary to continue studying the various risk factors for substance use among university students.

At the same time, already at this stage, public policy should immediately respond to existing problems with the mental health of students, especially in groups at high risk of using psychoactive substances, and actively implement preventive programs and effective early interventions (Gavurova et al., 2022; Yachnik et al., 2021; 2022).

Figure 4 | Annex

Correlations with p-value < 0.05 (corrected with Benjamini-Hochberg Procedure)



**Authors' contributions:** IP, MP, YY designed the study and proposed study design. YY, OM, MP, IP, performed the statistical analysis and participated in data interpretation and manuscript preparation. OM, MP designed the initial form of the manuscript, conducted a literature review, wrote methodology section, and conducted summary of related work. All authors contributed to the article development and approved the final version of the manuscript.

**Declaration of interest:** No potential conflict of interest was reported by the authors.



## REFERENCES

- Auty S., Lipson, S., Stein, M., & Reif, S. (2022). Mental health service use in a national sample of college students with co-occurring depression or anxiety and substance use. *Drug Alcohol Depend Rep*, 2, Article 100025. <https://doi.org/10.1016/j.dadr.2022.100025>
- Basedow, L. A., Kuitunen-Paul, S., Roessner, V., & Golub, Y. (2020). Traumatic events and substance use disorders in adolescents. *Frontiers in Psychiatry*, 11, 559. <https://doi.org/10.3389/fpsy.2020.00559>
- Blows, S., & Isaacs, S. (2022). Prevalence and factors associated with substance use among university students in South Africa: Implications for prevention. *BMC Psychology*, 10(1), 309. <https://doi.org/10.1186/s40359-022-00987-2>
- Blumenthal, H., Blanchard, L., Feldner, M. T., Babson, K. A., Leen-Feldner, E. W., & Dixon, L. (2008). Traumatic event exposure, posttraumatic stress, and substance use among youth: A critical review of the empirical literature. *Current Psychiatry Reviews*, 4(4), 228–254. <https://doi.org/10.2174/157340008786576562>
- Burlaka, V., Churakova, I., Aavik, O. A., & Goldstein, D. (2014). Perceived barriers to mental health services: a mixed-method study with Ukrainian college students. *European Journal of Higher Education*, 4(2), 167–183. <https://doi.org/10.1080/21568235.2014.890524>
- Burlaka, V., Hong, J.S., Serdiuk, O., Krupelnyska, L., Paschenko, S., Darvishov, N., & Churakova, I. (2021). Suicidal behaviors among Ukrainian college students: The role of substance use, religion, and depression. *International Journal of Mental Health and Addiction*, 19, 2392–2406. <https://doi.org/10.1007/s11469-020-00333-w>
- Charlson, F., van Ommeren, M., Flaxman, A., Cornett, J., Whiteford, H., & Saxena, S. (2019). New WHO prevalence estimates of mental disorders in conflict settings: A systematic review and meta-analysis. *Lancet*, 394(10194), 240–248. [https://doi.org/10.1016/S0140-6736\(19\)30934-1](https://doi.org/10.1016/S0140-6736(19)30934-1)
- Chen, C., Mpinganjira, M. G., Motilal, A., Matukane, S., Letsoalo, R., McKee, T., Ntombela, Z., Mbulaheni, L., Hargovan, T., & Francis, J. M. (2023). Prevalence and correlates of alcohol use and risky drinking among undergraduate students in Johannesburg, South Africa: A cross-sectional study. *BMC Psychiatry*, 23(1), Article 553. <https://doi.org/10.1186/s12888-023-05043-w>
- Chudzicka-Czupała, A., Hapon, N., Chiang, S. K., Żywiłok-Szeja, M., Karamushka, L., Lee, C. T., Grabowski, D., Paliga, M., Rosenblat, J. D., Ho, R., McIntyre, R. S., & Chen, Y. L. (2023). Depression, anxiety and post-traumatic stress during the 2022 Russo-Ukrainian war, a comparison between populations in Poland, Ukraine, and Taiwan. *Scientific Reports*, 13(1), Article 3602. <https://doi.org/10.1038/s41598-023-28729-3>
- Chouhan, Z. (2016). Mental health in war conflict areas. *Global Health: Annual Review*, 1(2). <https://journals.mcmaster.ca/ghar/article/view/1310>
- Conway, K. P., Compton, W., Stinson, F. S., & Grant, B. F. (2006). Lifetime comorbidity of DSM-IV mood and anxiety disorders and specific drug use disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *The Journal of Clinical Psychiatry*, 67(2), 247–257. <https://doi.org/10.4088/jcp.v67n0211>
- Edwards, C., Dunham, D., Ries, A., & Barnett, J. (2006). Symptoms of traumatic stress and substance use in a non-clinical sample of young adults. *Addictive Behaviors*, 31(11), 2094–2104. <https://doi.org/10.1016/j.addbeh.2006.02.009>
