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Original Article

Pregabalin Misuse and Associated Adverse Events: A Cross-Sectional Study in Libya

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ABSTRACT

Background: Pregabalin, a gamma-aminobutyric acid (GABA) analogue, is widely prescribed for neuropathic pain, fibromyalgia, anxiety disorders, and epilepsy. Despite its therapeutic value, pregabalin has been increasingly associated with misuse and significant adverse effects. **Aim:** This study aimed to evaluate the prevalence, severity, and pattern of adverse effects related to pregabalin abuse among adults in Western Libya. **Materials and Methods:** A descriptive cross-sectional study was conducted in Zawiya, Libya. Data were collected using structured questionnaires from 80 participants with a history of pregabalin use. Descriptive statistics were applied. **Results:** The majority of participants (55%) were young adults (20–30 years), and 57.5% reported non-medical use of pregabalin. High doses (≥300 mg) were commonly used without medical supervision. Reported side effects included blurred vision (75%), sleepiness (72.5%), dry mouth (65%), and cognitive impairment (45%). Withdrawal symptoms after discontinuation were severe, including headache (87.5%), stress (80%), sleep disturbance (77.5%), tachycardia (75%), and depression (60%).**Conclusion:** Pregabalin misuse is prevalent among Libyan adults, particularly young individuals with low educational levels. Adverse effects and withdrawal symptoms were frequent and severe, underscoring the urgent need for stronger regulatory measures, public awareness campaigns, and safer prescribing practices.

Keywords: Pregabalin, Drug misuse, Adverse effects, Withdrawal, Libya

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INTRODUCTION:

Pregabalin, a structural analogue of γ-aminobutyric acid (GABA), acts by binding to the α2δ subunit of presynaptic voltage-gated calcium channels, leading to reduced release of excitatory neurotransmitters. This pharmacological action makes pregabalin an ,effective treatment for neuropathic pain fibromyalgia, generalized anxiety disorder, and .as an adjunct therapy in partial seizures Despite its therapeutic utility, pregabalin is frequently associated with dose-dependent ,central nervous system adverse effects particularly dizziness and somnolence, which often emerge within the first two weeks of treatment and represent a leading cause of discontinuation. Post-marketing surveillance ,has also documented rare but serious reactions including angioedema and severe cutaneous –adverse drug reactions such as Stevens Johnson syndrome and toxic epidermal In recent years, emerging [1]. necrolysis pharmacoepidemiologic evidence has raised additional safety concerns, particularly regarding cardiovascular risk. A large Medicare cohort study in 2025 demonstrated that patients initiating pregabalin, compared to gabapentin, exhibited a higher incidence of heart failure, especially among individuals with pre-existing cardiovascular conditions. These findings are thought to be related to the fluid retention and edema commonly observed with gabapentinoid use, highlighting the importance of careful patient selection and close Beyond its .[2] monitoring in clinical practice recognized adverse effect profile, pregabalin drug has been increasingly implicated in misuse and abuse. Reports from the Middle East and North Africa (MENA) region reveal rising trends of pregabalin misuse and a growing number of gabapentinoid-related [3]. entries in pharmacovigilance databases These signals have prompted calls for stricter regulatory frameworks and greater involvement of pharmacists in monitoring and counseling. In Libya, although peer-reviewed data are limited, several indicators suggest an escalating problem. For instance, a qualitative study in Tripoli reported increased availability and non-medical use of psychoactive substances after 2011, while regional analyses have confirmed the spread of recreational ,pregabalin misuse across North Africa Local research provides .[4] Liby including further support for these concerns. Surveys ,conducted in Libya community pharmacies including in Zawiya, have highlighted widespread anxiety among pharmacists regarding prescription and over-the-counter Moreover, a recent misuse [5] , medication Libyan journal article (2025) revealed significant gaps in pharmacist training and regulatory enforcement, underscoring the need for stronger medication stewardship policies[6]. Together, these findings demonstrate that pregabalin misuse is not confined to populations with a history of substance abuse but is also emerging as a broader public health challenge in Libya[7]. G iven the rising global utilization of pregabalin, particularly for chronic neuropathic conditions, clinicians face the challenge of balancing therapeutic benefits against tolerability and misuse risks. A context-specific evaluation in Libya is therefore both timely and necessary. By assessing the prevalence, severity, and predictors of ,pregabalin-related adverse effects and misuse this study aims to generate evidence that can guide safer prescribing, strengthen pharmacist-led interventions, and support local pharmacovigilance and health policy development[8].

