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Pharmacist's readiness to manage risks of drug-related problems associated with escitalopram therapy (according to survey data)

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Abstract: *the global consumption of psychotropic medications has been increasing significantly, and in Ukraine, this trend has been especially exacerbated by the full-scale war. Escitalopram, a selective serotonin reuptake inhibitor, is widely used in the treatment of anxiety and depressive disorders. Its use is associated with a risk of drug-related problems, including adverse drug reactions and drug–drug interactions, particularly among vulnerable populations. The objective of this study was to assess the readiness of pharmacists to manage drug-related risks associated with the use of escitalopram. Given the high prescribing rates and the prevalence of adverse reactions–especially under conditions of polypharmacy and comorbidity–ensuring adequate pharmaceutical care during the dispensing of this prescription medication is critical. We conducted a survey using an online questionnaire distributed via the Google Forms platform. The study involved 103 pharmaceutical professionals from various pharmacy institutions across Ukraine, between February and April 2025. The questionnaire collected data on professional experience, knowledge of drug-related adverse effects and interactions, as well as current counseling practices. Most respondents (68%) were pharmacists with 1 to 5 years of experience. According to the results, nearly half of the pharmacists (48.5%) reported that they do not counsel patients at all regarding the risks associated with escitalopram use. Only 6.8% of respondents rated their awareness of potential adverse effects as high, while the majority considered it low or moderate. A considerable proportion (70%) lacked suficient knowledge of drug interactions related to escitalopram, and approximately one-third were unaware of the risk of QT interval prolongation. Search engines were found to be the primary source of information for pharmacy staff (52.4%), while the use of professional scientific databases, such as PubMed, remains limited (17.5%). At the same time, all respondents indicated a need for further training. The findings of the study emphasize the importance of implementing structured, targeted educational programs for pharmacists that address the current challenges of pharmacotherapy, as well as integrating evidence-based digital tools. Such an approach may contribute to enhancing the awareness and preparedness of pharmacy professionals and strengthening their role in the prevention of drug-related problems associated with psychotropic medications, particularly in the use of escitalopram in patients with comorbid conditions requiring treatment for anxiety and depressive disorders. The article also outlines a pharmacist's action algorithm when dispensing the medication, including risk assessment, patient counseling, pharmacovigilance, and the application of innovative tools.*

Key words: Antidepressive Agents; Anxiety; Depressive Disorder; Drug Interactions; Drug Use Error; Pharmaceutical Services.

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Introduction

Global sales of psychotropic drugs increased from 28.54 DDD per 1000 inhabitants per day in 2008 to 34.77 in 2019, corresponding to a relative average annual growth of 4.08% (95% CI 2.96–5.21). According to the Ministry of Health, due to the full-scale war in Ukraine, approximately 15 million people will require psychiatric care, of whom 3–4 million will need medical intervention. This explains the significant increase in sales of anxiolytics, primarily benzodiazepines. However, only 2% of patients consult a doctor about this, while most seek help from pharmacists in pharmacies. This highlights the pharmacist's role in ensuring effective and safe treatment for patients with anxiety and depressive disorders.

Although benzodiazepines can provide rapid relief of severe anxiety symptoms, their use is associated with significant risks, including dependence, withdrawal syndrome, cognitive impairment, and the potential for abuse. Therefore, they have not been considered as a primary or long-term treatment option for anxiety disorders for a long time. For ongoing management, safer alternatives such as selective serotonin reuptake inhibitors (SSRIs) are generally preferred. Escitalopram is the leading antidepressant in terms of sales in Ukraine. It is considered the most effective first-line antidepressant for treating anxiety and depressive disorders. Escitalopram is prescribed most frequently; however, it is also associated with the highest frequency of adverse reactions, accounting for 29.6% of side effects reported in outpatients. Weight gain and drowsiness were the most commonlyobserved side effects (18.1% and 9.1% of adverse reactions, respectively). Sedation, insomnia, QTc interval prolongation, hyponatremia, and adverse reactions in the sexual domain were also frequently reported. Finding from other studies indicate a high overall prevalence of drug-related problems with escitalopram use (45.1%), particularly among elderly population, especially in the context of comorbidities and polypharmacy. These findings highlight the critical role of pharmacists in preventing potential adverse reactions when using escitalopram.

