ACADEMIA MENTAL HEALTH & WELL-BEING

Research Article
Published: 2024-04-30
https://doi.org/10.20935/MHealthWellB6210

Prevalence of alcohol use and depressive/anxiety symptoms among patients of opioid agonist treatment programs in Ukraine

Vitalii Klymchuk[1,*], Viktoriia Gorbunova[2], Iryna Ivanchuk[3]

Academic Editor(s): Mascha van 't Wout-Frank, Uriel Halbreich

Abstract

This cross-sectional study explores the prevalence of alcohol use problems, depression/anxiety symptoms, and suicidal ideations among patients of the opioid agonist treatment (OAT) programs in Ukraine and their co-occurrence. AUDIT, Generalized Anxiety Disorder-7 (GAD-7), and Patient Health Questionnaire-9 (PHQ-9) were used to measure mental health conditions. In addition, the number of missed visits on site for substitute medication for the last month was counted, and blood alcohol levels were recorded (Drager Alcotest 6820, Draeger, Lübeck, Germany). Data were collected from October 2021 to January 2022 (before the full-scale Russian invasion) based on OAT centers in Kyiv, Sumy, and Lviv. The sample size was 999 patients. The overall rate of signs of alcohol-related problems (AUDIT), depression symptoms (PHQ-9), and anxiety symptoms (GAD-7) in the sample was 3.8 (SD 5.424), –7.42 (SD 5.336), and 5.058 (SD 4.264), respectively. For alcohol-related problems, 16.4% of the participants reported harmful drinking (one-month prevalence). Depression symptoms from moderate to severe were found in 26.73% of cases, and generalized anxiety symptoms from moderate to severe levels were found in 14.71% of patients (2-week prevalence). The 2-week suicide ideation prevalence was 24.9% (a quarter of all OAT patients). General co-occurrence of depression and anxiety symptoms was equal to 13.31% of all patients who participated in the study (32.13% of all patients having depression or anxiety symptoms). There was an increase in the general co-occurrence ratio with an increase in the severity of alcohol-related problems from 10.66% to 54.55%.

Keywords: *opioid agonist treatment (OAT), opioid agonist therapy, mental health, depression, anxiety, suicidal ideation*

Citation: Klymchuk V, Gorbunova V, Ivanchuk I. Prevalence of alcohol use and depressive/anxiety symptoms among patients of opioid agonist treatment programs in Ukraine. *Academia Mental Health and Well-Being* 2024;1. https://doi.org/10.20935/MHealthWellB6210

1. Introduction

The number of nonmedical opioid users worldwide has almost doubled in the recent decade. The latest estimation from the World Drug Report, 2022, states that 61 million people, representing 1.2% of the global population, used opioids in 2020 [1].

Opioid use is frequently associated with multiple health and social problems, which are the most significant risk factors for widespread mental disorders. In the comorbidity sections of Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text revision (DSM-5-TR) and Eleventh Revision of the International Classification of Diseases (ICD-11) for opioid-related disorders, other substance use disorders are listed as the most frequent comorbidities, together with depression and anxiety [2, 3]. Other substances, especially tobacco, alcohol, cannabis, stimulants, and benzodiazepines, are mainly used to reduce withdrawal or craving symptoms or to enhance the effects of opioids themselves. Periods of depression and anxiety are common during intoxication and withdrawal.

In the last two decades, statistics for the intertwined use of alcohol and opioids show relatively high numbers for different age and health condition groups in the United States, where the majority of such prevalence studies were conducted. Thus, in 2001–2002, opioid use disorder (OUD) with any comorbid alcohol-related disorder was diagnosed in 57.53% of adults who were mainly between 18 and 29 years (65%), male (73.9%), never married (63.2%), lived in an urban area (78.4%), and had insufficient personal income (65.4%) [4]. Opioid treatment seekers in 38% of cases had a comorbid alcohol use disorder (AUD) diagnosis in 2001–2006 [5]. Among adults with chronic

[1]Centre for Childhood and Youth Research, Department of Social Sciences, Faculty of Humanities, Education and Social Sciences, University of Luxembourg, Esch-sur-Alzette, L-4365, Luxembourg.
[2]Department of Behavioral and Cognitive Science, Faculty of Humanities, Education and Social Sciences, University of Luxembourg, Esch-sur-Alzette, L-4365, Luxembourg.
[3]Viral Hepatitis and Opioid Dependency Department, Center of Public Health of the Ministry of Health of Ukraine, Kyiv, 04071, Ukraine.
*email: vitalii.klymchuk@uni.lu

pain and OUD diagnosis, 33.4–20.3% also had a diagnosis of AUD in 2006–2015 [6]. Comorbid diagnosis of OUD and AUD was reported in 42.3% of adolescents and young adults in 2015 [7]. Also, it is essential to mention that alcohol is often involved in opioid-related overdose deaths and is a risk factor for all-cause mortality among opioid users [8–11].

Researchers of the COMBINE (Combining Medication and Behavioral Intervention in Treating Alcohol Dependence) study in 2001–2004 discovered that participants with opioid misuse presented with not only more severe alcohol dependence but also more extensive psychiatric distress in scores of Brief Symptom Inventory (BSI) [12]. Also, data show that individuals with substance use disorders have a high prevalence of comorbid psychiatric disorders, including substance-induced and independent depression and anxiety [13–16]. Data from 2001 to 2006 display the co-occurrence of OUD with anxiety and depression among people who are in search of opioid treatment in 35.8% and 44.7% cases, respectively. For persons with a combined opioid and alcohol use, these numbers increased to 43.8% and 53.5%, respectively [5]. High number of depression (51.2%/63.5%) and anxiety (39%/53.9%) disorders also was found in 2006–2015 for opioid users with/without chronic pain [6]. One of the last systematic reviews on the association of opioid misuse with anxiety and depression shows that persons diagnosed with OUD based on DSM-IV and DSM-5 (studies starting from 2002) met the criteria for a depressive disorder in 27–61% of cases and anxiety disorder in 14–43% of cases based on a structured clinical interview. Also, it was reported that polysubstance use relates to higher rates of anxiety and depression symptoms [17].

