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## ABSTRACT

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## RECREATIONAL USE OF PREGABALIN IN UKRAINE: AVAILABILITY, PATTERNS OF USE, AND APPLICATION IN CHEMSEX

**Introduction:** Substance use disorders lead to public health and social problems. Reports about the addictive potential of pregabalin appeared immediately after the drug's launch in 2005. Subsequently, the prevalence of pregabalin abuse in countries around the world began to increase.

**Methods:** The inclusion criterion for the study was recreational use of pregabalin at the time of the study or a history of such use. The sample was formed by the snowball sampling method, data collection was conducted through semi-structured interviews, and analysis was performed using the phenomenological method. The Drugs Wheel model was used to classify psychoactive substances.

**Results:** Substance users are not aware of the risks of recreational use of pregabalin. Pregabalin is available for recreational use in Ukraine through over-the-counter pharmacies. Patterns of recreational use of pregabalin in Ukraine are dangerous in terms of mental and physical health disorders and negative socioeconomic consequences. Pregabalin is used as a tool for chemsex, and users neglect harm reduction measures for risky sexual behavior during such contacts. The difficulty of quitting recreational pregabalin use has been documented, and adherence to the existing mental health care system is low.

**Discussion:** Low awareness of the risks of recreational use of pregabalin among substance users creates a need for educational activities among target groups. Given the commitment of doctors to prescribing pregabalin and the lack of warnings about the negative consequences, it is imperative to educate healthcare professionals about the risks of such prescriptions. Since pregabalin is used as a tool for chemsex, and users neglect harm reduction measures for such contacts, it is advisable to provide them with access to harm reduction measures

for risky sexual behavior. Given the difficulty of quitting recreational pregabalin use and the low adherence of substance users to the existing mental health care system, it is recommended to improve this system and introduce harm reduction programs.

**Keywords:** anticonvulsants, pregabalin, chemsex, substance-related disorders, prescription drug abuse, public health, qualitative research, interviews as topic, Ukraine.

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## РЕКРЕАЦІЙНЕ ВЖИВАННЯ ПРЕГАБАЛІНУ В УКРАЇНІ: ДОСТУПНІСТЬ, МОДЕЛІ ВЖИВАННЯ ТА ВИКОРИСТАННЯ В ХІМСЕКСІ

**Вступ:** Розлади психіки та поведінки внаслідок вживання психоактивних речовин призводять до проблем в сфері громадського здоров'я та соціальних проблем. Повідомлення про адиктивний потенціал прегабаліну з'явилися одразу після виходу препарату на ринок у 2005 році. Надалі поширеність зловживання прегабаліном у країнах світу почала зростати.

**Методи:** Критерієм включення в дослідження є рекреаційне вживання прегабаліну на момент дослідження або в анамнезі. Вибірка формувалась методом «снігової кулі», збір даних - методом проведення напівструктурованих інтерв'ю, аналіз – феноменологічним методом. Для класифікації психоактивних речовин використана модель «Drugs Wheel».

**Результати:** Споживачі психоактивних речовин не обізнані про ризики рекреаційного вживання прегабаліну. Прегабалін доступний для рекреаційного вживання в Україні шляхом безрецептурного відпуску з аптек. Моделі рекреаційного вживання прегабаліну в Україні є небезпечними з точки зору розладів психічного та фізичного здоров'я і негативних соціально-економічних наслідків. Прегабалін використовується в якості інструменту для хімсексу, а засобами зменшення шкоди від ризикованої сексуальної поведінки споживачі нехтують під час таких контактів. Зафіксовано складність відмови від рекреаційного вживання прегабаліну, а прихильність до наявної системи охорони психічного здоров'я споживачів низька.

**Обговорення:** Низька обізнаність споживачів психоактивних речовин щодо ризиків рекреаційного вживання прегабаліну створює необхідність проведення просвітницької діяльності серед цільових груп. Враховуючи прихильність лікарів до призначення прегабаліну та відсутність застережень щодо негативних наслідків, вкрай необхідним є проведення просвітницької діяльності серед медиків щодо ризиків такого призначення. Оскільки прегабалін використовується в якості інструменту для хімсексу, а засобами зменшення шкоди при таких контактах споживачі нехтують, доцільно надати їм доступ до заходів із зменшення шкоди від ризикованої сексуальної поведінки. Зважаючи на складність відмови від рекреаційного вживання прегабаліну та низьку прихильність споживачів психоактивних речовин до наявної системи охорони психічного здоров'я рекомендованим є вдосконалення цієї системи та запровадження програм зменшення шкоди.