- Esmaelzadeh, S., Moraros, J., Thorpe, L., & Bird, Y. (2018). Examining the association and directionality between mental health disorders and substance use among adolescents and young adults in the U.S. and Canada – A systematic review and meta-analysis. *Journal of Clinical Medicine*, 7(12), Article 543. <https://doi.org/10.3390/jcm7120543>
- European Monitoring Centre for Drugs and Drug Addiction, (2020). ESPAD report 2019: Results from the European school survey project on alcohol and other drugs, Publications Office. <https://data.europa.eu/doi/10.2810/877033>
- Ezard, N., Manji, H., & Busse, A. (2021). Substance use disorders in conflict-displaced populations. In N. el-Guebaly, G. Carrà, M. Galanter, A. M. Baldacchino (Eds.), *Textbook of addiction treatment* (pp. 1463–1475). Springer. [https://doi.org/10.1007/978-3-030-36391-8\\_103](https://doi.org/10.1007/978-3-030-36391-8_103)
- Farrell, M., Howes, S., Bebbington, P., Brugha, T., Jenkins, R., Lewis, G., & Meltzer, H. (2001). Nicotine, alcohol and drug dependence and psychiatric comorbidity: Results of a national household survey. *British Journal of Psychiatry*, 179(5), 432–437. <https://doi.org/10.1192/bjp.179.5.432>
- Gavurová, B., Ivanková, V., & Rigelský, M. (2021). Alcohol use disorders among Slovak and Czech university students: A closer look at tobacco use, cannabis use and socio-demographic characteristics. *International Journal of Environmental Research and Public Health*, 18. <https://doi.org/10.3390/ijerph182111565>
- Gavurová, B., Ivanková, V., Rigelský, M., Mudarri, T., & Miovský, M. (2022). Somatic symptoms, anxiety, and depression among college students in the Czech Republic and Slovakia: A cross-sectional study. *Frontiers in Public Health*, 10, Article 859107. <https://doi.org/10.3389/fpubh.2022.859107>
- Görgülü, Y., Çakir, D., Sönmez, M. B., Köse Çinar, R., & Vardar, M. E. (2016). Alcohol and psychoactive substance use among university students in Edirne and related parameters. *Noropsikiyatri Arsivi*, 53(2), 163–168. <https://doi.org/10.5152/npa.2015.9907>
- Goto, R., Pinchuk, I., Kolodezhny, O., Pimenova, N., Kano, Y., & Skokauskas, N. (2024). Mental health of adolescents exposed to the war in Ukraine [Advance online publication]. *JAMA Pediatrics*, Article e240295. <https://doi.org/10.1001/jamapediatrics.2024.0295>
- Granford, J. A., Eisenberg, D., & Serras, A. M. (2009). Substance use behaviors, mental health problems, and use of mental health services in a probability sample of college students. *Addictive Behaviors*, 34(2), 134–145. <https://doi.org/10.1016/j.addbeh.2008.09.004>
- Grant, J. D., Scherrer, J. F., Lynskey, M. T., Agrawal, A., Duncan, A. E., Haber, J. R., Heath, A. C., & Bucholz, K. K. (2012). Associations of alcohol, nicotine, cannabis, and drug use/dependence with educational attainment: Evidence from cotwin-control analyses. *Alcoholism, Clinical and Experimental Research*, 36(8), 1412–1420. <https://doi.org/10.1111/j.1530-0277.2012.01752.x>
- Hogue, A., Becker, S. J., Wenzel, K., Henderson, C. E., Bobek, M., Levy, S., & Fishman, M. (2021). Family involvement in treatment and recovery for substance use disorders among transition-age youth: Research bedrocks and opportunities. *Journal of Substance Abuse Treatment*, 129, Article 108402. <https://doi.org/10.1016/j.jsat.2021.108402>
- Ioannou, M., Kassianos, A.P., & Symeou, M. (2019). Coping with depressive symptoms in young adults: Perceived Social support protects against depressive symptoms only under moderate levels of stress. *Front Psychol*, 9, Article 2780. <https://doi.org/10.3389/fpsyg.2018.02780>
- Istasy, M., Elias, R., Raheb, M., & Cernovsky, Z. (2019). Substance abuse and stress levels in Canadian university students. *Archives of Psychiatry and Behavioral Sciences*, 2(2), 1–6. <https://doi.org/10.22259/2638-5201.0202001>
- Kalina, O., Orosová, O., Kriaucionienė, V., Lukács, A., & Miovský, M. (2021). Self-regulation, normative beliefs, alcohol use and consequences among university students from Eastern Europe. *Drustvena Istrazivanja*. <https://doi.org/10.5559/di.30.3.01>
- Knight, J. R., Shrier, L. A., Bravender, T. D., Farrell, M., Vander Bilt, J., & Shaffer, H. J. (1999). A new brief screen for adolescent substance abuse. *Archives of Pediatrics & Adolescent Medicine*, 15(6), 591–596. <https://doi.org/10.1001/archpedi.153.6.591>
- Kopak, A. M., Chen, A. C., Haas, S. A., & Gillmore, M. R. (2012). The importance of family factors to protect against substance use related problems among Mexican heritage and White youth. *Drug and*

