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Insomnia Management in Community Pharmacies of Tripoli, Libya: A Simulated Patient Assessment of Counseling Practices

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Abstract:

Background: As the first point of contact for many with sleep problems, community pharmacists (CPS) play a key role in managing acute insomnia. This study evaluates the counselling and management practices of CPs in Tripoli-Libya; regarding this condition, an area where evidence remains scarce.

Methods: A cross-sectional study was conducted using the simulated patient (SP) methodology. A trained female SP presented a standardized case of acute, stress-related insomnia at 275 randomly selected community pharmacies in Tripoli. Data on history-taking, recommendations, and counselling were collected via a structured form and audio recordings, which were analyzed using descriptive statistics.

Results: A product was dispensed or recommended in 83.3% of visits. History-taking was inconsistent; while most pharmacists inquired about symptom nature (95.3%) and duration (62.9%), critical safety checks for concomitant medications (37.5%), medical conditions (9.8%), and allergies (2.2%) were frequently omitted. Melatonin supplements (44.4%), sedating antihistamines (25.5%), and magnesium (18.5%) were the most common recommendations. Inappropriate supply of prescription-only benzodiazepines occurred in 1.1% of cases. Counselling was deficient: while 80.4% provided dosing instructions, information on frequency (45.5%), duration (43.3%), and potential side effects (7.3%) was often lacking. Non-pharmacological advice was limited, with 45.8% advising caffeine reduction. The mean consultation time was brief (1 minute, 37.4 seconds), and an empathetic communication style was observed in only 8.7% of encounters.

Conclusion: The management of acute insomnia in Libyan pharmacies is inadequate, favoring product supply over patient counselling and safety. This underscores an urgent need for educational programs, structured protocols, and regulatory reinforcement to improve care.

Keywords: Patient Counselling, Community Pharmacist, Insomnia, Simulated Patient, Libya.

إدارة الأرق في الصيدليات المجتمعية في طرابلس، ليبيا: تقييم ممارسات الإرشاد الصيدلي باستخدام المريض المحاكي

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الملخص

المنهجية:أجريت دراسة مقطعية باستخدام منهجية المريض المحاكي (SP). حيث قدمت مريضات محاكات مدربات حالة موحدة للأرق الحاد المرتبط بالتوتر في 275 صيدلية مجتمعية تم اختيارها عشوائيًا في طرابلس. تم جمع البيانات المتعلقة بأخذ التاريخ المرضي والإرشادات الدوائية والتوصيات الصيدلية من خلال استمارة منظمة وتسجيلات صوتية، تم تحليلها باستخدام الإحصائيات الوصفية.

النتائج : تم صرف أو التوصية بمنتج في 83.3% من الزيارات. كان أخذ التاريخ المرضي غير متسق، فعلى الرغم من النشاسار معظم الصيادلة عن طبيعة الأعراض (95.3%) ومدة استمرارها (62.9%)، إلا أن الفحوصات الأساسية للسلامة مثل الاستفسار عن الأدوية المتزامنة (37.5%)، والحالات المرضية الأخرى (9.8%)، وحساسيات المريض الدوائية مثل الاستفسار عن الأدوية المتزامنة التوصيات الأكثر شيوعًا هي الميلاتونين (44.4%)ومضادات الهستامين

المهدئة (25.5%)، والمغنيسيوم (18.5%)، كما تم تسجيل صرف غير ملائم لأدوية البنزوديازيبين (التي تصرف بوصفة طبية فقط) في 1.1% من الحالات. أما الاستشارة المقدمة فكانت غير كافية: بينما قدم 80.4% تعليمات حول الجرعة، كانت المعلومات المتعلقة بتكرار الجرعة (45.5%)، ومدة العلاج (43.5%)، والآثار الجانبية المحتملة (73.5%) لا تقال للمريض في كثير من الأحيان. اقتصرت النصائح غير الدوائية بشكل رئيسي على التوصية بتقليل الكافيين (45.8%). كان متوسط وقت الاستشارة قصيرًا (دقيقة واحدة و 37.4% ثانية)، ولم يُلاحظ أسلوب تواصل متعاطف إلا في 87.7% من اللقاءات فقط. الخلاصة: إن التعامل مع حالات الأرق الحاد في الصيدليات الليبية غير كاف وفيه قصور، حيث يُفضَل صرف الأدوية بدلاً من تقديم الاستشارة المتكاملة للمريض وضمان سلامته. وهذا يؤكد على الحاجة الملحة إلى برامج تعليمية مُوجَّهة للصيادلة، ووضع بروتوكولات استشارية منظمة، وتعزيز الرقابة لضبط الممارسات المهنية والامتثال للمعايير؛ لتحسين جودة الرعاية الصحنة المقدمة

الكلمات المفتاحية: الإرشاد الصيدلي الدوائي، الصيدلي المجتمعي، الأرق، المريض المحاكي، ليبيا.