Aim

The aim of this study was to assess the readiness of pharmacists working in pharmacies to provide high-quality pharmaceutical care when dispensing escitalopram, with an emphasis on minimizing the risks of drug-related problems.

Materials and Methods

A structured questionnaire was created using Google Forms to survey pharmacy professionals. The link to the questionnaire was distributed among pharmacy staff working in various pharmacies. Survey period: February-April 2025.

A total of 103 pharmacy workers participated in the survey (Table 1). The majority were pharmacists (68%), 25.2% were pharmacy managers, and the remaining 7 participants (6.8%) were pharmacy assistants. Most respondents (68%) had held their position for 1–5 years, and only 6.8% had worked for more than 10 years.

Table 1. Characteristics of surveyed respondents by position and work experience

Characteristic	Number of respondents	
	Abs.	%
By position		
Pharmacists	70	68.0
Pharmacy assistants	7	6.8
Pharmacy managers	26	25.2
By work experience		
Up to 1 year	13	12.6
1-5 years	70	68.0
5-10 years	13	12.6
More than 10 years	7	6.8

Results

It was found (Table 2) that the majority of pharmacy workers (60.2%) encounter escitalopram prescriptions several times a month, and 20.4% reported encountering them several times a week or daily.

Almost half of respondents (47.6%) reported being aware of cardiovascular risks associated with escitalopram use, and 35.0% indicated they were only partially aware of such risks. A total of 25.2% stated that they had observed

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adverse cardiovascular reactions in patients taking escitalopram. Nearly one-third (27.2%) of pharmacy workers were unaware of the possibility of QT interval prolongation on ECG during escitalopram therapy. Overall, 49.5% of respondents reported low awareness of escitalopram-related side effects, while 43.7% rated their awareness as moderate, and only 6.8% considered it high.

Almost 70% of pharmacy workers reported having low awareness of the risks of drug interactions when using escitalopram. According to the survey results, 48.5% of respondents never counsel patients on antidepressant use, 36.9% do so occasionally, and only 14.6% provide counseling regularly. Almost half (45.6%) of pharmacy workers do not provide any information regarding the appropriate use of antidepressants, while only 28.2% offer meaningful information about potential drug interactions.

The majority of respondents (52.4%) use Google and other internet resources as their primary source of information on the rational use of antidepressants. Additionally, 19.4% use periodicals, 17.5% refer to PubMed, and 10.7% use ChatGPT or other artificial intelligence tools. All respondents (100%) stated that they require additional educational programs on this topic.

Discussion

The survey results reveal insufficient awareness among pharmacy staff regarding the side effects of escitalopram and the risks of drug interactions, which in most cases is associated with a lack of patient counseling. It should also be noted that modern scientific sources are underutilized for obtaining information on personalized escitalopram use. A positive aspect is the recognition among pharmacy workers of the need for appropriate specialized educational programs. Therefore, pharmacists, following adequate training, can play a crucial role in identifying, preventing, and managing drug-related problems associated with escitalopram. Drawing on the experience of other countries, pharmacists can help reduce the risks of drug interactions and pharmacogenetic responses–particularly through close collaboration with physicians and other healthcare professionals–to ensure the safe and effective use of escitalopram.

Table 2. Characteristics of pharmacy workers' responses regarding readiness to counsel for reducing risks of drug-related problems when using escitalopram.