**Ключові слова:** антиконвульсанти, прегабалін, хімсекс, розлади психіки і поведінки внаслідок вживання психоактивних речовин, лікарська залежність, громадське здоров'я, якісніське дослідження, інтерв'ю, Україна.

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## ABBREVIATIONS

$\alpha$ -PVP –  $\alpha$ -pyrrolidinopentiophenone  
FDA - Food and Drug Administration  
GHB - gamma-hydroxybutyric acid  
HIV - human immunodeficiency viruses

LSA – lysergic acid amide  
LSD – lysergic acid diethylamide  
MDMA - 3,4-methylenedioxymethamphetamine  
PAS - psychoactive substance

## INTRODUCTION

Pregabalin is a gabapentinoid that was approved by the FDA in 2004 for the treatment of a limited range of diseases and entered the top 10 global pharmaceutical sales in 2017. However, this commercial success has not been accompanied by safe, prudent, and cost-effective use [1]. The substance has become widely used in medicine, mainly off-label [2, 3, 4], which was facilitated by the manufacturer's illegal promotion of the drug [5]. According to analysts' forecasts, global sales will continue to grow [6, 7], and in Ukraine in 2025, drugs containing pregabalin were included in the list of the most commonly used drugs [8].

Reports of pregabalin's addictive potential appeared immediately after the drug was launched on the market in 2005 [9], with the first cases of abuse in Europe recorded in 2008 [10], and in 2010, the first disorders associated with pregabalin use were diagnosed [11]. There have also been reports of injecting pregabalin in Europe [12].

The mechanism of action of pregabalin is based on binding to  $\alpha_2\delta$  subunits of voltage-gated calcium channels in the central nervous system, which reduces the  $\text{Ca}^{2+}$  ion flow associated with depolarization in presynaptic neurons and, as a result, the release of excitatory neurotransmitters [13]. However, the manufacturer states that this is not the only mechanism of action, and the exact mechanism remains unknown [14].

Among the clinical and side effects of pregabalin are a number that form the basis for its recreational use, in particular anti-anxiety and hypnotic effects [15, 16], dissociative effects and euphoria [10], psychomotor stimulation [16, 17], increased sociability [18], sexual disinhibition, and increased libido [19]. There have also been reports of visual hallucinations [20] and lucid dreams [21] under the influence of pregabalin, which may be of interest to psychonauts [22].

In addition, pregabalin has found widespread use among consumers of other PAS [23], either as an

alternative to them or as a means of potentiating their effect [16], as well as for eliminating withdrawal symptoms from nicotine [24], alcohol [25, 26, 27], cannabinoids [28], benzodiazepines [29, 30, 31], Z-drugs [32], and opioids [23, 33, 34].

Pregabalin is dispensed from pharmacies by prescription, but there have been reports of requests for the drug to be dispensed without a prescription or with a forged prescription [10, 35]. In Ukraine, such requests have not been recorded in scientific literature, but they have appeared in journalistic investigations [36] and court practice [37].

Acute pregabalin intoxication can lead to a number of complications, including liver damage [38, 39, 40], a number of neurological [41, 42, 43] and mental disorders [44, 45, 46] (including suicidal thoughts and behavior [47, 48]), respiratory depression [49, 50], coma, and death [51, 52, 53], and the number of medical consultations due to pregabalin use is increasing annually [54].

Experimental studies in rats have demonstrated the ability of pregabalin to induce oxidative stress in the central nervous system, leading to neuronal degeneration [55], and have established the similarity of the neurotoxic effect of pregabalin to that of tramadol [56]. In addition, pregabalin abuse leads to reproductive disorders [57, 58, 59], has a teratogenic effect [60, 61, 62], increases cardiovascular risk [63, 64, 65], and the likelihood of injuries and traffic accidents [66, 67].

After cessation of use, withdrawal syndrome develops, which includes psychopathological, vegetative, neurological, and other physical symptoms. Withdrawal syndrome occurs in people of different ages, genders, with and without a history of psychiatric disorders and substance abuse, even after discontinuing two weeks of pregabalin at therapeutic doses [68, 69, 70].