Introduction

Insomnia is clinically defined as difficulty initiating or maintaining sleep, or experiencing non-restorative sleep, despite having adequate opportunity for sleep, leading to daytime functional impairment [1]. The condition is highly comorbid with other illnesses; for instance, approximately 83% of individuals with depression also report insomnia symptoms [2]. It is a growing health concern in the modern world, with an estimated prevalence of up to 30% in the global population [2].

Effective treatment for insomnia is achievable with proper assessment and counseling. Current clinical guidelines recommend a thorough evaluation of sleep complaints and endorse non-pharmacological interventions as the first-line management strategy. These include sleep hygiene education and behavioral therapy techniques [3]. Pharmacological treatments, such as short-acting benzodiazepines (e.g., temazepam) or Z-hypnotics (e.g., zopiclone), are reserved for short-term use only in patients who do not respond to non-drug therapies [4]. These prescription medications are advised with caution due to risks of adverse effects, including next-day drowsiness, dependency, and an increased risk of falls or accidents. Meanwhile, patients often turn to over-the-counter (OTC) sedating antihistamines (e.g., doxylamine, diphenhydramine) and complementary preparations like valerian and melatonin, despite limited evidence for their efficacy and potential for drug interactions [5].

Given this landscape, community pharmacists are positioned to play a leading role in addressing insomnia. They can assess patients, educate them on the safe use and precautions of sleep aids, and advise when a medical referral is necessary [6,7]. As the most accessible frontline healthcare professionals with formal training in self-treatment and OTC pharmacotherapy, community pharmacists have a significant responsibility and opportunity to manage minor ailments and protect patients from the risks of inappropriate self-medication [7]. This underscores an increasing demand to expand their role, particularly in the supply of OTC treatments and the provision of patient counselling services [8].

Consistent with the evolving role of pharmacists worldwide, community pharmacists in Libya serve as highly accessible frontline healthcare providers. This accessibility has caused a growing demand to expand their duties, particularly in managing over-the-counter (OTC) medicines and providing patient counselling services [9]. However, the practical reality frequently diverges from this professional ideal. Mirroring challenges observed in other developing nations, such as Pakistan; a context with approximately 63,000 community pharmacies that often suffer from inadequate facilities, staffing, and equipment [10], the Libyan context reflects a broader systemic pattern. In both settings, pharmacy personnel may lack a sufficient understanding of effective disease management, despite their integral involvement in patient care [11,12]. Patient assessments are often limited, with insufficient data collection to accurately determine disease etiology, severity, or the therapeutic appropriateness of interventions [13]. Compounding this issue, dispensers frequently engage in diagnosing conditions and recommending therapeutic regimens without formal training, underscoring a critical disconnect between their responsibilities and their professional preparedness [14].

This pattern of suboptimal practice is not unique to Libya. Previous research in Jordan also suggests that pharmaceutical care services are often limited, with community pharmacists frequently failing to collect comprehensive patient medical histories [15]. Recent studies in Libya have provided a more nuanced, evidence-based picture of these challenges. Research highlights a pressing need to enhance pharmacists' capacity, particularly in ensuring the safe supply of medications; from navigating illegible handwritten prescriptions and look-alike sound-alike drugs to providing informed counsel on over-the-counter products like vitamin supplements [16,17]. A key advancement in this research is the move beyond the self-reported data that limited earlier studies, as demonstrated by Elmzughi et al. (2025), who employed the simulated patient methodology to provide a more accurate assessment of practice gaps [16].

A significant evidence gap exists regarding the management of common ailments in Libyan community pharmacies. Focusing on acute insomnia as a representative condition, this study was conducted to document pharmacists' current counseling practices and evaluate the appropriateness of their over-the-counter (OTC)

pharmacotherapy recommendations with patients seeking advice for insomnia in Libya.

Methods

Study Design and Ethical Considerations

A cross-sectional study was conducted in the Libyan capital, Tripoli, utilizing the simulated patient (SP) methodology to evaluate community pharmacists' management of acute insomnia complaints. This approach was selected to minimize the Hawthorne effect and avoid the social desirability bias inherent in self-assessment techniques [18]. Ethical approval for the study was obtained from the Biotechnology Research Center in Tripoli, Libya (Reference Number: NBC:001. H. 25. 46) prior to data collection.