- Alcohol Dependence*, 124(1–2), 34–41. <https://doi.org/10.1016/j.drugalcdep.2011.12.00>
- 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>
- Kurapov, A., Kalaitzaki, A., Keller, V., Danyliuk, I., & Kowatsch, T. (2023a). The mental health impact of the ongoing Russian-Ukrainian war 6 months after the Russian invasion of Ukraine. *Frontiers in Psychiatry*, 14, Article 1134780. <https://doi.org/10.3389/fpsy.2023.1134780>
- Kurapov, A., Pavlenko, V., Drozdov, A., Beziudna, V., Reznik, A., & Isralowitz, R. (2023b). Toward an understanding of the Russian-Ukrainian war impact on university students and personnel. *Journal of Loss and Trauma*, 28(2), 167–174. <https://doi.org/10.1080/15325024.2022.2084838>
- Lee, J., Myshakivska, O., Filimonova, N., Pinchuk, I., Yachnik, Y., Chumak, S., Altynbekov, K., Muzafarov, R., Cherchenko, N., Asghar, S., Ali, S. A., & Alyana, S. I. (2022). Substance use and the role of families. Results of a cross-country study in Pakistan, Kazakhstan, and Ukraine. *Adiktologie*, 22(2), 68–81. <https://doi.org/10.35198/01-2022-002-0007>
- Lewis, K. J. S., Lewis, C., Roberts, A., Richards, N. A., Evison, C., Pearce, H. A., Lloyd, K., Meudell, A., Edwards, B. M., Robinson, C. A., Poole, R., John, A., Bisson, J. I., & Jones, I. (2022). The effect of the COVID-19 pandemic on mental health in individuals with pre-existing mental illness. *BJPsych Open*, 8(2), e59. <https://doi.org/10.1192/bjpo.2022.25>
- Luitel, N. P., Jordans, M., Murphy, A., Roberts, B., & McCambridge, J. (2013). Prevalence and patterns of hazardous and harmful alcohol consumption assessed using the AUDIT among Bhutanese refugees in Nepal. *Alcohol and Alcoholism*, 48(3), 349–355. <https://doi.org/10.1093/alcalc/agt009>
- Lushchak, O., Velykodna, M., Bolman, S., Strilbytska, O., Berezovskyi, V., & Storey, K. B. (2023). Prevalence of stress, anxiety, and symptoms of post-traumatic stress disorder among Ukrainians after the first year of Russian invasion: A nationwide cross-sectional study. *The Lancet Regional Health. Europe*, 36, Article 100773. <https://doi.org/10.1016/j.lanpe.2023.100773>
- Lynch, L., Moorhead, A., Long, M., & Hawthorne-Steele I. (2023). The role of informal sources of help In young people's access to, engagement with, and maintenance in professional mental health care—A scoping review. *J Child Fam Stud*, 32, 3350–3365. <https://doi.org/10.1007/s10826-022-02498-5>
- Makoha, G., & Denov, M. (2024). War, forced displacement, and alcohol abuse: Experiences and perceptions of war-affected south Sudanese refugee youth living in Bidibidi refugee settlement in northern Uganda. *Frontiers in Public Health*, 12, Article 1232504. <https://doi.org/10.3389/fpubh.2024.12325015>
- Malla, M. A. (2021). Substance abuse and mental health disorder among the youth living in conflict environment. *Journal of Mental Health Issues and Behavior (JMHIb)*, 1(01), 12–22. <https://doi.org/10.55529/jmh11.12.22>
- Martsenkovskiy, D., Shevlin, M., Ben-Ezra, M., Bondjers, K., Fox, R., Karatzias, T., Martsenkovska, I., Martsenkovskiy, I., Pfeiffer, E., Sachser, C., Vallières, F., & Hyland, P. (2024). Mental health in Ukraine in 2023. *European Psychiatry*, 67(1), Article e27. <https://doi.org/10.1192/j.eurpsy.2024.12>
- Martin, K. P., Benca-Bachman, C. E., & Palmer, R. H. C. (2020). Risk for alcohol use/misuse among entering college students: The role of personality and stress. *Addictive behaviors reports*, 13, Article 100330. <https://doi.org/10.1016/j.abrep.2020.100330>
- Mason, M. J., Zaharakis, N., & Benotsch, E. G. (2014). Social networks, substance use, and mental health in college students. *Journal of American College Health*, 62(7), 470–477. <https://doi.org/10.1080/07448481.2014.923428>
- Morin, C. M. (1993). Insomnia: Psychological assessment and management. Guildford. <https://doi.org/10.1002/smi.2460100113>
- National Report On Drug and Alcohol Situation in Ukraine (2023). [https://www.emcdda.europa.eu/drugs-library/national-report-drug-and-alcohol-situation-ukraine-2023-based-data-2022\\_en](https://www.emcdda.europa.eu/drugs-library/national-report-drug-and-alcohol-situation-ukraine-2023-based-data-2022_en)