The effects of pregabalin on sexual behavior make it a potential agent for chemsex. Chemsex is associated with an increased risk of transmission of HIV, viral hepatitis, and other sexually transmitted infections [71, 72, 73], as

well as the development of disorders related to PAS use [73, 74], other mental disorders [71, 75], cardiovascular disease [74], negative social consequences [75], and physical and sexual violence [76]. No references to the use of pregabalin as a chemsex tool were found in the scientific literature, although its psychoactive effects correspond to those required for use for this purpose [77, 78].

Doctors offer various treatment strategies for disorders associated with pregabalin use, report successful cases, and emphasize the importance of early intervention [68, 79, 80]. Countries around the world are also paying attention to the problem of chemsex, noting the need to develop effective interventions to reduce harm [81, 82, 83].

Given the above, recreational use of pregabalin poses a public health problem, exacerbates the burden of infectious and non-infectious diseases, and requires more detailed study in Ukraine, the development of effective interventions aimed at preventing such use, harm

reduction, and treatment of disorders resulting from pregabalin use, which is the purpose of this study.

## MATERIALS AND METHODS

The inclusion criterion was recreational use of pregabalin at the time of the study or in the past. The sample was formed using the snowball method, and data was collected using semi-structured interviews with the help of a developed guide until saturation point was reached. The interviews were conducted in a separate room without access to third parties, face-to-face with the respondents. Data analysis was performed using the phenomenological method. The British "Drugs Wheel" model was used to classify PAS [84].

## RESULTS

1. The demographic characteristics of respondents are presented in Table 1, while the profile of PAS use is presented in Figure 1 and in more detail by respondent in Table 2. One of the respondents reported that pregabalin was the first PAS (other than alcohol and tobacco) she had used in her life (at the age of 15).

Table 1. Demographic characteristics of respondents

ID	Sex	Age	Education	Employment
1	M	25	Post-secondary non-tertiary	Unemployed
2	M	21	Complete general secondary education	Bachelor student
3	M	23	Master	Unemployed
4	M	24	Bachelor	Unemployed
5	M	27	Bachelor	Unemployed
6	F	20	Post-secondary non-tertiary	Bachelor student
7	F	18	Lower secondary	Vocational student
8	M	35	Bachelor	War veteran
9	F	25	Bachelor	Unemployed
10	F	20	Lower secondary	Vocational student

2. Respondents reported the popularity of recreational use of pregabalin in society and an increase in the amount of entertainment content on social media dedicated to recreational use of pregabalin.
3. Most respondents were unaware of the risks of recreational use of pregabalin at the time of their first intake. Some respondents had certain reservations, but after the first intake, they formed an opinion about the safety of the substance.
4. All respondents have experience purchasing pregabalin without a prescription at regular city pharmacies. Some respondents were prescribed pregabalin by a psychiatrist for off-label medical purposes (two for panic disorder, one for alcohol abstinence) and were given a paper prescription. One respondent noted that she also received a paper prescription from a psychiatrist, but for recreational purposes by agreement.
5. The patterns of recreational use of pregabalin by respondents are shown in Table 3. All respondents have experience of combining pregabalin with other PAS; the data are presented in Figure 2 and in more detail by respondent in Table 4.
6. All respondents had sexual intercourse while under the influence of pregabalin and reported subjectively positive effects on sexual behavior, as shown in Figure 3. As a result of these effects, respondents reported an increase in the number of sexual partners, casual sexual encounters, and new sexual experiences, as well as a disregard for measures to reduce the harm from risky sexual behavior during such encounters.



Figure 1. Profile of recreational use of psychoactive substances by respondents

Two respondents reported using pregabalin as a chemsex tool, namely deliberately taking pregabalin before anticipated sexual contact in order to achieve the effects of pregabalin on sexual behavior.

1. Respondents reported negative effects after both single doses of pregabalin and systematic use. These effects are shown in more detail in Figure 4. When pregabalin was combined with other PAS, respondents reported acute psychotic symptoms and emergency conditions, with one respondent reporting two visits to the emergency department for this reason.

Respondents reported negative effects after discontinuing daily use of pregabalin, whereas they did not notice these effects before starting pregabalin, after occasional single doses, or during systematic use. The effects identified correspond to the symptoms of pregabalin withdrawal syndrome [70]. Table 5 provides a detailed profile of pregabalin use prior to the onset of withdrawal syndrome in respondents, and Figure 5 schematically shows the manifestations of withdrawal syndrome.

