Depression and associated factors among ART patients in Ukraine

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Background

Ukraine is actively committed to reducing HIV/AIDS related morbidity and mortality by improving access to quality HIV prevention services, diagnosis, treatment, care and support programs, particularly for those most-at-risk for HIV infection. However, HIV-infection remains a prominent public health problem in Ukraine. According to CPH surveilance data, as of Jan 1,2018, an estimated 244,000 people were living with HIV in Ukraine; approximately 98,237 PLHIV were on ART, and approximitely 87,610 achieved viral suppression. The Ukrainian government supports ART for about half of PLHIV receiving ART, with the remainder covered by donor funding. National goals for fast track HIV epidemic control include extending ART services to 196,000 PLWH by 2020.

Mental health disorders among PLHIV have an immense detrimental impact on initiation of and adherence to ART and progression to AIDS, leading to poorer health outcomes and mortality. Until very recently, this issue has been neglected by HIV service providers in Ukraine globally, representing a lost opportunity for more efficient HIV response. In this study we assessed prevalence of depression and its association with other health outcomes.

Methods

The candidates for participation in the survey were randomly selected from a larger sample of patients in ART Optimization study. The parent study sample consisted of patients receiving ART between 2017-2019 and was stratified by 6 groups:

- patients starting on dolutegravir
- patients starting on lopinavir/ritonavir
- patients starting on efavirenz
- patients switching from LPV/r or EFV to DTG
- patients continuing on LPV/r
- patients continuing on EFV.

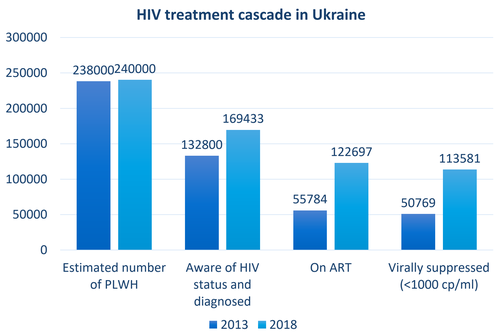
The survey sample followed the same structure.
The patients were enrolled by the clinic staff by using contact details provided in the medical records.
The most frequent way to contact was by phone, although meeting in person during regular clinical visits was also be permitted. The maximum number of contact attempts was set at three: if a patient was not reached after three attempts, (s)he was determined as unreachable and the next patient from the remainder of the recruitment log was contacted. Once contact is established, the recruiter will read a standard script inviting the patient to participate in the survey. If the patient agrees, an appointment at the regional AIDS center will be scheduled. Patients who came for the study appointment went through the informed consent procedure. Those who declined to participate during initial contact or during informed consent were replaced with the next patients in sequence in the recruitment log.
The interviews were conducted privately by experienced interviewers.

The patient questionnaires collected self-reported data on the quality of life, level of satisfaction with treatment results, current side effects, mental health, substance use and substance use management. We used the following tools:

- Treatment adherence – the ACTG tool.
- The SF-12 tool: it is composed of 12 items that produce two measurements related to physical health and mental health, as well as quality of life determined by health.
- Questionnaire on the subject of satisfaction with HIV management results: it is a modified tool composed of 7 items which are designed to determine the general level of satisfaction and suitability of medical care to the pace of life.
- HIV symptom index: it is a list of 20 most common treatment side effects, which includes a scale of side effect frequency experienced by the patients.
- Severity of alcohol and drug abuse: the ASSIST tool.
- The CES-D depression scale.

The survey data were collected using REDCap online platform. Clinical data from the HIV MIS (electronic medical record system) were extracted and merged to the survey dataset using patient ID (clinical data were matched not for all patients).

Study protocol was approved by the IRB at Ukrainian Institute on Public Health Policy.



Research sites

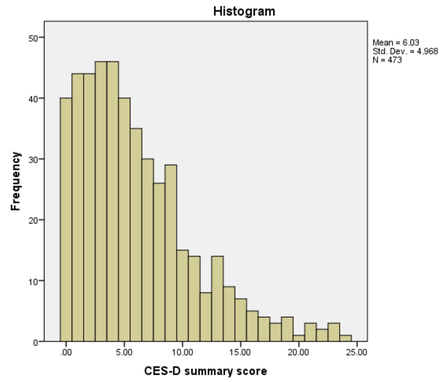
23 sites from 11 regions of Ukraine were included in the study