As for persons who are in the process of medication-assisted treatment with methadone or buprenorphine, data reveal 24–50% of problematic alcohol consumption depending on the year, country, and severity of alcohol use with the tendency for associated high morbidity and mortality [5, 18–22]. At the same time, patients with alcohol misuse (AUDIT score ≥ 8) are less satisfied with their methadone dose and have more physical and mental health problems and poorer social functioning compared to AUDIT-negative patients [23]. One of the most considerable numbers for depression (82%) and anxiety (56%), starting from the mild level of severity according to Hamilton Rating Scales (HRS), was found among patients of opioid treatment centers in India [24]. Other studies reported numbers starting from around 50% comorbidity for both depression and anxiety and ending near 10% [22, 25–30]. There are data that patients on opioid agonist treatment (OAT) with a comorbid psychiatric diagnosis have a significantly lower quality of life than patients with only OUD [29]. Also, these mental health comorbidities are associated with worse treatment retention, treatment outcomes, severe opioid use, and higher mortality rates for patients treated with substituted medication [22, 28, 31, 32]. Nevertheless, opioid users receiving OAT (in comparison with those who do not) have lesser physical and mental health problems as well as better situations in occupational, financial, family, social, and other areas related to the quality of life [23, 27, 29, 33].

The OAT was introduced in Ukraine in 2004 through research projects and clinical studies [34]. Since 2017, it has been financed by the Government of Ukraine and fully integrated into the healthcare system in the form of OAT centers. As of 2024, 21,202 persons are receiving OAT [35] via 218 OAT centers all over Ukraine [36].

Despite differences in numbers (explained by the variability of studies' design, measuring methods, duration of prevalence, etc.), alcohol use, depression, and anxiety among participants of medication-assisted treatment programs are not only widespread but impact mortality, the severity of opioid use, and the efficacy of OAT itself. Understanding such a prevalence is essential for targeting comorbid patients and improving decision-making and care approaches to enhance the treatment results. In the Ukrainian case, when no sufficient data on the mental health of the OAT patients are available, mental health screening has additional value in attempts to convince decision-makers of the necessity of fulfilling patients' mental health needs.

2. Materials and methods

2.1. Methods and data collection

Prevalence data collection was organized based on three opioid-assisted treatment centers in Ukrainian cities such as Kyiv (Central Ukraine), Sumy (Eastern Ukraine), and Lviv (Western Ukraine), from October 1, 2021, to January 30, 2022 (before the full-scale Russian invasion).

The staff of OAT centers collected all the data (a convenient sampling method was utilized, covering all patients of three OAT centers). Doctors, psychologists, or social workers who previously obtained detailed instructions and training on the administration of the screening measures (AUDIT, Patient Health Questionnaire-9 (PHQ-9), and Generalized Anxiety Disorder-7 (GAD-7)) performed individual screenings during patients' appointments. All questionnaires (AUDIT for alcohol use patterns, PHQ-9 for depression symptoms, and GAD-7 for anxiety symptoms) were printed out and filled in together with each patient. In addition, the number of missed visits on site for substitute medication for the last month was counted, and blood alcohol levels were recorded with the breath-alcohol measuring instrument (Drager Alcotest 6820, Draeger).

The Ukrainian versions of AUDIT, PHQ-9, and GAD-7, approved by the Ministry of Health of Ukraine for use in the OAT settings, were utilized [37]. The cut-off scores of 10 for depression (PHQ-9), 10 for anxiety symptoms (GAD-7), and 8 for hazardous alcohol consumption (AUDIT) were used [38, 39].

2.2. Data analysis

Data analysis and visualization were performed using JASP 0.14.3 (GNU Affero GPL v3, an open-source license). Descriptive statistics (mean, standard deviation, and frequency analysis) were used to describe the general results. The nonparametric Kruskal-Wallis one-way ANOVA (Analysis of Variance) was used to analyze multiple differences between independent samples. The Shapiro–Wilk test was used to analyze the normality of distributions. The contingency tables were used to analyze the co-occurrence of mental health conditions.

3. Results

3.1. Sample characteristics

Recruitment for the study was conducted from October 1, 2021 to January 30, 2022. The overall sample consisted of 999 persons who received buprenorphine or methadone as substitute medication at the OAT sites in Ukraine [Kyiv (354 patients; 35.4%), Lviv (337; 33.7%), and Sumy (308; 30.8%)]. No data regarding age, gender, occupation, or exact medication were collected.

The study samples of 999 patients (against 21,202 patients receiving the OAT) suggest high generalizability of the study results [35]; however, only 3 OAT centers of 218 participated in the study, and convenient sampling limits it to some extent.

