

Narcology and Drug Addiction. Some Aspects of Replacement Therapy

Gobejishvili I.¹, Kazakhashvili N.¹, Kobidze T.², Loria L.¹

Abstract

Introduction: Despite of the fact that patients join the Methadone program voluntarily and on their own initiative, often are facts of taking various substances (including narcotic, psychotropic, hypnotic, antiparkinsonian, antiepileptic drugs, etc.) and alcohol together with the already prescribed medication. This leads to hospitalization and re-hospitalization with the diagnosis of acute poisoning, which requires proper diagnosis and additional treatment in emergency, toxicology, intensive care or resuscitation departments and can be complicated in the form of the development of a new somatic pathology or exacerbation of a concomitant chronic disease. Our study is important in terms of assessing (i) the frequency of acute poisoning of patients involved in the replacement treatment program, (ii) the type of xenobiotics, (iii) the delay of hospitalization and (iv) the rate of expenses incurred by the state.

Methods: Based on the Aims and Objectives the research process uses the methods of searching, collection, systematization, description, comparison and analysis. Public information (anonymized data) was requested from The National Health Agency and Center for Mental Health and Prevention of Addiction. The study included all the patients hospitalized with acute poisoning in 2017-2020. and who were on substitution therapy in 2019.

Results: 12,925 beneficiaries received substitution therapy under the state program "Treatment of drug addicts" in 2019. In Total 1,562 cases of hospitalization of 1,059 people were recorded during 2017-2020; government expenditures went up to 252 730.27 Georgian Lari Out of the 1562 cases, 993 were associated with alcohol intoxication, 267 with drugs and psychodyslexic drugs, 99 with the toxic effects of an unspecified substance, 72 intoxications with psychotropic substances. Duration of stay in hospital averaged 5.1 hours in outpatient cases, 2.8 hours in the day hospital and 37.6 hours in the hospital. As of to the frequency of hospitalizations in 2017-20 818 people from 1059 were hospitalized once due to acute intoxication; 143 persons twice, 46 three times; also, there was a case of 12 times hospitalization of one person in different years with the various (T51.9, T42.4, T42.6, T43.9) diagnosis.

Conclusion:

Based on the data obtained as a result of the study, it can be said with certainty that persons on substitution therapy under the state program "Treatment of patients suffering from drug addiction" are additionally receiving alcohol and xenobiotics. Further research should be initiated to determine the reason for the use of these substances and develop recommendations, the implementation of which will further reduce acute poisoning of patients involved in the substitution therapy program, complications of acute poisoning and, accordingly, additional payments from the state.

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Key Words: Methadone program; xenobiotics; alcohol; research; poisoning; diagnosis.

Introduction

Drug addiction is an urgent and fundamental problem of global healthcare. According to the UN Office on Drugs and Crime (UNODC) report of June 24, 2021, in 2020, approximately 275 million people around the world used drugs, and 36 million people are problem users and suffer from addiction and drug-related disorders (1). It's obvious that the spread of drug addiction poses a global threat to the healthcare, economy, law and order and security of the population of many countries of the world, including Georgia (2). To reduce damage caused by drug use (3) in Georgia, effective cooperation between the Global Fund and the state enabled the launching of treatment program of drug

addiction with substitution drugs since 2005 (4). This treatment is conducted within the framework of the state program of "Treatment of Patients Suffering from Drug Addiction" (3). The quantitative index of beneficiaries included in the state program by year is shown in Table No1.

When treated with replacement therapy, patients under the supervision of a doctor should typically feel normal, be adequate, and be able to work. This treatment allows opioid addicts to improve their physical and mental health, avoid criminal activity, study effectively, work, and become a full-pledged members of their family or society. But despite the fact that opioid-addicted patients join the program voluntarily and on their own initiative, it is still very common for them in addition to the program treatment, to take different types of substances, including narcotics, psychotropic/sleeping/anti-Parkinson's/anti. epileptic drugs, etc. and alcohol. This can lead to hospitalization or rehospitalization with a diagnosis of acute intoxication which requires proper diagnosis and additional treatment in emergency, toxicology, intensive care, or intensive care departments. The provider of the program, the Mental Health, and Drug Addiction Prevention Centre, is usually not informed when a patient included in the substitution treatment program is admitted to another hospital for treatment as a result of intoxication. Therefore, if later

From the ¹Faculty of Medicine Iv.Javakhashvili Tbilisi State University, Tbilisi Georgia. ²Tbilisi State Medical University, Tbilisi, Georgia.