Scenario Development

A standardized scenario was developed to represent a typical case of acute insomnia that does not necessitate clinical intervention. The scenario was drafted based on an extensive review of published literature and clinical guidelines for insomnia treatment [19, 20]. The initial draft was refined through consultations with an experienced community pharmacist (with >10 years in practice) and finalized via consensus through multiple research team meetings. The finalized scenario involved a 20-year-old (actual age of the SPs) female SP approaching the pharmacy dispensary and requesting "something to treat insomnia and help with sleep." Key information was provided only upon direct questioning by the pharmacist:

- Patient: Herself (the SP).
- Symptoms: Difficulty initiating sleep for the past two weeks, associated with anxiety and stress due to an upcoming major exam. No changes to sleep environment or routine were reported.
- Medical History: No concomitant medical conditions, current medications, allergies, nor possibility of pregnancy/breastfeeding.
- Previous Management: No prior treatments attempted or physician consultations. If not suggested by the pharmacist, the SP was instructed to enquire about "natural" products.

Data Collection and Assessment Criteria

A structured data collection form was developed specifically for this study using Google Forms to allow for the immediate documentation of visit information. Assessment criteria were adapted from previously published studies [19, 20] and modified for the Libyan context. The assessment criteria were evaluated using a dichotomous (yes/no) scale. The data collection form consisted of four distinct sections: the first documented pharmacy and visit characteristics (e.g., time, duration, location, and staff details); the second assessed the history-taking practices of the community pharmacists; the third detailed the pharmacists' recommendations; and the final section documented pharmacist-patient counselling characteristics. To ensure data integrity and minimize assessor bias, all visits were audio-recorded. These recordings were independently analyzed by three investigators to validate the assessments completed by the SP and to serve as a quality assurance measure. The recordings were also used to determine the duration of each interaction.

Simulated Patient Training and Procedure

The number of SPs chosen for this study was determined based on a systematic review by Watson et al. (2006) [21], which recommends a minimum of two SPs for such studies. Four female BSc students from the University of Tripoli were recruited to act as simulated patients. All SPs provided written informed consent, which included adherence to the study's ethical code ensuring participant anonymity and data integrity. Each SPs who performed the visits, underwent a comprehensive one-day training session. The training focused on standardizing the approach, with an emphasis on consistent scenario enactment, accurate visit evaluation, discreet audio recording, and handling unexpected situations. SPs were specifically instructed to avoid behaviors that could influence pharmacist decisions, such as asking leading questions or expressing product preferences.

Data Integrity and Procedure

To ensure data integrity and minimize assessor bias, all simulated patient visits were audio-recorded. These recordings served a dual purpose: they were used to determine the duration of each interaction, and they were independently analyzed by three investigators. This independent analysis validated the assessments completed by the SPs and served as a key quality assurance measure. To ensure competency and protocol refinement, the trained SPs subsequently conducted a pilot phase in ten community pharmacies. This exercise served the dual purpose of familiarizing the SPs with the practical application of their role and validating the clarity and feasibility of the data collection process. Following necessary adjustments, the main data collection commenced between August – October 2025, with data from the pilot phase being excluded from the final analysis.

Sample Size and Sampling

The target population consisted of 955 registered community pharmacists in Tripoli at the time of the study. Using

an online sample size calculator (Rao soft, Inc.) with a 95% confidence level, a minimum required sample size of 275 pharmacies was calculated. A convenience sampling method was employed, whereby pharmacists in close proximity to the researchers and available during their free time were approached for inclusion.

Data Analysis

The dataset collected via Google Forms was exported and managed using Microsoft Excel. The data were cleaned, coded into categorical variables, and analyzed using descriptive statistics. The findings are presented as frequency tables and percentages to characterize the practices observed during the SPs visits.

Results

A total of 275 community pharmacies were visits by the SPs. The demographic characteristics of the visited pharmacies are summarized in Table 1. The sample was nearly evenly distributed by CPs gender (52.7% female, 47.3% male). The majority of visits (41.5%) occurred in the afternoon (1 pm-6 pm), with over half (54.5%) conducted on weekdays. Most encounters (73.8%) took place when the pharmacy was perceived as crowded, with a moderate number of customers (3-5) being the most common specific scenario (42.9%). Nearly half of the pharmacies (46.9%) were staffed by two pharmacists at the time of the visit.