Respondents also reported negative effects on their main occupation (work/study), relationships with people, personality changes, and material losses. One respondent reported committing theft in order to obtain funds to purchase pregabalin.

2. All respondents reported attempts to quit recreational use of pregabalin, but none of them succeeded.

One of the respondents sought help from a private rehabilitation center, but was dissatisfied with the treatment she received. The respondent stayed at the center for seven months and reported a lack of specialized care at the center, psychological and physical abuse, and after returning from the center, the respondent resumed using pregabalin.

The rest of the respondents did not seek specialized help, citing distrust of psychiatrists, stigmatization, lack of necessary assistance, and negative experiences of their acquaintances who sought help as reasons.

3. Respondents reported similarities between the psychoactive effects and withdrawal symptoms of pregabalin and those of opioids.

## DISCUSSION

The popularity, recreational content, and low awareness of the risks of recreational use of pregabalin create a need for educational activities among target groups, given the perception of prescription drugs as safer than “street” drugs, which further contributes to their abuse [85]. Researchers in countries around the world with a similar situation of low awareness of the risks of recreational use of pregabalin recognize educational work as one of the most recommended preventive measures [86, 87].

Table 2. Profile of recreational use of psychoactive substances (except pregabalin) by respondents

Cannabinoids	Psychostimulants	Empathogens	Psychedelics	Dissociatives	Depressants	Opioids	Others
Systematically (marijuana)	Systematically (nicotine) Episodically (α-PVP, amphetamine, ephedrine)	Episodically (MDMA)	Episodically (25I-NBOMe)	-	Systematically (alcohol) Episodically (alprazolam, hydazepam, clonazepam, phenazepam, phenobarbital)	Episodically (tramadol)	Episodically (glaucine)
Systematically (marijuana) Episodically (synthetic cannabinoids)	Systematically (nicotine)	-	-	-	Systematically (alcohol)	Systematically (kratom)	-
Systematically (marijuana)	Systematically (nicotine) Episodically (α-PVP, amphetamine, ephedrine)	Episodically (mephedrone)	Episodically (LSD)	-	Systematically (alcohol) Episodically (alprazolam, hydroxyzine)	Episodically (buprenorphine, codeine, methadone, tramadol)	Episodically (glaucine, dicyclomine, fly agaric)
Systematically (marijuana)	Systematically (nicotine) Episodically (amphetamine, ephedrine)	Episodically (MDMA)	Episodically (LSD, psilocybin)	-	Systematically (alcohol)	-	Episodically (glaucine)
Systematically (marijuana)	Systematically (amphetamine, nicotine)	Systematically (mephedrone) Episodically (MDMA)	Episodically (LSD)	-	Systematically (alcohol) Episodically (alprazolam)	-	-
Systematically (marijuana)	Systematically (amphetamine, cocaine, nicotine) Episodically (ephedrine)	Episodically (MDMA)	Episodically (LSD, psilocybin)	-	Systematically (alcohol)	-	Episodically (glaucine)

<b>Cannabinoids</b>	<b>Psychostimulants</b>	<b>Empathogens</b>	<b>Psychedelics</b>	<b>Dissociatives</b>	<b>Depressants</b>	<b>Opioids</b>	<b>Others</b>
Episodically (marijuana)	Systematically (nicotine) Episodically (ephedrine)	Episodically (mephedrone)	-	-	Episodically (alcohol)	Episodically (tramadol)	Episodically (glauaine, dicyclomine)
Systematically (marijuana) Episodically (synthetic cannabinoids)	Systematically (amphetamine, nicotine)	-	Episodically (LSA, LSD, salvinorin)	Episodically (dextromethorphan)	Systematically (alcohol, hydazepam, diazepam, clonazepam, phenazepam) Episodically (chlorpheniramine)	Episodically (codeine)	-
Episodically (marijuana)	Systematically (amphetamine, nicotine) Episodically (cocaine)	Systematically (MDMA) Episodically (mephedrone)	Episodically (LSD)	Episodically (ketamine)	Systematically (alcohol) Episodically (alprazolam)	-	-
Systematically (marijuana)	Systematically (amphetamine, nicotine) Episodically ( $\alpha$ -PVP, ephedrine, methamphe-tamine, pseudoephedrine)	Systematically (mephedrone – injection) Episodically (MDMA)	Systematically (LSD) Episodically (25I-NBOMe, DOB)	-	Systematically (alprazolam, hydazepam, clonazepam, phenazepam) Episodically (GHB, alcohol, hydroxyzine, dimenhydrinate, etifoxine, phenobarbital)	Systematically (methadone – injection) Episodically (buprenorphine, codeine)	Episodically (glauaine, dicyclomine)