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Address requests to: Irine Gobejishvili

E-mail: irine.gobejishvili756@med.tsu.edu.ge

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the beneficiary of the program does not voluntarily declare about being admitted to other healthcare institutions for above mentioned issue it becomes unclear how successful substitution treatment program is. Due to the very specific mentality of this group of patients, complications of acute poisoning are not declared and found in some cases, the treatment of these complications is incomplete, which leads to a deterioration of the health of the beneficiaries, decreasing in their working ability, causing disability issues, which, in turn, requires more intensive and extensive medical involvement and hence, the need of more funding from the state. The relevance of the research topic led to the fact that was not clear what amount of beneficiaries involved in the state program of "Treatment of Drug Addiction Patients" consume non-targeted drugs and alcohol, the frequency of their hospitalization with acute intoxication were not prioritized by the beneficiaries hospitalized with these diagnoses, not determined the type of xenobiotics used prevalently by above mentioned hospitalized patients, Clinical qualities of complications with these substances were not studied. Additionally, the amount and effectiveness of the costs reimbursed by the state for the treatment of these types of intoxications were not evaluated. This study is important in terms of evaluating the rate of intoxications, the type of xenobiotics, and the rate of hospitalization of patients involved in the substitution treatment program throughout Georgia. Reviewing existing medical literature on the subject shows that the problem very actual and frequently the patients on the replacement program combine of alcohol (6) and other instances drugs (e.g.: benzodiazepine) (7), pregabalin (e.g., benzodiazepines) (8), pregabalin.

There is a correlation between the prescription of low daily doses of methadone and alcohol use, benzodiazepine overdose, and anxiety in substitution therapy patients. Additionally, the instances of achieving euphoria, reducing abstinence, or increasing the effect of methadone by combining it with other drugs (e.g., benzodiazepines) (7), pregabalin is frequent.

Methods

Based on the set goals and objectives, methods of search, collection, systematization, description, comparison, and analysis are used in the research process. Public information was requested from the National Health Agency, a legal entity under the public law of the Ministry of Labor, Health, and Social Protection for IDPs from the occupied territories of Georgia and from the "Mental Health and Drug Addiction Prevention Centre" LLC. In 2019, depersonalized information was received on the cases of hospitalization of beneficiaries involved in the state program "Treatment of patients suffering from drug addiction" due to intoxication in the period 2017-2020 according to the following requirements (completed on a case-by-case basis): 1. ICD10 code with full name (with F11.0 sub codes; F13.0 sub codes; T40 with sub codes; with sub codes T41; with T42 sub codes; with sub codes T43; T50 with sub codes; with sub codes T51; T65 with sub codes; T96; Y91.1; Y91.2 Z03.6; J96.0, in the event that the primary or additional ICD10 is specified as any other ICD10 required above; R40.2, if the primary or additional ICD10 is specified with any other ICD10 requested above. A case is considered any of the above ICD10, regardless of whether it is primary or additional). 2. Gender; 3.Age; 4.Registration address at the regional level; 5.Address of the medical institution at the regional and municipal level, where a specific person (case) was undergoing treatment; 6.Date of entry and discharge of the person (case) from the medical institution (month, day,

year); 7.What type of services was provided to the person (case) e.g.: inpatient, outpatient... 8. Amount reimbursed by the state; 9. The daily dose of the substitute medicine prescribed in 2019 (if it is variable, the minimum and maximum are indicated separately); 10. NCSP code; 11. Nosology; 12. Artificial code designation; 13. Lethality.

Statistical data

The methods of data organization and cleaning (data preparation), data description (descriptive statistics) and analytical statistics were used in processing the available data. Unit variable analysis was performed. The variables were divided as follows: age category <25, 25-35, 35-45,45-55, 55-65, 65-75; Gender distribution, distribution of cases/persons hospitalized with acute poisoning by year; Cases of hospitalization in 2017-2020 by region in total and separately by year; Emergency outpatient cases by 2017-2020, hospitalization cases by 2017-2020; Expenditures made by the state according to the years 2017-2020, at the ambulatory and inpatient levels in total and separately; Division of cases according to ICD10 in 2017-2020 in total and separately; outcome of hospitalized cases; Rate of delay in the clinic by hour in the case of outpatients, day inpatients and inpatients separately according to the years 2017-2020; level of interventions in case of ambulatory and inpatient; rate of variation of daily dose during replacement therapy; Rate of hospitalized patients on replacement therapy in 2019 and in replacement therapy in 2017-2020; Frequency of hospitalization of patients in 2017-2020.