- Østergaard, M. L. D., Aponte-Canencio, D. M., Barajas Ortiz, Y., Velez Botero, H. J., Simon Modvig, J., & Brasholt, M. (2023). Vulnerability factors in conflict-related mental health. *Medicine, Conflict, and Survival*, 39(1), 63–80. <https://doi.org/10.1080/13623699.2022.2156232>
- Pavlenko, V., Kurapov, A., Drozdov, A., Korchakova, N., Reznik, A., & Isralowitz, R. (2022). Mental Health and Substance Use Among Ukrainian “Help Profession” Students During the COVID-19 Pandemic [Advance online publication]. *International Journal of Mental Health and Addiction*, 1–4. <https://doi.org/10.1007/s11469-022-00831-z>
- Pavlova, I., & Rogowska, A. M. (2023). Exposure to war, war nightmares, insomnia, and war-related posttraumatic stress disorder: A network analysis among university students during the war in Ukraine. *Journal of Affective Disorders*, 342, 148–156. <https://doi.org/10.1016/j.jad.2023.09.003>
- Paykel, E. S., Myers, J. K., Lindenthal, J. J., & Tanner, J. (1974). Suicidal feelings in the general population: a prevalence study. *The British Journal of Psychiatry*, 124, 460–469. <https://doi.org/10.1192/bjp.124.5.460>
- Pinchuk, I., Solonskyi, A., Yachnik, Y., Kopchak, O., Klasa, K., Sobański, J. A., & Odintsova, T. (2024). Psychological well-being of Ukrainian students three months after the emerge of full-scale war. *Psychiatria Polska*, 58(1), 121–151. <https://doi.org/10.12740/PP/177073>
- Predko, V., Schabus, M., & Danyliuk, I. (2023). Psychological characteristics of the relationship between mental health and hardiness of Ukrainians during the war. *Frontiers in Psychology*, 14, Article 1282326. <https://doi.org/10.3389/fpsyg.2023.1282326>
- Prins, A., Bovin, M. J., Smolenski, D. J., Marx, B. P., Kimerling, R., Jenkins-Guarnieri, M. A., Kaloupek, D. G., Schnurr, P. P., Kaiser, A. P., Leyva, Y. E., & Tiet, Q. Q. (2016). The Primary Care PTSD Screen for DSM-5 (PC-PTSD-5): Development and evaluation within a veteran primary care sample. *Journal of General Internal Medicine*, 31(10), 1206–1211. <https://doi.org/10.1007/s11606-016-3703-5>
- Quirke, E., Klymchuk, V., Suvalo, O., Bakolis, I., & Thornicroft, G. (2021). Mental health stigma in Ukraine: Cross-sectional survey. *Global Mental Health*, 8, Article e11. <https://doi.org/10.1017/gmh.2021.9>
- Richert, T., Anderberg, M., & Dahlberg, M. (2020). Mental health problems among young people in substance abuse treatment in Sweden. *Substance Abuse Treatment, Prevention, and Policy*, 15(1), Article 43. <https://doi.org/10.1186/s13011-020-00282-616>
- Roberts, B., Murphy, A., Chikovani, I., Makhshvili, N., Patel, V., & McKee, M. (2014). Individual and community level risk-factors for alcohol use disorder among conflict-affected persons in Georgia. *PLoS one*, 9(5), Article e98299. <https://doi.org/10.1371/journal.pone.0098299>
- Sereda, Y., Kiriazova, T., Makarenko, O., Carroll, J. J., Rybak, N., Chybisov, A., Bendiks, S., Idrisov, B., Dutta, A., Gillani, F. S., Samet, J. H., Flanagan, T., & Lunze, K. (2020). Stigma and quality of co-located care for HIV-positive people in addiction treatment in Ukraine: A cross-sectional study. *Journal of the International AIDS Society*, 23(5), Article e25492. <https://doi.org/10.1002/jia2.25492>
- Shaikh, A. N., Flynn, L., Isaac, A., Prince, A., Burgan, M., & Coleman, J. (2024). Implications of the 988 suicide and crisis lifeline among college students experiencing substance use crises [Advance online publication]. *Journal of Addictions & Offender Counseling*. <https://doi.org/10.1002/jaac.12131>
- Sonmez, M. B., Cakir, D., Cinar, R. K., Gorgulu, Y., & Vardar, E. (2016). Substance use and parent characteristics among high school students: Edirne sample in Turkey. *Journal of Child & Adolescent Substance Abuse*, 25(3), 260–267. <https://doi.org/10.1080/1067828X.2015.1037516>
- 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>