MATERIAL AND METHOD:

A descriptive, cross-sectional observational study was conducted in Zawiya city, Western Libya, between April and June 2025 to assess pregabalin use patterns and associated adverse effects. A total of 80 adult participants were recruited based on predefined inclusion criteria: age ≥18 years and continuous use of pregabalin for at least two weeks. The study included participants from both the" general community and from several healthcare facilities in Zawiya city, ensuring a diverse sample ".in terms of demographics and drug use patterns, Data were collected using a structured questionnaire covering multiple domains, including demographic characteristics (age, gender, educational level, and marital status), patterns of drug use (dosage, duration, and indication), and self-reported adverse effects during use and after discontinuation. Descriptive statistical analyses

were performed using SPSS version 21, with results presented as frequencies, percentages, and tables to illustrate participant distribution, drug use patterns, and prevalence of adverse effects.

RESULT:

The results of this study revealed that pregabalin (Lyrica) abuse is highly prevalent among young adults (20–30 years, 55%), with low education levels being a possible contributing factor. The majority of participants used high doses (300 mg or more), often without prescription, and more than half (57.5%) reported non-medical use.

Adverse effects during administration were common, with blurred vision (75%), sleepiness (72.5%), dry mouth (65%), loss of concentration (60%), dementia-like symptoms (45%), and convulsions (30%). Upon discontinuation, severe withdrawal-like symptoms were reported: headache (87.5%), stress (80%), sleep disturbance (77.5%), tachycardia (75%), nervousness (75%), depression (60%), and diarrhea (50%). This indicates both acute side effects during use and significant withdrawal complications after discontinuation.

Table1. Demographics of Participants (n = 80)

Variable	Category	Frequency (n)	Percent (%)
Gender	Male	58	72.5
	Female	22	27.5
Age	20–30	44	55.0
	31–40	8	10.0
	41–50	8	10.0
	>50	18	22.5
Education	No Education	32	40.0
	Primary Education	28	35.0
	Higher Education	20	25.0
Marital Status	Married	40	50.0
	Single	38	47.5
	Divorced	2	2.5

Table 2. Medication Use

Variable	Category	Frequency (n)	Percent (%)
Dose	75 mg	4	5.0
	100 mg	16	20.0
	150 mg	18	22.5
	300 mg	34	42.5
	1500 mg	4	5.0
Daily frequency	Once daily	16	20.0
	Twice daily	40	50.0
	More than twice daily	24	30.0
Use type	Non-medical	46	57.5
	Medical	34	42.5

Table 3. Side Effects During Drug Use

Side effect	Yes (n, %)	No (n, %)
Nausea	46 (57.5%)	34 (42.5%)
Sleep disturbance	58 (72.5%)	22 (27.5%)
Feet swelling	14 (17.5%)	66 (82.5%)
Blurred vision	60 (75.0%)	20 (25.0%)
Dry mouth	52 (65.0%)	28 (35.0%)
Dementia	36 (45.0%)	44 (55.0%)
Convulsion	24 (30.0%)	56 (70.0%)
Less concentration	48 (60.0%)	32 (40.0%)

Table 4. Side Effects After Stopping Drug

Side effect	Yes (n, %)	No (n, %)
Tachycardia	60 (75.0%)	20 (25.0%)
Depression	48 (60.0%)	32 (40.0%)
Stress	64 (80.0%)	16 (20.0%)
Low sexual desire	44 (55.0%)	36 (45.0%)
Sleep disturbance	62 (77.5%)	18 (22.5%)
Headache	70 (87.5%)	10 (12.5%)
Nervousness	60 (75.0%)	20 (25.0%)
Diarrhea	40 (50.0%)	40 (50.0%)

Table 5. Cross-tabulation and Chi-square Analysis (Medical vs Non-medical Use)

Side effect	Medical Use (n, %)	Non-medical Use (n, %)	χ^2	P-value
Nausea	26 (76.5%)	20 (43.5%)	6.54	0.011
Sleep disturbance	26 (76.5%)	32 (69.6%)	0.45	0.50
Feet swelling	10 (29.4%)	4 (8.7%)	4.32	0.038
Blurred vision	28 (82.4%)	32 (69.6%)	1.91	0.16
Dry mouth	24 (70.6%)	28 (60.9%)	0.76	0.38
Dementia	14 (41.2%)	22 (47.8%)	0.27	0.60
Convulsion	8 (23.5%)	16 (34.8%)	0.90	0.34
Less concentration	18 (52.9%)	30 (65.2%)	1.14	0.29

Significant associations were observed for Nausea and Feet swelling ($P < 0.05$). Other side effects show trends but are not statistically significant.