Results

In 2019, 12,925 beneficiaries received substitution therapy within the framework of the state program "Treatment of patients suffering from drug addiction". 1562 cases of hospitalization of 1059 persons were recorded in 2017-2020. Namely: 490 (378 persons) cases in 2017; 454 (357 persons) cases in 2018; 395 (315 persons) cases in 2019; 223 (190 persons) cases in 2020. Out of the mentioned 1059 persons, 1050 were male and 9 were female. Their ages ranged from 21 to 72. And most of the cases (446) were in the age category of 35 to 45 years. In men, the minimum age was 21 years, and the maximum age was 72 years. In women, the minimum age was 22 years, and the maximum age was 57 years. Most of the hospitalized cases at the regional level are recorded in Tbilisi (828), in Adjara (216), Samegrelo Zemo Svaneti (172) and Imereti (145). 89.2% of the hospitalized cases (1393 cases) came to the emergency outpatient clinic, and 10.8% (169 cases) to the emergency hospital. The expenses incurred by the state totaled 252,730.27 GEL, of which 152,406.99 (60.3%) GEL was spent on 169 cases of emergency hospitalization. According to the diagnoses given by the International Classification of Diseases ICD-10, 993 out of 1562 cases were due to alcohol intoxication, 267 on drugs and psycho dyslexic drugs, 99 on the toxic effect of an unspecified substance, 72 on intoxication with psychotropic substances. It should be noted here that in one case, a person may have had several diagnoses during hospitalization, therefore, the above-mentioned diagnoses are taken separately as indicators. Of the 1562 cases, 1420 resulted in stabilization and only 1 case resulted in death. The rate of inpatient delay in outpatient cases averaged 5.1 hours; 2.8 hours in the case of day inpatients, and 37.6 hours in the case of inpatients. Of the 1,059 hospitalized patients in 2019, 1,053 were on methadone substitution therapy, and 22 people with buprenorphine naloxone (duplication of a person is allowed, since during the year 1 person may have been on meth-

adone for a certain period and then on buprenorphine/naloxone or vice versa). During 2019, the starting dose did not change in 127 persons, and increased in 932 persons. (Increasing the daily dose of methadone from 0.3 ml to 14 ml and the daily dose of buprenorphine/naloxone from 4.28 mg to 10 mg were recorded). As for the interventions carried out in the hospital, in the case of outpatients, they included: detoxification, infusion therapy, laboratory studies, nasogastric sounding, IV catheterization, monitoring of vital functions, inhalation and consultations of doctors of various profiles. In the case of an inpatient, it included: intensive treatment/care of level I, intensive treatment/care of level II – III who had: 1. Acute failure of one vital function (except acute renal failure requiring only renal replacement therapy) and require pharmacological and hardware support of one vital function (controlled breathing). 2. Acute failure of two or more vital functions, requiring hardware support of two or more vital functions (e.g., controlled breathing, renal replacement therapy**) and/or 3. Acute failure of one vital function, requiring hardware support of one vital function (e.g., controlled breathing, renal replacement therapy**) and parental nutrition and/or 4. Acute failure of one vital function and nosocomial infection, requiring hardware support of one vital function (e.g., controlled breathing, renal replacement therapy**). (Region, number of multi-profile tertiary care beds >50, delay in hospital = or <21s/d). In addition to above mentioned detoxification, infusion therapy, laboratory studies, resuscitation, neurological monitoring, blood clotting monitoring, intensive care non-invasive monitoring. Out of 1059 hospitalized persons who were on replacement therapy in 2019, 403 were on replacement therapy in 2017, 680 in 2018 and 796 in 2020. As for the frequency of hospitalization cases in 2017-2020, out of 1059 persons, 818 persons were hospitalized only once because of intoxication. 143 persons 2X, 46X3, however, 1 person was hospitalized 12 times in different years with different (T51.9, T42.4, T42.6, T43.9) diagnoses. In 2019, within the framework of the state program "Treatment of patients suffering from drug addiction", the detailed indicators of the beneficiaries hospitalized with intoxications on substitution therapy are given in Table №2.