3.2. Alcohol use, depression/anxiety symptoms, and suicide ideation prevalence

Cumulative averages for all measurements didn't show any significant extrema. The level of alcohol use within the AUDIT boundaries for low-risk consumption in the sample is 3.8 points; the number of self-reported alcohol-free days—27.73 out of 31; the average GAD-7 score—5.06 (bottom line for mild anxiety); average PHQ-9 score—7.42 (mild depression); a mean number of missed visits for the last month—0.65; and the level of alcohol in blood within norm with no signs of intoxication—0.027 ppm (**Table 1**). None of the distributions comply with the normal distribution criteria (Shapiro–Wilk test).

The severity distribution (in percentages) varies on the estimated condition (**Table 2**). For alcohol-related problems, 16.4% of the participants show harmful drinking.

Table 1 • Descriptive statistics

				95% confidence interval mean						
	Valid	**Missing**	**Mean**	**Upper**	**Lower**	**Std. deviation**	**Shapiro–Wilk**	***P*-value of Shapiro–Wilk**	**Minimum**	**Maximum**
AUDIT	999	0	3.801	4.137	3.464	5.423	0.715	<0.001	0.000	38.000
PHQ-9	999	0	7.418	7.749	7.088	5.336	0.922	<0.001	0.000	27.000
GAD-7	999	0	5.058	5.322	4.794	4.264	0.886	<0.001	0.000	21.000
Missed visits	998	1	0.645	0.809	0.481	2.644	0.256	<0.001	0.000	31.000
Alcohol level (promille)	999	0	0.027	0.034	0.020	0.116	0.249	<0.001	0.000	1.000

Table 2 • Levels of depression

Measures	***N***	**%**	**% Summary**
AUDIT scores			
Level 1 (0–7)	835	83.6	83.6
Level 2 (8–15)	127	12.7	16.4
Level 3 (16–19)	15	1.5	
Level 4 (20–40)	22	2.2	
PHQ-9 scores			
None-minimal (0–4)	302	30.23	73.27
Mild (5–9)	430	43.04	
Moderate (10–14)	158	15.82	26.73
Moderately severe (15–19)	73	7.31	
Severe (20–27)	36	3.60	
GAD-7 scores			
Minimal (0–4)	559	55.96	85.29
Mild (5–9)	293	29.33	
Moderate (10–14)	101	10.11	14.71
Severe (15–21)	46	4.60	
Suicide ideations			
Not at all	750	75.1	75.1
Several days	147	14.7	24.9
More than half the days	69	6.9	
Nearly every day	33	3.3	

Depression symptoms from moderate to severe levels were found in 26.73% of cases. Nearly three-quarters of respondents (73.27%) had no or mild occurrence of depressive symptoms.

Around half of the screened patients (55.96%) had minimal levels of generalized anxiety, and 29.33% of them had mild levels of it. Anxiety symptoms from moderate to severe levels were reported by 14.71% of patients.

We analyzed separately the answers to the last suicide-related question of PHQ-9 to understand the prevalence of suicide ideation among OAT patients in Ukraine. According to the data received, the 2-week suicide ideation prevalence is 24.9%. Nearly every day, 3.3% of patients had suicide ideations.

3.3. Alcohol use, depression, and anxiety co-occurrence

To analyze the co-occurrence of all three mental health conditions, contingency tables were calculated using the same cut-off score as in the previous calculations (**Table 3**).

General co-occurrence was calculated as a percentage of people with both conditions among all patients who participated in the study. General co-occurrence of depression and anxiety was observed in 13.31% of patients. That is equal to 32.13% of partial co-occurrence (percentage of all patients having depression or anxiety symptoms) (**Figure 1**).

However, the co-occurrence of depression and anxiety symptoms changes from 10.66% in those reporting the lowest levels of alcohol use to 54.55% in those with the highest level of alcohol use, suggesting that more severe alcohol-related problems correspond with higher levels of co-occurrence of depression and anxiety symptoms.

Table 3 • Contingency tables for AUDIT, PHQ-9, and GAD-7

AUDIT level	PHQ levels		GAD levels		Total	% (general co-occurrence)	% (partial co-occurrence)
			>10	<10			
Level 1	>10	Count	89.000	101.000	190.000	10.66%	30.48%
	<10	Count	13.000	632.000	645.000		
	Total	Count	102.000	733.000	835.000		
Level 2	>10	Count	28.000	23.000	51.000	22.05%	35.00%
	<10	Count	1.000	75.000	76.000		
	Total	Count	29.000	98.000	127.000		
Level 3	>10	Count	4.000	5.000	9.000	26.67%	30.78%
	<10	Count	0.000	6.000	6.000		
	Total	Count	4.000	11.000	15.000		
Level 4	>10	Count	12.000	5.000	17.000	54.55%	41.38%
	<10	Count	0.000	5.000	5.000		
	Total	Count	12.000	10.000	22.000		
Total	>10	Count	133.000	134.000	267.000	13.31%	32.13%
	<10	Count	14.000	718.000	732.000		
	Total	Count	147.000	852.000	999.000		