Swahn, M. H., Bossarte, R. M., Choquet, M., Hassler, C., Falissard, B., & Chau, N. (2012). Early substance use initiation and suicide ideation and attempts among students in France and the United States. *International Journal of Public Health, 57*(1), 95–105. <https://doi.org/10.1007/s00038-011-0255-7>

Tamilina, L., Hohol, O., & Ihnatenko, Y. (2023). Exploring the impact of military conflicts on mental health of students: The case of Ukraine. *MPRA Paper, 119435* <https://ideas.repec.org/p/pramprapa/119435.html>

The Center for Adolescent Substance Abuse Research. (2018). The CRAFFT 2.1 Manual. [https://crafft.org/wp-content/uploads/2018/08/FINAL-CRAFFT-2.1\\_provider\\_manual\\_with-CRAFFTN\\_2018-04-23.pdf](https://crafft.org/wp-content/uploads/2018/08/FINAL-CRAFFT-2.1_provider_manual_with-CRAFFTN_2018-04-23.pdf)

Degenhardt, L., Bharat, C., Glantz, M. D., Bromet, E. J., Alonso, J., Bruffaerts, R., Bunting, B., de Girolamo, G., de Jonge, P., Florescu, S., Gureje, O., Haro, J. M., Harris, M. G., Hinkov, H., Karam, E. G., Karam, G., Kovess-Masfety, V., Lee, S., Makanjuola, V., Medina-Mora, M. E., ... WHO World Mental Health Survey collaborators (2022). The associations between traumatic experiences and subsequent onset of a substance use disorder: Findings from the World Health Organization World Mental Health surveys. *Drug and Alcohol Dependence, 240*, Article 109574. <https://doi.org/10.1016/j.drugalcdep.2022.109574>

Yachnik, Y., Pinchuk, I., Myshakivska, O., Pinchuk, A., Boltonosov, S., Pievskaya, J., Gluzman, S., Korol, I., Johnson, K. (2021). Training needs assessment of specialists who provide care to people with substance use disorders in Ukraine. *Adiktologie, 21*(4), 239–249. <http://doi.org/10.35198/01-2021-004-0006>

Yachnik, Y., Pinchuk, I., Blyum, A., Myshakivska, O., Shults, O., Koutsenok, I., Grelotti, D. J., Larkins, S., Johnson, K. (2022). Development of the addiction treatment workforce in Ukraine by the Ukraine addiction technology transfer center. *Adiktologie, 22*(1), 47–52. <https://doi.org/10.35198/01-2022-001-0002>

van den Bos, A., Blaauw, E., Venema, S., & Bieleman, B. (2024). Substance use among international college students in the Netherlands: An exploratory study. *Youth, 4*(1), 97–106. <https://doi.org/10.3390/youth4010007>