Consideration

This study gives the answers to all the questions that were arisen at the beginning of the research and why this research was started. First of all, the spread of alcohol and xenobiotics consumption among people on substitution therapy within the framework of the state program of "Treatment of Drug Addic-

tion Patients" had to be assessed which would be confirmed by acute intoxications in the form of hospitalization. The study revealed that in 2019, with 1,059 beneficiaries enrolled in the program, there were 1,562 hospitalizations during 2017-2020. Secondly, the type of xenobiotics preferentially consumed by persons hospitalized with acute poisoning should have been evaluated. The research revealed that 993 out of 1562 cases were due to alcohol intoxication, 267 cases were due to intoxication with drugs and psychodyslexic drugs, 68, on intoxication with antiepileptic, sedative, sleeping and antiparkinsonian drugs, 75, on poisoning with psychotropic substances, 99 on the toxic effect of an unspecified substance, 46 on intoxication with unspecified medicinal products, medicines and biological substances, 33 on the consequences of poisoning caused by medicinal products, medicines and biological substances, 53 for respiratory failure, 18 for coma unspecified, 1 for poisoning with intravenous anesthetics and 1 case is observed when toxic effects of the ingested substance are suspected. In addition, it was revealed that the same person may have had more than one diagnosis. As for the frequency of hospitalization, a case was revealed when one person was hospitalized 12 times in different years with intoxication.

Thirdly, the costs incurred by the state for hospital treatment should be assessed. The research revealed that a total of 252,730.27 GEL was spent on the treatment of 1,562 cases during 2017-2020. The mentioned study is one of those studies in Georgia that published confirmed data on the consumption of alcohol and xenobiotics among people on substitution therapy within the framework of the state program "Treatment of patients suffering from drug addiction" and the allocations made by the state.

Conclusion

Based on the data obtained as a result of the research, we can say for sure that the people who are on replacement therapy within the framework of the state program for the treatment of patients suffering from drug addiction, regardless of the daily dose of the replacement product prescribed for them, additionally they take alcohol and xenobiotics. Further research is needed to determine the cause of substance use and to develop recommendations that will further reduce the number of acute withdrawal symptoms in patients enrolled in substitution treatment programs, as well as complications of acute poisoning and accordingly, additional allocations from the state.

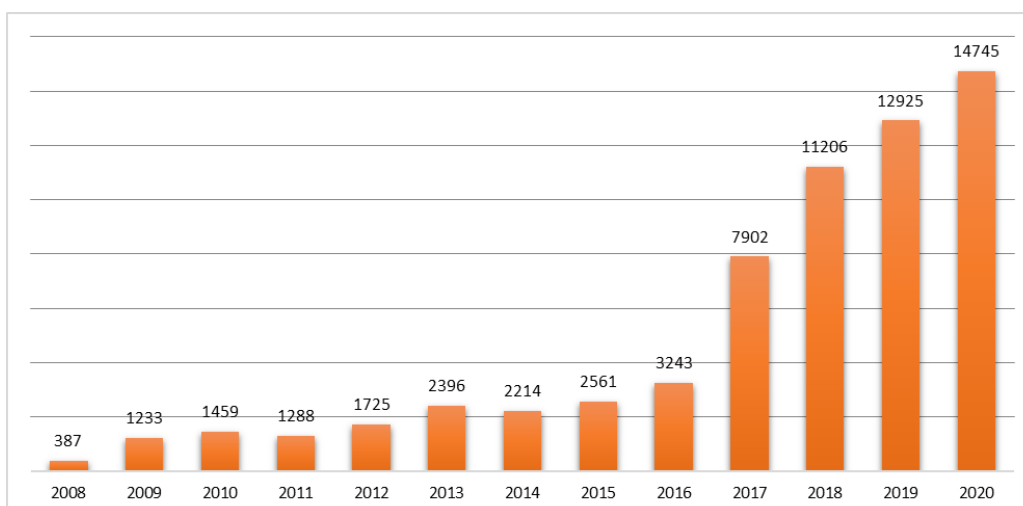


Table № 1. The quantitative index of beneficiaries included in the state program by year