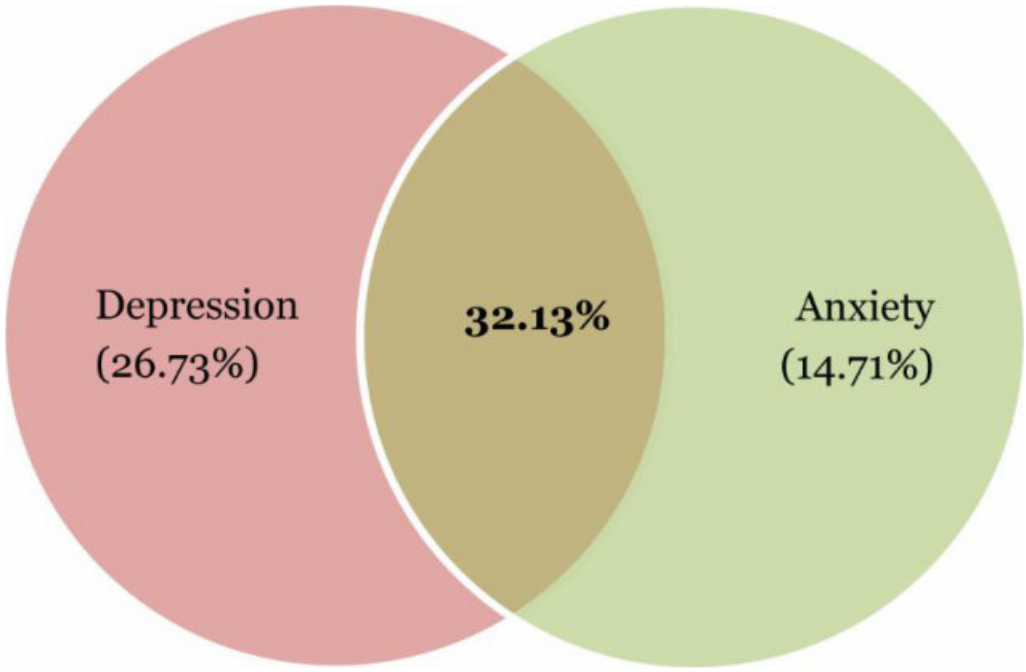

Figure 1 • Co-occurrence of depression and anxiety (partial).

3.4. Alcohol use problems and mental health of the OAT patients

To understand more about the connections between alcohol use and comorbid mental health conditions, four levels of AUDIT measure [Level 1 (0–7); Level 2 (8–15); Level 3 (16–19); Level 4 (20–40)] were used as the grouping variable (descriptive statistics in **Table 4**). An additional measure was considered—"Missed visits to the OAT site".

To test between-subjects effects, nonparametric Kruskal-Wallis one-way ANOVA was performed for each dependent variable (depression, anxiety, and missed visits), with the AUDIT level as an independent variable (missed visit: 48,958, df 3, $p < 0.001$; PHQ-9: 62,607, df 3, $p < 0.001$; GAD-7: 55,588, df 3, $p < 0.001$).

The depression level significantly elevates as the level of alcohol-related problems increases (**Figure 1**): 6.98 (SD 5.114) for the absence of problems in Level 1, 9.299 (SD 5.386) for Level 2, 11.467 (SD 4.853) for Level 3, and 13.864 (SD 6.081) for Level 4. The same situation is observed for anxiety [elevation of the means from 4.663 (SD 4.073) to 10.636 (SD 5.123)].

Missed visits do not change significantly for patients with different levels of alcohol-related problems (0.571–0.800). However, when the problems become severe (Level 4), the mean for the missed visits increases dramatically to 2.5 (SD 4.262).

Table 4 • Descriptive statistics (AUD as a grouping variable)

					95% confidence interval mean						
	AUDIT level	**Valid**	**Missing**	**Mean**	**Upper**	**Lower**	**Std. deviation**	**Shapiro–Wilk**	***P*-value of Shapiro–Wilk**	**Minimum**	**Maximum**
PHQ-9	1	835	0	6.890	7.237	6.543	5.114	0.907	<0.001	0.000	27.000
	2	127	0	9.299	10.236	8.363	5.386	0.963	0.001	0.000	26.000
	3	15	0	11.467	13.923	9.011	4.853	0.878	0.045	4.000	17.000
	4	22	0	13.864	16.405	11.323	6.081	0.985	0.974	0.000	27.000
GAD-7	1	835	0	4.663	4.940	4.387	4.073	0.872	<0.001	0.000	21.000
	2	127	0	6.386	7.109	5.663	4.158	0.937	<0.001	0.000	18.000
	3	15	0	7.600	10.449	4.751	5.629	0.886	0.058	1.000	19.000
	4	22	0	10.636	12.777	8.496	5.123	0.990	0.997	0.000	21.000
Missed visits	1	834	1	0.571	0.754	0.387	2.707	0.213	<0.001	0.000	31.000
	2	127	0	0.795	1.098	0.493	1.738	0.524	<0.001	0.000	9.000
	3	15	0	0.800	1.380	0.220	1.146	0.718	<0.001	0.000	3.000
	4	22	0	2.500	4.281	0.719	4.262	0.661	<0.001	0.000	17.000

4. Discussion

The results of our study showed mild average levels of severity for all screened mental conditions; thus, the overall rate of signs of alcohol-related problems (AUDIT) in the sample was 3.8 (SD 5.424); general means for depression (PHQ-9) and anxiety (GAD-7) were 7.42 (SD 5.336) and 5.058 (SD 4.264), respectively. Altogether, 16.4% of respondents scored positively for unhealthy alcohol consumption (12.7% hazardous, 1.5% harmful, and 2.2% high-risk levels), 26.73% for signs of depression (3.6% severe, 7.31% moderately severe, and 15.82% moderate levels), and 14.71% for signs of anxiety symptoms (4.6% severe and 10.11% moderate levels). The 2-week prevalence of suicide ideation was high; 24.9% of study participants scored positively.

A comparison of obtained data with others collected in Ukraine before the full-scale Russian invasion is shown in **Table 5**. Several epidemiological mental health studies using the PHQ-9 and GAD-7 were conducted on Ukrainian samples. Comparisons of depression, anxiety, and suicide ideation prevalence among internally displaced persons (IDP) due to the first wave of Russian invasion [40], internally displaced people and the general population [41], and the Romani population of Ukraine [42] allow to observe some differences and speculate about their causes.