#	Oblast	Clinic	Total
1	Dnipropetrovsk	Oblast Public Enterprise "Krivy Rig Centre for AIDS Control and Prevention"	25
2	Dnipropetrovsk	Public Enterprise "Dnipropetrovsk City Clinical Hospital #21 named after Professor E.Popkova" under the Dnipropetrovsk Oblast Council"	27
3	Dnipropetrovsk	Oblast Public Enterprise "Krivy Rig Dermato-venerologic Dispensary "	13
4	Dnipropetrovsk	Public Enterprise "Dnipropetrovsk Oblast Centre for AIDS Control and Prevention"	16
5	Dnipropetrovsk	Public Enterprise "Pavlograd City Clinic #1" under the Dnipropetrovsk Oblast Council"	21
6	Dnipropetrovsk	Municipal Enterprise "Krivy Rig City Clinical Hospital #8" under the Dnipropetrovsk Oblast Council"	28
7	Dnipropetrovsk	Public Enterprise "Krivy Rig City Clinic #1" under the Dnipropetrovsk Oblast Council"	29
8	Donetsk	Public Entity "Mariupol City Clinic #4 named after I.Matzuk"	22
9	Donetsk	Donetsk Oblast Centre for AIDS Control and Prevention	23
10	Zaporizhzha	Public Entity "Zaporizhzha Oblast Centre for AIDS Control and Prevention"	23
11	Zaporizhzha	Public Entity "Melitopol Centre for AIDS Control and Prevention" under the Zaporizhzha Oblast Council	26
12	Kyiv	Public Enterprise under the Kyiv Oblast Council "Kyiv Oblast Centre for HIV/AIDS Control and Prevention"	10
13	Kyiv	Public Enterprise under the Bila Tzerkva City Council "Bila Tzerkva City Clinic #3"	19
14	Kirovograd	Public Non-Profit Enterprise "Kirovograd Oblast Centre for AIDS Control and Prevention"	21
15	Mykolayiv	Mykolayiv Oblast Centre for Palliative Care and Comprehensive Services under the Mykolayiv Oblast Council	28
16	Odesa	Public Entity "Odesa City Centre for HIV/AIDS Control and Prevention"	13
17	Odesa	Public Entity "Odesa Oblast Centre for AIDS Control and Prevention"	4
18	Odesa	Public Non-Profit Enterprise "Odesa Oblast Centre for Socially Hazardous Diseases" the "Dovira" Testing Site #3	0
19	Poltava	Poltava Oblast Centre for HIV Prevention and AIDS Control	24
20	Kherson	Kherson Oblast Centre for AIDS Prevention and Control	24
21	Cherkasy	Public Entity "Cherkasy Oblast Centre for AIDS Prevention and Control" under the Cherkasy Oblast Council	23
22	Chernigiv	Public Entity "Oblast Centre for AIDS Prevention and Control" in the Chernigiv City	31
23	Kyiv City	Kyiv City Centre for AIDS Prevention and Control of the Kyiv City Clinical Hospital #5	23
	Total		473

Descriptive results

The survey included 473 patients.
44.8% were males, average age was 40.5 years
Moderate or severe depression (CES-D score >=10) was detected in 93 (19.7%) patients.

			Statistic	Std. Error
CES-D summary score	Mean		6.03	0.23
	95% Confidence Interval for Mean	Lower Bound	5.58	
		Upper Bound	6.48	
	Median		5.00	
	Std. Deviation		4.97	
	Minimum		0.00	
	Maximum		24.00	
	Interquartile Range		7.00	



Association with clinical outcomes

		moderate or severe depression						
		Total		no or mild		moderate or severe		Chi-sq.
		Count	Column N %	Count	Row N %	Count	Row N %	P-value
Outcome	No	19	4.3%	13	68.4%	6	31.6%	.154
	Yes	428	95.7%	349	81.5%	79	18.5%	
interruption outcome	not interrupted	439	92.8%	355	80.9%	84	19.1%	.300
	interrupted	34	7.2%	25	73.5%	9	26.5%	
loss to follow-up outcome	continues	464	98.1%	376	81.0%	88	19.0%	.006
	lost to follow-up	9	1.9%	4	44.4%	5	55.6%	
HCV composite last	no	123	61.5%	108	87.8%	15	12.2%	.022
	yes	77	38.5%	58	75.3%	19	24.7%	
HBV composite last	no	177	89.8%	148	83.6%	29	16.4%	.334
	yes	20	10.2%	15	75.0%	5	25.0%	
TB composite last	no	206	73.3%	170	82.5%	36	17.5%	.220
	yes	75	26.7%	57	76.0%	18	24.0%	
OI diagnosis last	no	194	43.4%	158	81.4%	36	18.6%	.829
	yes	253	56.6%	204	80.6%	49	19.4%	

Correlation with self-reported data

	Pearson correlation coefficient	p-value
Past 3m injecting drug use	0.178	0.000
Lifetime injecting drug use	0.194	0.000
Age	0.146	0.001
SF-12 norm-based physical health	-0.512	0.000
SF-12 norm based mental health	-0.611	0.000
Treatment satisfaction composite score	-0.337	0.000
Side effects composite score 0-4	0.581	0.000
Number of bothering side effects	0.540	0.000
Missed any doses in the past month	-0.169	0.000
ART adherence category	0.174	0.000
Weekly alcohol intake	0.003	0.950
Education	-0.002	0.967
Clinical stage at baseline	-0.048	0.311
CD4 last result	-0.001	0.979

Conclusions

The study found a substantial level of depression among ART patients in Ukraine. Our findings confirm the adverse impact of depression on HIV treatment adherence and outcomes, and the contribution of co-morbidities (such as HCV and drug use) to the burden of mental illness.
Integration of mental health services in HIV clinics should become a priority for programs aiming to achieve high level of adherence and the third "90" of the UNAIDS targets.

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The authors declare no conflict of interest

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