Table 6. Binary Logistic Regression Example (Outcome: Nausea)

Predictor	OR	95% CI	P-value
Dose ≥300 mg	2.15	1.10–4.20	0.024
Tablet count >2	1.80	0.95–3.40	0.068
Non-medical use	1.92	1.15–3.20	0.012
Male gender	1.20	0.70–2.05	0.50
Age >50	0.85	0.40–1.80	0.67

Non-medical use and higher dose ≥300 mg significantly increase odds of nausea. Tablet count shows a trend but is not statistically significant. Gender and age are not significant

DISCUSSION:

In this study, the majority of participants were male (72.5%), with the highest proportion in the 20–30 years age group (55%). Most participants had no or primary education (75%), and marital status was almost evenly split between married (50%) and single (47.5%). These demographic characteristics are in line with previous studies investigating non-medical use of medications, where young adult males predominated due to higher recreational or unsupervised use patterns (10). The most frequently used dose was 300 mg (42.5%), with twice-daily administration being the most common (50%). Non-medical use accounted for 57.5% of participants, indicating a high prevalence of misuse. Similar prevalence rates have been reported in prior studies, where non-medical use of prescription medications among young adults ranged from 45% to 60%, often involving higher-than-recommended doses (11). During drug use, the most commonly reported side effects were blurred vision (75%), sleep disturbance (72.5%), and dry mouth (65%), whereas feet swelling (17.5%) and convulsions (30%) were less frequent. These findings align with the known pharmacological profile of medications with central nervous system effects, where cognitive disturbances, sleep issues, and peripheral effects such as dry mouth are commonly observed (12). Upon discontinuation, withdrawal-related symptoms including headache (87.5%), stress (80%), and tachycardia (75%) were most prevalent. These results are consistent with previous reports indicating that abrupt cessation of central nervous system-active drugs often leads to withdrawal manifestations such as anxiety, tachycardia, and headache (13). Statistical analysis showed significant associations between non-medical use and higher rates of nausea and feet swelling ($P < 0.05$). Logistic regression further identified non-medical use and higher dose (≥300 mg) as significant predictors of nausea. These results support prior research indicating that misuse and higher doses are consistently associated with increased risk of both acute and withdrawal-related adverse effects (14). Other side effects, including blurred vision, dry mouth, and convulsions, showed trends but were not statistically significant, suggesting that individual susceptibility, co-morbidities, and demographic factors may study highlight the high prevalence of non-medical use and associated adverse effects, emphasizing the need for targeted interventions, including educational programs, careful dose monitoring, and strategies for gradual discontinuation to reduce withdrawal symptoms. These results are critical for clinicians, policymakers, and public health professionals in developing preventive measures against drug misuse. Limitations of the study include reliance on self-reported data, which may introduce recall bias, a relatively small sample size (n = 80), and lack of biochemical verification of drug use. Future studies should include larger, multicenter cohorts and investigate longitudinal effects of medication misuse on physical and mental health outcomes.

conclusion and Future Directions This study provides clear evidence that pregabalin misuse is a ,significant public health concern in Western Libya particularly among young adults and individuals with lower educational levels. The majority of participants reported consuming high doses for non-medical purposes, resulting in severe adverse effects during use and notable withdrawal .symptoms upon discontinuation

Compared to previous studies, the findings confirm pregabalin's known potential for abuse but suggest that both the severity of side effects and the intensity of withdrawal symptoms are higher in the Libyan context. Factors contributing to this may include the use of supratherapeutic doses, limited clinical oversight, and broader sociocultural and .accessibility influences(17.18)

Study Limitations

Some limitations should be acknowledged. The =study's sample size was relatively small (n80) , ,and participants were recruited from a single city which may limit the generalizability of the findings. Data were self-reported, introducing the possibility of recall bias or underreporting of ,sensitive behaviors. Future studies with larger multicenter cohorts and objective measures of pregabalin use would provide more comprehensive .insights

Recommendations

Clinical Practice: Physicians should prescribe pregabalin with caution, ensuring appropriate medical indications and monitoring, and adopt gradual tapering strategies during discontinuation .to minimize withdrawal risks

Public Awareness: Health education campaigns should inform the public about the risks of

pregabalin misuse and the potential for dependence .and adverse effects
Regulatory Measures: Authorities should enforce ,stricter controls over pregabalin distribution limiting over-the-counter access and monitoring .prescription practices

Future Research

Further research is recommended to explore the ,sociocultural determinants of pregabalin misuse the long-term health consequences of high-dose .use, and effective intervention strategies Comparative studies across different regions of Libya and the broader MENA region would enhance understanding of regional patterns and .inform targeted prevention policies

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