Table 5 • Data on depression, anxiety, and suicide ideation among different populations in Ukraine (2-week prevalence, data before February 2022)

Mental health conditions	**OAT patients**			**Romani population**	**Internally displaced people**		**General population**
	(*current study*)	**[43]**	**[44]**	**[42]**	**[40]**	**[41]**	
PHQ-9, depression	26.73%	43.5%	39.4%	32.7%	22%	25%	14%
GAD-7, anxiety	14.71%	X	18.2%	29.6%	17%	20.2%	12.2%
Suicide ideation	24.9%	X	X	26.9%	X		X

The levels of depression prevalence among OAT patients found by Machavariani et al. [43], as well as by Dumchev et al. [44], are higher than those from the current study; however, all of them were in the worldwide statistics window for people with OUD of 27–61% [17]. Ukrainian OAT patients' depression is more prevalent than in the general Ukrainian population but comparable with ones among vulnerable samples, such as Romani people [42] and IDPs [40, 41].

At the same time, OAT patients' generalized anxiety prevalence is 2–1.6-fold lower than in the Romani population (14.71–18.2% vs. 29.6%) and around 2–5% lower than in IDPs (14.71–18.2% vs. 17–20.2%).Data on the Ukrainian sample are under or comparable only with a lower threshold for the worldwide prevalence of anxiety disorders among opioid users based on a recent systematic review of 14–43% [17] and a meta-analysis of 24.0–33.3% [45].

As for suicide ideation, there is only one source for intra-country comparison, however, with different methodologies based on the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI) [46]. Data collected in 2002 show 8.2% of lifetime and 1.8% of 12-month prevalence for suicide

ideation [46]. Our data demonstrate a drastically higher level of 2-week suicidal ideation prevalence (24.9%) in comparison to those data for the general population. Ukrainian data are consistent (although it is essential to mention the difference in data gathering methodology and time frame of prevalence) with those recently found across the globe. Thus, US adults with OUD self-reported past 12-month thoughts of killing oneself in 29.8% of cases in 2020 [47]; among OAT centers' participants interviewed in 2021 in Nepal, lifetime suicidality was observed in 26.0% of cases [48]; 41% of the OAT patients in Norway surveyed during 2016–2020 had attempted to die by suicide at least once during their lifetime [49].

Alcohol-related problems in Ukraine for the first time were screened with CIDI in 2002, providing the general population data for the lifetime (13.49%), 12-month (5.84%), and 1-month (2.83%) prevalence [50]. The new study utilizing AUDIC-C (abbreviated form of the AUDIT) revealed 13.3% of alcohol-related problems prevalence among OAT patients in Ukraine, which is close to our data (16.4%) [43]. It can be considered as a sign of elevated risk to have alcohol-related problems in comparison with the general population.

High numbers of harmful alcohol consumption by opioid users are the key finding in the majority of studies exploring the question of substances intertwined use [4, 5, 7, 18].

4.1. Limitations of the study

The study has limitations. Data were gathered from October 2021 to January 2022, and since then, the situation in Ukraine has drastically changed due to the full-scale Russian invasion. Therefore, our data and conclusions might serve as a baseline for further research, but they do not represent the real-time situation. No data regarding age, gender, occupation, exact medication, etc., were collected. Therefore, concluding about social or other determinants is impossible. The stage of the OAT treatment was not recorded for each patient; therefore, it is impossible to conclude the impact of the OAT lengths and stages on the patient's mental health condition. In the study, only screening instruments were used, without the confirmation of the diagnosis via clinical interviews or other means; therefore, it is impossible to make conclusions about the prevalence of mental health disorders based on the self-reported measures, and we prefer to use the "mental health conditions" and "symptoms". Additionally, despite the extensive use of the AUDIT, PHQ-9, and GAD-7 in Ukraine and the approval of the Ministry of Health for use in the OAT settings, validation studies of those instruments are scarce.

5. Conclusions

The prevalence of mental health conditions among people with OUDs who are receiving opioid-assisted treatment is very high in comparison to the general population, as explored in other studies. Depression is almost 2-fold higher (26.73% vs. 14%), anxiety is comparable (14.71% vs. 12.2%), and suicide ideations are highly prevalent (24.9%, each 4th of the patients). The same is valid for alcohol use problems, and their prevalence is very high (16.4%).

As for the comorbidities between all screened conditions, 13.31% of all patients who participated in the study had co-occurrence of depression and anxiety symptoms (32.13% of all screened positive for depression/anxiety). The depression and anxiety co-occurrence shows a tendency to grow with increasing severity of alcohol use-connected problems (from 10.66% to 54.55%).

The severity of depression and anxiety symptoms is connected to the seriousness of alcohol use problems. The more severe the alcohol-related problems of the OAT patients, the higher the scores for depression (the mean PHQ-9 score changes from 6.89 for the patients with an absence of alcohol-related problems to 13.86 for those with the largest AUDIT scores). The same tendency is for generalized anxiety scores (changing from 4.66 GAD-7 mean scores to 10.64). The additional interconnection was found for the number of missed visits to the OAT sites, with most of the weight falling to the last level of AUDIT scores, indicating possible moderate or severe AUD—2.5 missed days during the month.

The data received corresponded with those obtained in a few similar studies conducted in Ukraine.