characteristics	In total N	2017	2018	2019	2020
Distribution of hospitalized cases with acute poisoning according to years	1562	490	454	395	223
Distribution of hospitalized cases with acute poisoning according to years	1059	378	357	315	190
Age distribution of hospitalized persons					
<25	23				
25-35	295				
35-45	446				
45-55	226				
55-65	59				
65-75	10				
Gender distribution					
man	1050				
woman	9				
Referral rate to medical facilities					
Tbilisi	828	232	265	224	107
Imereti	145	41	38	41	25
Adjara	216	54	55	69	38
Samegrelo-Zemo svaneti	172	68	47	28	29
Guria	76	60	8	6	2
Racha Leckhumi and kvemo svaneti	2	0	1	1	0
Kaxeti	40	15	9	6	10
Shida Kartli	33	11	9	8	5
Kvemo Kartli	32	7	15	5	5
Samcxe -javaxeti	3	0	0	2	1
Mcxeta-Mtianeti	16	3	7	5	1
Emergency outpatient services including day hospitalization.	1393	450	409	351	183
Emergency inpatient care	169	40	45	44	40
Expenditure paid by the state for emergency outpatient services (GEL);	100 323.28	38458.07	27364.68	22972.06	11528.47
Expenditure paid by the state for emergency inpatient services (GEL);	152 406.99	26531.05	37669.95	60566.21	27639.78
Diagnoses International Classification Of diseases ICD-10 according to					
Toxic effect of alcohol	993				
T51.0 Toxic effect of ethanol, toxic effect of ethyl alcohol		223	120	109	61
T51.8 Toxic effects of other types of alcohol		7	5	2	0
T51.9 Toxic effect of unspecified alcohol;		132	115	120	62

Y91.1 Alcohol intoxication		20	6	5	5
Y91.2 Severe alcohol intoxication		0	1	0	0
Poisoning by drugs and psychodysleptic drugs [hallucinogens]	267				
T40.0 Opium poisoning		0	1	2	0
T40.1 Heroin poisoning		0	2	5	5
T40.2 Poisoning with other opioid drugs		1	2	4	2
T40.3 Methadone poisoning		2	4	5	7
T40.4 Poisoning with other synthetic drugs		13	23	29	16
T40.5 Cocaine poisoning		0	1	2	0
T40.6 Poisoning with other and unspecified drugs		11	51	31	21
T40.7 Hashish (derivatives) poisoning		2	2	2	4
T40.8 Lysergide [LSD] poisoning		2	0	0	0
T40.9 Poisoning by other and unspecified psychodysleptic drugs [hallucinogens];		3	6	4	0
F11.0.0 mental and behavioral disorders caused by taking opioids, acute intoxication without complications		1	1	0	0
Poisoning with antiepileptic, sedative, sleeping and antiparkinsonian drugs;	68				
T42.4 Benzodiazepine poisoning		8	7	4	6
T42.6 Poisoning with other antiepileptic, sedative, sleeping and antiparkinsonian drugs		6	5	3	2
T42.7 Poisoning by unspecified antiepileptic, sedative and sleeping drugs		4	3	2	0
T42.8 Poisoning with anti-Parkinson drugs and other central muscle tone depressants;		7	6	2	1
mental and behavioral disorders caused by taking sedative and sleeping pills, acute intoxication without complications		1	1	0	0
Poisoning with psychotropic substances, which are not included in other rubrics.	75				
T43.0 Poisoning by tricyclic and tetracyclic antidepressants not included in other headings		0	2	2	0
T43.2 Poisoning by other and unspecified antidepressants not included in other headings;		0	1	0	1
T43.3 Poisoning by phenothiazine antipsychotics and neuroleptics not included in other headings		5	2	1	0
T43.4 Poisoning by butyrophenone and thioxanthin neuroleptics not included in other headings;		1	0	0	2
T43.5 Poisoning by other unspecified antipsychotic and neuroleptic drugs, not included in other headings		2	3	1	1
T43.6 Poisoning by psychostimulant drugs that cause dependence, not included in other headings		2	0	2	1