Table 3. Patterns of recreational use of pregabalin by respondents

Daily dose for first intake, mg	Maximum single dose, mg	Maximum daily dose, mg	Maximum duration of daily intake, days
150	900	2100	21
300	900	2100	56
600	1200	3000	112
300	1200	2100	5
300	300	1500	7
750	900	2400	7
600	900	1500	7
150	1200	1800	70
300	1200	3000	9
600	6000	9000	28

Table 4. Combination of pregabalin with other psychoactive substances

Cannabinoids	Psychostimulants	Empathogens	Psychedelics	Dissociatives	Depressants	Opioids	Others
Marijuana	Nicotine	-	-	-	Alcohol	-	-
Marijuana	Nicotine	-	-	-	Alcohol	Kratom	-
Marijuana	Amphetamine, ephedrine, nicotine	-	-	-	Alcohol, alprazolam, hydroxyzine	Codeine, tramadol	Glaucine, dicyclomine
Marijuana	Amphetamine, ephedrine, caffeine, nicotine	-	-	-	Alcohol	-	Glaucine
Marijuana	Nicotine	-	-	-	Alcohol	-	-
-	Ephedrine, nicotine	-	-	-	Alcohol	-	Glaucine
-	Ephedrine, caffeine, nicotine	-	-	-	Alcohol	Tramadol	Glaucine, dicyclomine
-	Caffeine, nicotine	-	-	-	Alcohol, hydazepam	-	-
-	Amphetamine, nicotine	-	-	-	Alcohol	-	-
Marijuana	Nicotine	MDMA	-	-	-	Codeine, methadone	Glaucine

Table 5. Profile of pregabalin use before the onset of withdrawal syndrome

Duration of daily intake, days	Daily dose on the first day of daily intake, mg	Average daily dose, mg	Daily dose on the last day of daily intake, mg
21	300	900	600
14	300	600	600
56	300	600	600
4	900	900	900
7	300	600	300
70	150	900	900
4	750	750	750
5	600	900	3000

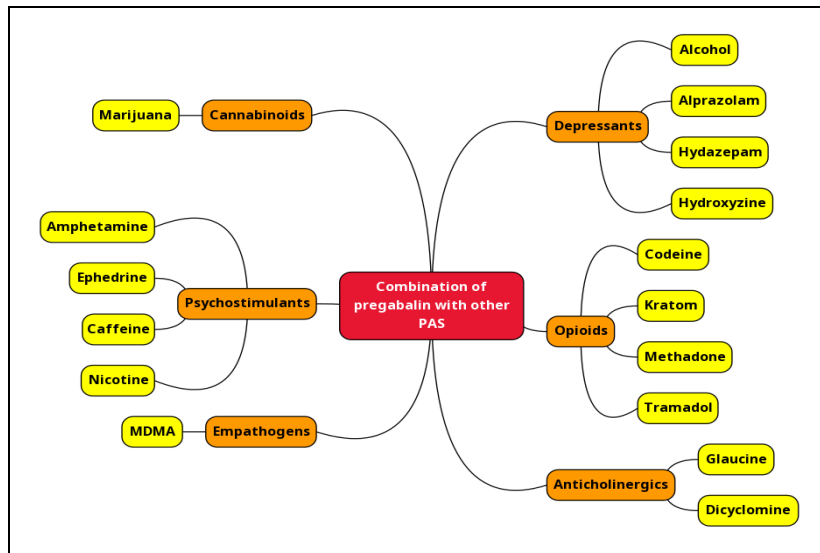


Figure 2. Combination of pregabalin with other psychoactive substances by respondents