The results of this study point out critical next steps regarding the support of people receiving OAT in Ukraine. Their mental health needs must be taken into account, as it impacts not just the patient's well-being but adherence to OAT itself. There must be a proposal for additional mental health support (psychological, social, and pharmacological) for OAT patients. During the support, complex needs must be addressed simultaneously—alcohol use-related problems, depression, anxiety, and other possible mental conditions.

Funding

The article is based on the results of the study performed by the Public Health Center of Ministry of Health of Ukraine within the program of the Global Fund to Fight AIDS, Tuberculosis and Malaria, "Accelerating Progress in Reducing the Burden of Tuberculosis and HIV Infection in Ukraine", under the Grant Agreement between the Public Health Center of Ministry of Health of Ukraine and the Global Fund to Fight AIDS, Tuberculosis and Malaria No. 1936 of December 4, 2020. The donor was not involved in the study design, the collection, analysis, and interpretation of data or the preparation of the article.

Author contributions

Conceptualization, V.K. and I.I.; methodology, V.K.; formal analysis, V.K.; investigation, V.K. and V.G.; resources, I.I.; data curation, V.K.; writing—original draft preparation, V.K. and V.G.; writing—review and editing, I.I.; visualization, V.K.; supervision, I.I.; project administration, I.I.; funding acquisition, I.I. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

Data availability statement

Data are available under the Creative Commons Zero "No rights reserved" data waiver (CC0 1.0 Public domain dedication) on Zenodo: Prevalence of alcohol use, depressive and anxiety disorders among patients of opioid agonist treatment programs

in Ukraine [Data set]. https://doi.org/10.5281/zenodo.10256403 [51].

Institutional review board statement

The study protocol was developed in close collaboration with representatives of the OAT sites. Experts from the OAT sites evaluated all research tools. The study followed the Declaration of Helsinki and the National Psychological Association of Ukraine Ethical Regulation. All the research stages were developed according to the requirements of international guidelines for the ethical review of epidemiological studies [52, 53]. The Zhytomyr State University Ethics Review Board approved the ethics protocol, approval number 05-2208/2021 from 10.07.2021.

Informed consent statement

Informed consent was obtained from all the patients involved in the study.

Sample availability

The authors declare no physical samples were used in the study.

Additional information

Received: 2024-02-07

Accepted: 2024-04-09

Published: 2024-04-30

Academia Mental Health and Well-Being papers should be cited as *Academia Mental Health and Well-Being 2024*, ISSN pending, https://doi.org/10.20935/MHealthWellB6210. The journal's official abbreviation is *Acad. Ment. Health WellB*

Publisher's note

Academia.edu stays neutral with regard to jurisdictional claims in published maps and institutional affiliations. All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Copyright

References

1. UNODC. World drug report 2022. United Nations publication. 2022. Available from: https://www.unodc.org/unodc/data-and-analysis/world-drug-report-2022.html
2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, text revision DSM-5-TR. 5th ed. Washington (DC): American Psychiatric Association; 2022.
3. World Health Organization. International statistical classification of diseases and related health problems 11th ed. Geneva: World Health Organization; 2019.
4. Stinson FS, Grant BF, Dawson DA, Ruan WJ, Huang B, Saha T. Comorbidity between DSM-IV alcohol and specific drug use disorders in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Drug Alcohol Depend. 2005;80(1):105–16.
5. Hartzler B, Donovan DM, Huang Z. Comparison of opiate-primary treatment seekers with and without alcohol use disorder. J Subst Abuse Treat. 2010;39(2):114–23.
6. Hser YI, Mooney LJ, Saxon AJ, Miotto K, Bell DS, Huang D. Chronic pain among patients with opioid use disorder: Results from electronic health records data. J Subst Abuse Treat. 2017;77:26–30. doi: 10.1016/j.jsat.2017.03.006. Epub 2017 Mar 9. PMID: 28476267; PMCID: PMC5424616.
7. Weitzman ER, Ong MS. Rising prevalence of comorbid alcohol and opioid use disorders in adolescents and young adults in the United States. J Gen Intern Med. 2019;34:1987–9.
8. Jones CM, Paulozzi LJ, Mack KA, Centers for Disease Control and Prevention (CDC) Alcohol involvement in opioid pain reliever and benzodiazepine drug abuse-related emergency department visits and drug-related deaths - United States, 2010. MMWR Morb Mortal Wkly Rep. 2014;63(40):881–5. doi: 10.1098/rstb.2013.0595
9. Frank D, Mateu-Gelabert P, Guarino H, Bennett A, Wendel T, Jessell L, et al. High risk and little knowledge: overdose experiences and knowledge among young adult nonmedical prescription opioid users. Int J Drug Policy. 2015;26(1):84–91. doi: 10.1016/j.drugpo.2014.07.013. Epub 2014 Jul 31. PMID: 25151334; PMCID: PMC4277710.
10. Hickman M, Lingford-Hughes A, Bailey C, Macleod J, Nutt D, Henderson G. Does alcohol increase the risk of overdose death: the need for a translational approach. Addiction. 2008;103(7):1060–2. doi: 10.1111/j.1360-0443.2008.02134.x. Epub 2008 Apr 7. PMID: 18397360.
11. Bogdanowicz KM, Stewart R, Broadbent M, Hatch S, Hotopf M, Strang J, et al. Double trouble: psychiatric comorbidity and opioid addiction-all-cause and cause-specific mortality. Drug Alcohol Depend. 2015;148:85–92. doi: 10. 1016/j.drugalcdep.2014.12.025
12. Witkiewitz K, Votaw VR, Vowles KE, Kranzler HR. Opioid misuse as a predictor of alcohol treatment outcomes in the COMBINE study: mediation by medication adherence. Alcohol Clin Exp Res. 2018;42(7):1249–59. doi: 10.1111/acer.13772. Epub 2018 Jun 9. PMID: 29873089; PMCID: PMC6063524.
13. Regier DA, Farmer ME, Rae DS, Locke BZ, Keith SJ, Judd LL, et al. Comorbidity of mental disorders with alcohol and other drug abuse. Results from the Epidemiologic Catchment Area (ECA) study. JAMA. 1990;264:2511–8.