Characteristic	Number of respondents	
	Abs.	%
How often do you encounter escitalopram prescriptions?		
Several times a month	62	60.2
Several times a week or daily	21	20.4
Rarely or never	20	19.4
Are you aware of the potential cardiovascular risks associated with escitalopram?		
Yes	49	47.6
No	18	17.4
Partially	36	35.0
Do you counsel patients about these risks?		
Every time	15	14.6
Sometimes	38	36.9
Never	50	48.5
How do you assess your awareness of this interaction?		
High	7	6.8
Medium	51	49.5
Low	45	43.7
What information sources do you use to get information about escitalopram and cardiovascular diseases?		
ChatGPT or other artificial intelligence resources.	11	10.7
Google and other Internet search resources	54	52.4
PubMed	18	17.5
Medical journals and scientific articles	20	19.4

In modern practice, one of the emerging tools for personalized antidepressant use is the application of artificial intelligence (e.g., ChatGPT). As an illustration, we present a sample query and our refined interpretation of the recommendations generated by this tool, focusing on an algorithm of actions for pharmacists aimed at reducing the risk of drug-related problems when dispensing escitalopram.

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Proposed algorithm of pharmacist's actions when dispensing escitalopram, aimed at reducing the risk of drug-related problems.

Algorithm of actions for a pharmacist when dispensing escitalopram, aimed at reducing the risk of drug-related problems:

1. Assessment of Application Appropriateness
– Verify the prescription: ensure the presence of a valid medical prescription; check dosage and treatment duration.
– Confirm clinical indications: such as depression, generalized anxiety disorder, social phobia, etc.
– Assess potential contraindications
  - Hypersensitivity to escitalopram or other SSRIs;
  - Concomitant use with monoamine oxidase inhibitors (e.g., moclobemide);
  - History of QT interval prolongation.

2. Assessment of concomitant therapy
– Detection of potential drug interactions:
  - With CYP2C19, CYP3A4 inhibitors (e.g., omeprazole, fluconazole), which may lead to increased escitalopram plasma concentrations.
  - With other serotonergic agents (e.g., tramadol, triptans, other SSRIs, St. John's wort), which may increase the risk of serotonin syndrome.
  - With anticoagulants/antiplatelets due to increased risk of bleeding.
  - With alcohol due to enhanced side effects.

3. Assessment of patient-specific risk factors
– Age ≥ 65 years – due to increased sensitivity to adverse reactions, presence of comorbidities, and polypharmacy.
– Renal or hepatic impairment – due to the need for dosage adjustment.
– Family history of QT prolongation or cardiac arrhythmias.
– Behavioral or cognitive impairments that may affect adherence to treatment.

4. Prospective pharmaceutical counseling
– Dosage regimen:
  - Administer once daily, preferably at the same time each day.
  - Taper the dose gradually after achieving clinical improvement.
– Expected onset of effect: 2–4 weeks
  - the patient should be informed about this timeframe.
– Side effects requiring pharmacist attention:
  - Anxiety and insomnia at the beginning of treatment;
  - Gastrointestinal disturbances (e.g., nausea, diarrhea)
  - Sexual side effects, such as decreased libido or erectile dysfunction
  - Signs of serotonin syndrome, including hyperthermia, sweating, and tremor.
– Withdrawal risk warning:

Patient should be informed about potential discontinuation symptoms such as dizziness, irritability, and paresthesia. It is essential not to stop therapy abruptly!

5. Providing additional recommendations
– Avoid alcohol consumption and driving during the first weeks of escitalopram treatment.
– Report suicidal thoughts to the attending physician.
– Keep the medication out of reach of children.

6. Documentation and pharmacovigilance
– Record relevant information in the pharmacological database (if available).
– Report suspected adverse drug reactions to the national pharmacovigilance authority (e.g., the State Expert Center).

Conclusions

The results of this study underscore the need for enhanced educational initiatives and continuous professional development of pharmacists involved in the pharmaceutical care for patients during the treatment of anxiety and depressive disorders, particularly those prescribed escitalopram. Strengthening pharmacists' competencies in the identification, prevention, and management of drug-related problems–including adverse reactions, drug–drug interactions, and patient-specific risks–can substantially enhance pharmaceutical care.