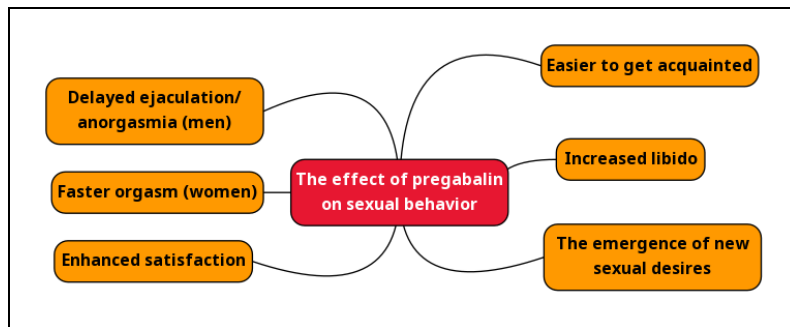


Figure 3. Effects of pregabalin on sexual behavior

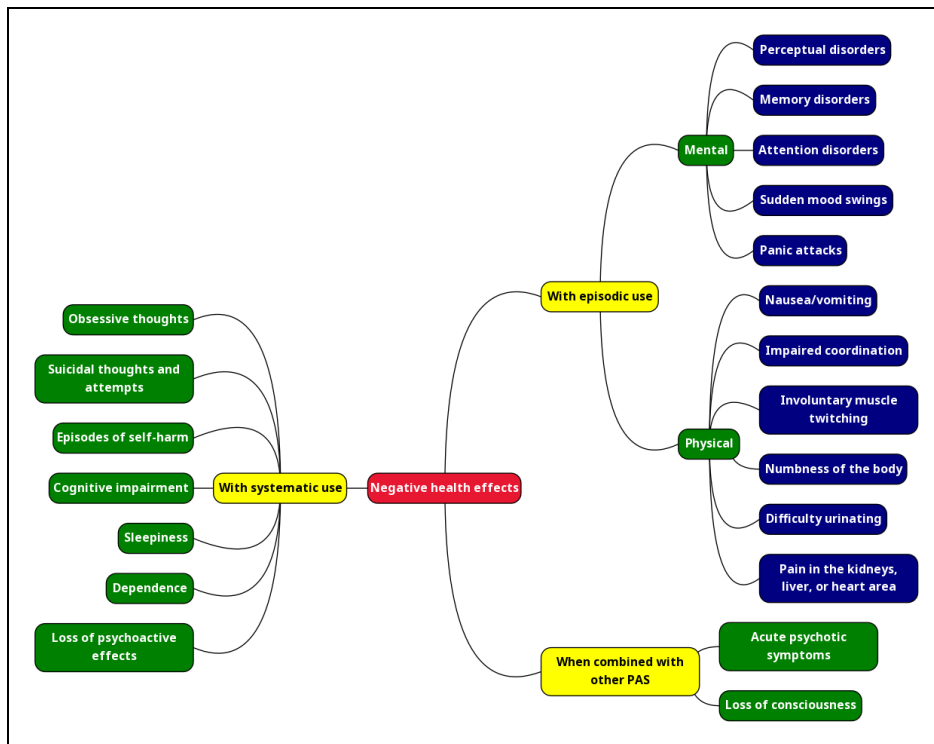


Figure 4. Negative health effects of recreational pregabalin use

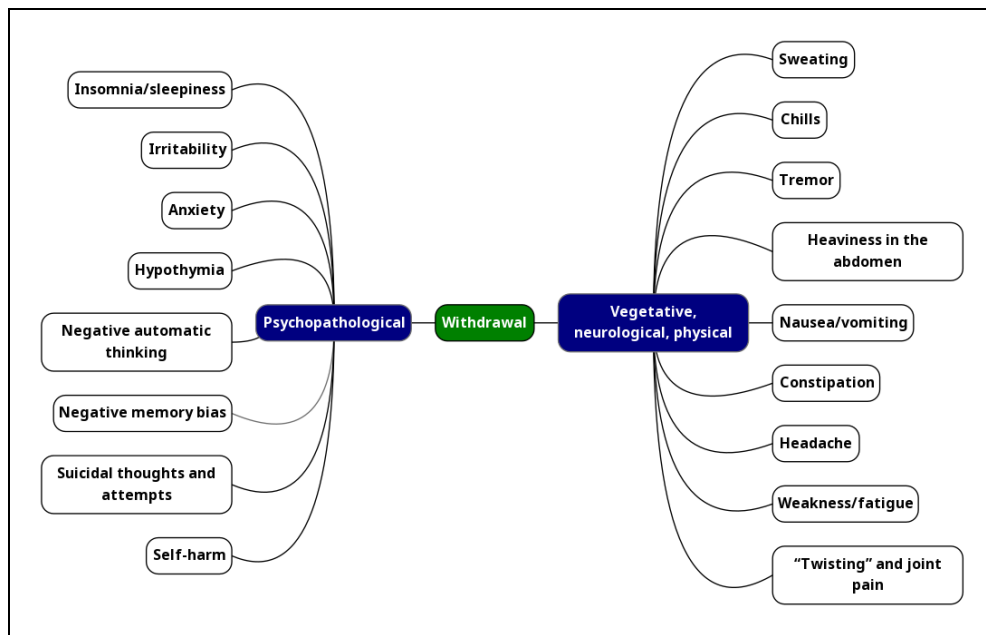


Figure 5. Manifestations of withdrawal syndrome after discontinuation of pregabalin use