14. Kessler RC, Nelson CB, McGonagle KA, Edlund MJ, Frank RG, Leaf PJ. The epidemiology of co-occurring addictive and mental disorders: implications for prevention and service utilisation. Am J Orthopsychiatry. 1996;66:17–31.

15. Kadden RM, Kranzler HR, Rounsaville BS. Validity of the distinction between substance-induced and independent depression and anxiety disorders. Am J Addict. 1995;4:107–17.

16. Schuckit MA. Comorbidity between substance use disorders and psychiatric conditions. Addiction. 2006;101(Suppl 1): 76–88.

17. Rogers AH, Zvolensky MJ, Ditre JW, Buckner JD, Asmundson GJ. Association of opioid misuse with anxiety and depression: A systematic review of the literature. Clin Psychol Rev. 2021;84:101978.

18. Soyka M. Alcohol use disorders in opioid maintenance therapy: prevalence, clinical correlates and treatment. Eur Addict Res. 2015;21(2):78–87.

19. Zhong BL, Xu YM, Xie WX, Lu J, Yu WB, Yan J. Alcohol drinking in Chinese methadone-maintained clients: a self-medication for depression and anxiety? J Addict Med. 2019; 13(4):314–21.

20. Nolan S, Klimas J, Wood E. Alcohol use in opioid agonist treatment. Addict Sci Clin Pract. 2016;11:1–7.

21. Ryder N, Cullen W, Barry J, Bury G, Keenan E, Smyth BP. Prevalence of problem alcohol use among patients attending primary care for methadone treatment. BMC Fam Pract. 2009;10:42.

22. Rosic T, Naji L, Bawor M, Dennis BB, Plater C, Marsh DC, et al. The impact of comorbid psychiatric disorders on methadone maintenance treatment in opioid use disorder: a prospective cohort study. Neuropsychiatr Dis Treat. 2017;13: 1399–408. PMID: 28579787; PMCID: PMC5449137.

23. Senbanjo R, Wolff K, Marshall J. Excessive alcohol consumption is associated with reduced quality of life among methadone patients. Addiction. 2007;102(2):257–63.

24. Sharma B, Bhandari SS, Dutta S, Soohinda G. Study of sociodemographic correlates, anxiety, and depression among opioid dependents admitted in treatment centres in Sikkim, India. Open J Psychiatry Allied Sci. 2019;10(2): 139–45. doi: 10.5958/2394-2061.2019.00030.2. Epub 2019 Feb 25. PMID: 31263773; PMCID: PMC6602083.

25. Roncero C, Barral C, Rodríguez-Cintas L, Pérez-Pazos J, Martinez-Luna N, Casas M, et al. Psychiatric comorbidities in opioid-dependent patients undergoing a replacement therapy programme in Spain: The PROTEUS study. Psychiatry Res. 2016;243:174–81.

26. Wu LT, Blazer DG, Gersing KR, Burchett B, Swartz MS, Mannelli P, et al. Comorbid substance use disorders with other Axis I and II mental disorders among treatment-seeking Asian Americans, Native Hawaiians/Pacific Islanders, and mixed-race people. J Psychiatr Rese. 2013; 47(12):1940–8.

27. Iskandar S, van Crevel R, Hidayat T, Siregar IM, Achmad TH, van der Ven AJ, et al. Severity of psychiatric and physical problems is associated with lower quality of life in methadone patients in Indonesia. Am J Addict. 2013;22(5): 425–31.

28. Ngo HT, Tait RJ, Hulse GK. Hospital psychiatric comorbidity and its role in heroin dependence treatment outcomes using naltrexone implant or methadone maintenance. J Psychopharmacol. 2011;25(6):774–82.

29. Fei JTB, Yee A, Habil MHB. Psychiatric comorbidity among patients on methadone maintenance therapy and its influence on quality of life. Am J Addict. 2016;25(1):49–55.

30. Rosic T, Worster A, Thabane L, Marsh DC, Samaan Z. Exploring psychological symptoms and associated factors in patients receiving medication-assisted treatment for opioid-use disorder. BJPsych open. 2020;6(1):e8.

31. Peles E, Schreiber S, Adelson M. Factors predicting retention in treatment: 10- year experience of a methadone maintenance treatment (MMT) clinic in Israel. Drug Alcohol Depend. 2006;82:211–7.

32. Huang CL, Lee CW. Factors associated with mortality among heroin users after seeking treatment with methadone: a population-based cohort study in Taiwan. J Subst Abuse Treat. 2013;44(3):295–300.

33. Kumar P, Sharma S, Saini SK, Mittal S, Gupta V. A comparative study to assess the mental health problems, quality of life, work ability and social adjustments among OST and non-OST drug users in Chandigarh. Nurs Midwifery Res J. 2022;18(4):191–204. doi: 10.1177/0974150X221127450

34. Bojko MJ, Mazhnaya A, Marcus R, Makarenko I, Islam Z, Filippovych S, et al. The future of opioid agonist therapies in Ukraine: a qualitative assessment of multilevel barriers and ways forward to promote retention in treatment. J Subst Abuse Treat. 2016;66:37–47.