The proposed pharmacist intervention algorithm, developed in response to the identified counseling and awareness gaps, may serve as a practical foundation for improving prospective pharmaceutical counseling by pharmacists

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during the dispensing of antidepressants in routine pharmacy practice and should be further evaluated in future applied research.

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Conflict of interests

The authors declare no conflict of interest in this Publication.

Consent to publication

All rules and regulations of the Committee on Publication Ethics (COPE) have been observed. All authors have reviewed the manuscript and given their consent for its publication.

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A – Work concept and design, B – Data collection and analysis, C – Responsibility for statistical analysis, D – Writing the article, E – Critical review, F – Final approval of article.

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Готовність фармацевта здійснювати менеджмент ризиків ліко-пов'язаних проблем при застосуванні есциталопраму (за даними анкетування)

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Аннотація: *глобальне споживання психотропних препаратів значно зростає, і в Україні ця тенденція особливо посилилася через повномасштабну війну. Есциталопрам, селективний інгібітор зворотного захоплення серотоніну, широко застосовується для лікування тривожно-депресивних розладів. Його використання супроводжується ризиком проблем, пов'язаних з ліками, таких як побічні реакції на ліки або лікарська взаємодія, особливо серед вразливих груп населення. Нашою метою було дослідити рівень готовності фармацевтів аптечних закладів до здійснення менеджменту ризиків ліко-пов'язаних проблем при застосуванні есциталопраму. Зважаючи на високі показники його призначення та поширеність побічних реакцій, особливо в умовах поліфармації та коморбідності, ключовим є забезпечення фармацевтичної опіки під час відпуску даного рецептурного препарату. Було проведено опитування у формі онлайн-анкетування із залученням 103 фармацевтичних працівників різних аптечних закладів України у період з лютого по квітень 2025 року за допомогою платформи Google Forms. В опитуванні було зібрано дані про професійний досвід, обізнаність про побічні реакції на лікарські засоби та взаємодію з ними, а також про поточну практику консультування. Більшість серед опитуваних фармацевтів (68%) були спеціалісти з досвідом роботи від 1 до 5 років. За результатами встановлено, що майже половина фармацевтів (48,5%) взагалі не консультують пацієнтів щодо можливих ризиків, пов'язаних із застосуванням есциталопраму. Лише 6,8% респондентів оцінили свій рівень обізнаності щодо потенційних побічних ефектів як високий, тоді як більшість визнали його низьким або середнім. Більшість опитаних (70%) не знають достатньо про ризики лікарських взаємодій при прийомі есциталопраму та третина - щодо можливого подовження інтервалу QT. Основними джерелами інформації для аптечних працівників залишаються пошукові системи, тоді як використання професійних наукових баз даних, такі як PubMed, є обмеженим. Водночас усі респонденти вказали на потребу в подальшому навчанні. Висновки дослідження підкреслюють необхідність впровадження структурованих, цільових освітніх програм для фармацевтів, орієнтованих на сучасні виклики фармакотерапії, а також інтеграції цифрових інструментів, заснованих на доказовій базі. Такий підхід сприятиме підвищенню рівня обізнаності аптечних працівників і посиленню їхньої ролі у профілактиці лікарських проблем, пов'язаних із психотропними засобами, зокрема при застосуванні есциталопраму у пацієнтів з коморбідною патологією при лікуванні тривожно-депресивних розладів. Розглянуто алгоритм дій фармацевта при відпуску препарату, зокрема оцінку ризиків, консультування пацієнтів, фармаконагляд та застосування новітніх інструментів.*

Ключові слова: антидепресанти, тривожно-депресивні розлади, міжмедикаментозна взаємодія, помилки застосування ліків, фармацевтична опіка.