In addition, pregabalin has become popular among doctors worldwide, mainly for off-label use [2, 3, 88]. Respondents also reported being prescribed pregabalin off-label, and their history of abuse of other PAS is a relative contraindication for such a prescription. One respondent noted that among her circle of acquaintances, many pregabalin users began taking it for medical purposes as prescribed by a doctor, but then switched to recreational systematic use. The relevance of the medical use of pregabalin is increasing significantly against the backdrop of hostilities and the growing number of patients with combat trauma. One respondent, who also has combat experience and a history of combat trauma, reported on the popularity of pregabalin abuse among military personnel and veterans after undergoing treatment and rehabilitation for combat injuries.

In the Ukrainian medical information space, dependence on pregabalin is considered a “myth,” noting the possibility of unlimited duration of safe use and the absence of interaction with other drugs [89]. However, a number of scientific studies prove that pregabalin causes dependence [68, 90, 91], and its combination with other drugs can be dangerous [4, 52, 87]. It is also commonly believed that dependence on pregabalin occurs exclusively in people with a history of abuse of other PAS [92], but the literature describes cases of such dependence in people with no history of PAS use or psychiatric history [70]. One respondent reported that pregabalin was the first PAS she tried after alcohol, even though she did not abuse alcohol and reported no psychopathological symptoms prior to starting pregabalin.

Given the propensity of physicians to prescribe pregabalin, the absence of warnings about adverse effects, and the growing number of patients who could potentially be prescribed pregabalin, it is necessary to conduct educational activities among the medical community regarding the risks of prescribing pregabalin, as emphasized by foreign colleagues [69, 93, 94].

Pregabalin is available for recreational use in Ukraine through over-the-counter sales, including to minors, from regular pharmacies in Ukrainian cities, as reported by all respondents. This situation with the dispensing of pregabalin is observed in a number of countries around the world [10, 16, 35], and pharmacists report that the sale of prescription drugs without a prescription is extremely important for pharmacy profits [95].

In Ukraine, the situation with the abuse of psychotropic drugs has been tense since Soviet times, and to this day the situation remains unchanged, with only the drugs themselves changing. In the 2000s, the situation with tramadol abuse gained publicity in Ukraine. Tramadol was positioned as safe and non-addictive [96, 97] and was actively promoted by the medical community. Tramadol abuse was initially characteristic of consumers of other PAS as an alternative, but then more and more PAS consumers began their path of use with tramadol [98]. Given these data, the situation with recreational use of pregabalin in Ukraine today resembles the situation with tramadol at the beginning of the epidemic of its abuse. Researchers at Oxford University have also noted the similarity between the current abuse of gabapentinoids and the abuse of opioids in the 1990s, emphasizing the importance of a more responsible

approach to this problem in order to avoid the mistakes made in the 1990s with opioids [99].

The question of the advisability of restricting the circulation of pregabalin remains open, since the experience of the “tramadol epidemic” showed that restrictions on the circulation of tramadol led to an increase in the prevalence of injecting synthetic opioids in Ukraine as a substitute for it [100]. At the end of 2024, the Minister of Health of Ukraine reported an alarming situation with the abuse of nalbuphine, of which 3 million packages were sold in 2024 with only 6,000 prescriptions written [101]; a similar situation occurred with tramadol in the 2000s [102]. No data on the dispensing of pregabalin in Ukraine could be found, but in 2025, drugs with pregabalin as the active ingredient were included in the list of the 100 most commonly used drugs in Ukraine [8], which indicates their significant dispensing from pharmacies, and the announced reduction in prices for drugs containing pregabalin only increases its availability to the population. Australia, the United Kingdom, and Canada have experienced an increase in the use of pregabalin after price reductions [4], so such a move by Ukraine could exacerbate this problem.