35. Public Health Center of the Ministry of Ukraine. OAT statistics. 2024. Available from: https://phc.org.ua/kontrol-zakhvoryuvan/zalezhnist-vid-psikhoaktivnikh-rechovin/zamisna-pidtrimuvalna-terapiya-zpt/statistika-zpt

36. National Health Center of Ukraine. Concluded contracts on medical care of the population under the program of medical guarantees. 2024. Available from: https://edata.e-health.gov.ua/e-data/dashboard/pmg-contracts

37. Ministry of Health of Ukraine. On approval of medical care standards "mental and behavioral disorders resulting from opioid use". Order N 2555, 09.11.2020 (UA). 2020. Available from: https://zakon.rada.gov.ua/rada/show/v2555282-20#Text

38. Manea L, Gilbody S, McMillan D. Optimal cut-off score for diagnosing depression with the Patient Health Questionnaire (PHQ-9): a meta-analysis. CMAJ. 2012;184(3):E191–6.

39. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. Arch Intern Med. 2006;166(10):1092–7.

40. Roberts B, Makhashvili N, Javakhishvili J, Karachevskyy A, Kharchenko N, Shpiker M, et al. Mental health care utilisation among internally displaced persons in Ukraine: results from a nation-wide survey. Epidemiol Psychiatr Sci. 2019;28(1):100–11.

41. Kuznetsova I, Catling J, Mikheieva O, Round J, Babenko S. The mental health of internally displaced people and the general population in Ukraine. The results of a research project ("Ukraine's hidden tragedy: understanding the outcomes of population displacement from the country's war torn regions") of interdisciplinary team from the University of Birmingham, University of Oxford and Ukrainian Catholic University (AHRC PCCSR award). 2019. Available from: https://www.researchgate.net/publication/331703577_The_Mental_Health_of_IDPs_and_the_general_population_in_Ukraine

42. Gorbunova V, Klymchuk V, Savychenko O, Palii V, Kondur Z, Popenko V, et al. Depression, anxiety, suicidal ideation and social determinants of mental health of Romani in Ukraine. Ment Health Soc incl. 2023. Vol. ahead-of-print No. ahead-of-print. doi: 10.1108/MHSI-06-2023-0070

43. Machavariani E, Bromberg DJ, Dumchev K, Dvoriak S, Zeziulin O, Morozova O, et al. Design, implementation and preliminary results of a type-2 hybrid cluster-randomized trial of integrating screening and treatment for major depressive disorder into specialty clinics providing opioid agonist therapies in Ukraine. Contemp Clin Trials. 2023;131: 107248.

44. Dumchev K, Filippovych M, Danshyna A, Kiryazova T. Study of the prevalence of psychiatric disorders among patients of the substitution maintenance therapy program. Report on the implementation and results of the study. Version 30.06. 2022. Prepared by the European Institute for Public Health Policy within the framework of the agreement with the Public Health Center of the Ministry of Health of Ukraine. 2022. Source (Ukrainian language): Available from: https://phc.org.ua/sites/default/files/users/user90/2021_2022_OST_mental_disorders_zvit.pdf

45. Santo Jr T, Campbell G, Gisev N, Martino-Burke D, Wilson J, Colledge-Frisby S, et al. Prevalence of mental disorders among people with opioid use disorder: a systematic review and meta-analysis. Drug Alcohol Depend. 2022;238:109551.

46. Bromet EJ, Havenaar JM, Tintle N, Kostyuchenko S, Kotov R, Gluzman S. Suicide ideation, plans and attempts in Ukraine: findings from the Ukraine World Mental Health Survey. Psychol Med. 2007;37(6):807–19.

47. Na PJ, Bommersbach TJ, Petrakis IL, Rhee TG. National trends of suicidal ideation and mental health services use among US adults with opioid use disorder, 2009–2020. EClinicalMedicine. 2022;54:101696.

48. Pant SB, Thapa SB, Howard J, Ojha SP, Lien L. Mental disorders and suicidality among opioid agonist treatment service users in Nepal: a cross sectional study. SSM-Ment Health. 2022;2:100165.

49. Vold JH, Løberg EM, Aas CF, Steier JA, Johansson KA, Fadnes LT. Prevalence and correlates of suicide attempts in high-risk populations: a cross-sectional study among patients receiving opioid agonist therapy in Norway. BMC Psychiatry. 2022 Mar 15;22(1):181.

50. Bromet EJ, Gluzman SF, Paniotto VI, Webb CP, Tintle NL, Zakhozha V, et al. Epidemiology of psychiatric and alcohol disorders in Ukraine: findings from the Ukraine World Mental Health survey. Soc Psychiatry Psychiatr Epidemiol. 2005;40:681–90.

51. Klymchuk V, Gorbunova V. Prevalence of alcohol use, depressive and anxiety disorders among patients of Opioid Agonist Treatment programmes in Ukraine. 2023. [Data set]. Zenodo. Doi: 10.5281/zenodo.10256403

52. Buck G, Coughlin SS, Snider Jr DE, Soskolne CL, Weed DL. American College of Epidemiology ethics guidelines. Ann Epidemiol. 2000;10(8):487–97.

53. Council for International Organizations of Medical Sciences. International guidelines for ethical review of epidemiological studies. Law Med Health Care. 1991;19(3–4):247–58.