T43.8 Poisoning with other psychotropic drugs, not included in other headings		2	0	3	1
T43.9 Poisoning with an unspecified psychotropic drug, not included in other headings		8	16	11	5
poisoning with diuretics and other unspecified medicinal products, medicines, and biological substances	46				
T50.6 Poisoning with antidote complexes not included in other rubrics, with drugs for the treatment of alcoholism		0	0	1	0
T50.9 Poisoning with other unspecified medicinal products, medicines, and biological substances;		9	21	10	5
Toxic effects other unspecified substances	99				
T65.0 Toxic effect of cyanides		1	0	1	0
T65.8 Toxic effects other unspecified substances		2	3	4	1
T65.9 Toxic effects unspecified substances		14	36	19	18
T96 Consequences of poisoning caused By drugs, medicines and biological substances	33	7	11	14	1
J96 Respiratory failure not included in other rubrics;	53	12	15	18	8
R40.2 Coma;	18	4	6	6	2
various					
T41.1 Poisoning with intravenous anesthetics	1	0	0	1	0
Z03.6 Observation when toxic effects of ingested substance are suspected;	1	0	0	1	0
Outcome	1562				
Recovered	38	31	6	0	1
unfinished treatment, patient went officially;	84	21	25	23	15
Lethality	1	0	0	1	0
Moved to another clinic	16	4	3	6	3
Restoration of basic vital functions	3	0	2	0	1
Stabilization	1420	434	418	365	203
rate of delay in the medical facility (expressed in hours)					
outpatient					
Minimum (hour)		0,4	0	0,5	0,3
Maximum (hour)		22,9	23,8	23,4	22,8
Everage (hour)		4,8	4,9	5,4	5,3
day inpatients					
Minimum (hour)		2,7	1,9	1,7	-
Maximum (hour)		4,5	0	2,2	-
Everage (hour)		3,7	0	1,9	-
inpatient					

Minimum (hour)		0,1	0,3	0,1	0
Maximum (hour)		72,3	140,8	162,7	196,5
Everage (hour)		28,3	38,3	40,7	43
Variation of the dose of the replacement drug during the period of replacement therapy (at the level of one person).	1059				
The dose has not changed	127				
The dose was increased	932				
Variation of 1059 hospitalized patients In replacement therapy indifferent years		403	680	1059	796
Variation of hospitalization at the level of one person 2017-2020 years					
1	818				
2	143				
3	46				
4	23				
5	10				
6	7				
7	2				
8	3				
9	1				
10	2				
11	3				
12	1				

Table №2. The detailed indicators of the beneficiaries hospitalized with intoxications on substitution therapy

References:

1. UNODC World Drug Report 2021: pandemic effects ramp up drug risks, as youth underestimate cannabis danger (AVILABLE HERE AT 31.03.2023)
2. World Drug Report 2017: 29.5 million people globally suffer from drug use disorders, opioids the most harmful (AVILABLE HERE AT 31.03.2023)
3. „2022 წლის ჯანმრთელობის დაცვის სახელმწიფო პროგრამების დამტკიცების შესახებ” Ordinance of the Government of Georgia N4; 12/01/2022 (AVILABLE HERE AT 31.03.2023)
4. Gambashidze N, Sikharulidze Z, Piralishvili G, Gvakharia N. Evaluation of pilot methadone maintenance therapy in Georgia (Caucasus). Georgian Med News. 2008;(160-161):25-30. [PubMed]
5. „ნარკომანიის ჩანაცვლებითი სპეციალური პროგრამით მკურნალობის განხორციელების შესახებ” Minister of Labour, Health, and Social Affairs of Georgia. Order of Minister of Georgia 01-41/6. 03/07/2014 (AVILABLE HERE AT 31.03.023)
6. 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):314-321. doi:10.1097/ADM.0000000000000500 [PubMed]
7. Chen KW, Berger CC, Forde DP, D'Adamo C, Weintraub E, Gandhi D. Benzodiazepine use and misuse among patients in a methadone program. BMC Psychiatry. 2011;11:90. Published 2011 May 19. doi:10.1186/1471-244X-11-90 [PubMed]
8. Lancia M, Gambelunghe A, Gili A, Bacci M, Aroni K, Gambelunghe C. Pregabalin Abuse in Combination With Other Drugs: Monitoring Among Methadone Patients. Front Psychiatry. 2020;10:1022. Published 2020 Feb 11. doi:10.3389/fpsy.2019.01022 [PubMed]