The data obtained on patterns of recreational use of pregabalin show that they are dangerous in terms of the development of mental and physical health disorders and negative socio-economic consequences. One respondent's report of committing theft to obtain funds to purchase pregabalin is noteworthy. Researchers around the world note that the abuse of prescription drugs leads to an increase in crime, primarily through illegal trafficking, theft, and fraud, while recreational use of antiepileptic drugs, including pregabalin, is a particularly significant predictor of drug-related crime [85, 103].

The use of pregabalin as a tool for chemsex and the neglect of measures to reduce the harm from risky sexual behavior during such contacts increase the risk of transmission of HIV, viral hepatitis, and other sexually transmitted infections [71, 72, 73], the development of mental [72, 74, 75] and physical health disorders [75]. In view of this, it is advisable to involve pregabalin users in measures and programs to reduce the harm from risky sexual behavior, counteract the spread of HIV infection, and chemsex in general.

Given the difficulty of quitting recreational pregabalin use and the low adherence of pregabalin users to the

existing mental health care system and the reasons for this, it is recommended to create conditions for free and anonymous treatment, strengthening measures to combat stigmatization, and developing and implementing protocols for the treatment of disorders associated with pregabalin use, based on the existing experience of countries around the world [11, 104]. The effectiveness of harm reduction programs for the prevention of disorders resulting from PAS use is noteworthy. The experience of France with the use of ASPIRE standards [105] is indicative, as is that of Portugal, where, at the height of the opioid epidemic, PAS possession was decriminalized and a harm reduction policy was introduced. After that, the country saw a sharp decline in substance use and addiction, HIV infection, overdose deaths, crime, and stigma associated with substance use [106].

### CONCLUSIONS

Pregabalin is popular among PAS consumers, but awareness of the risks associated with its use is low. Respondents had the impression that the substance was safe, which led to a number of negative consequences.

Pregabalin is available for recreational use in Ukraine, including by minors. Respondents noted the possibility of purchasing pregabalin without a prescription at regular pharmacies and, if necessary, obtaining a prescription without any medical indications for its use.

Recreational use of pregabalin in Ukraine is dangerous in terms of the development of mental and physical health disorders and negative socioeconomic consequences.

Pregabalin is used as a tool for chemsex by both women and men, and respondents neglected to use harm reduction measures during such contacts, although they had previously used them predominantly. Such data indicate an increased risk of the emergence and/or spread of a number of infectious and non-infectious diseases.

Respondents reported difficulties in giving up recreational use of pregabalin, as well as low levels of adherence to the existing mental health care system. Among the reasons, respondents cited distrust of psychiatrists, lack of necessary medical and psychological assistance, stigmatization of mental disorders and substance use, and negative experiences seeking such assistance.

### PROSPECTS FOR FUTURE RESEARCH

The scale of this problem in Ukraine remains unknown, and data collection on pregabalin abuse is not included in the National Monitoring of the Drug and Alcohol Situation in Ukraine, although such monitoring is key to preventing uncontrolled

dispensing and related deaths from overdose [107]. In view of this, it is advisable to make appropriate amendments to the Resolution of the Cabinet of Ministers of Ukraine No. 689 of 10 July 2019 “Issues of monitoring the drug and alcohol situation in

Ukraine” and to initiate scientific research on the recreational use of pregabalin using quantitative methods.

None of the respondents refused recreational use of pregabalin, although everyone had tried to do so, including seeking specialized help. It is noteworthy that respondents reported similarities between the psychoactive effects and withdrawal syndrome of pregabalin and those of opioids. Since the exact mechanism of action of pregabalin remains unknown [14], the neurotoxic effects of pregabalin are similar to those of tramadol [56], pregabalin can relieve opioid

withdrawal syndrome [23, 33, 34] and induce respiratory depression [49, 50]. Pregabalin withdrawal syndrome includes a physical component [70], and the phenomenon of pregabalin abuse today resembles the situation with opioid abuse at the beginning of the epidemic, both in Ukraine and worldwide [99]. There is a need for a more detailed study of the pharmacodynamics of pregabalin and the pathogenesis of mental and behavioral disorders resulting from its use in order to develop strategies for the prevention and treatment of such disorders.

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Mykyta Lapin: research concept and design, data collection and analysis, interpretation of results.

Maryna Shevchenko: critical review; final approval of the article.

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## CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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The authors confirm that no artificial intelligence-based technologies were used in the writing and editing of this article.

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