Table 1. Characteristics of the	pharmacies visited	by the simulated	patients
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Variable	Category	Total (n = 275) N (%)
Pharmacist gender	Female	145 (52.7)
	Male	130 (47.3)
Time of visit	8 am-12 pm	93 (33.8)
	1 pm-6 pm	114 (41.5)
	7 pm – night	68 (24.7)
Day of visit	Week days	150 (54.5)
	Weekends (Fri., Sat.)	125 (45.5)
Pharmacy crowded at the time of	No	72 (26.2)
visit	Yes	203 (73.8)
Number of Customer	Low (1-2)	59 (21.5)
	Moderate (3-5)	118 (42.9)
	busy (>5)	98 (35.6)
Pharmacists per pharmacy	1 pharmacist	96 (34.9)
	2 pharmacists	129 (46.9)
	> 2 pharmacists	50 (18.2)

Table 2 delineates the history-taking performance of CPs for an insomnia presentation. The findings reveal a pronounced inconsistency in the comprehensiveness of insomnia assessment. While the vast majority of CPs (95.3%) appropriately inquired about the nature of the symptoms, and a substantial proportion (62.9%) asked about their duration, critical elements related to medication safety and differential diagnosis were severely neglected. Specifically, less than 40% of pharmacists assessed for concomitant medications (37.5%), and key contraindications such as other medical conditions (9.8%), potential pregnancy or breastfeeding (0.7%), and history of allergies (2.2%) were rarely investigated. Furthermore, a limited number of CPs explored previous treatment attempts (9.5%) or established whether the patient had previously consulted a physician (6.2%), indicating significant gaps in gathering a complete patient history to inform a safe and effective therapeutic recommendation.

Table 2. History-taking practice of community pharmacists for insomnia presentation

History Taking Practice Items	Total (n = 275) N (%)
Identified the patient	77 (28)
Inquired about the nature of symptoms	262 (95.3)
Asked about the duration of symptoms	173 (62.9)
Asked about concomitant medications	103 (37.5)

Inquired about other medical conditions	27 (9.8)
Asked about previous treatments tried	26 (9.5)
Asked about prior doctor consultation/prescription	17 (6.2)
Assessed for of pregnancy/breastfeeding	2 (0.7)
Checked for history of allergies	6 (2.2)

The medications and pharmaceutical products dispensed by CPs are presented in Table 3. Melatonin dietary supplements were the most common recommendation, dispensed in (44.4%) of visits. This was followed by sedating antihistamines (25.5%) and magnesium supplements (18.5%). The recommendation of prescription-only medications, benzodiazepines, was rare (1.1%). A small proportion of encounters (7.1%) involved the recommendation of combination therapies, most commonly melatonin or antihistamines paired with a supplement.

Table 3. Medications and products dispensed by community pharmacists for Insomnia

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Total (n = 275)
N (%)
11 (70)
229 (83.3)
122 (44.4)
70 (25.5)
51 (18.5)
8 (2.9)
6 (2.2)
3 (1.1)
8 (2.9)
5 (1.8)
1 (0.4)
1 (0.4)
45 (16.4)
1 (0.4)

Table 4. Characteristics of pharmacist-patient counselling encounters during insomnia encounters

Category	Criteria	Total (n = 275) N (%)
Medication	Dose	221 (80.4)
instructions	Dose frequency	125 (45.5)
	Duration of medication	119 (43.3)
	Possible medication side effects	20 (7.3)
Additional advice	Advice to cut down on caffeine	126 (45.8)
	Recommend a natural/herbal tea	28 (10.2)
	Advised biological analysis	25 (9.1)
	Refer to doctor	1 (0.4)
Communication and workflow	Empathetic communication style	24 (8.7)
	Sought help from another pharmacist/used phone	11 (4.0)
	Did not give any instructions	54 (19.6)
Counselling duration	Mean duration \pm SD	1 min 37.4 sec ± 27.9 sec

The provision of medication instructions by community pharmacists was found to be inconsistent and incomplete. As shown in Table 4; instruction on medication dose was provided in most cases (80.4%), but guidance on dose frequency (45.5%) and treatment duration (43.3%) was less consistent. A critical deficit was observed in patient safety counselling, with information on possible side effects communicated in only 7.3% of visits. Notably, in a

significant proportion of encounters (19.6%), pharmacists failed to provide any medication instructions whatsoever, highlighting a substantial gap in essential patient counselling. Beyond core medication instructions, the most common lifestyle advice was to cut down on caffeine, offered in 45.8% of visits. Recommendations for natural/herbal tea (10.2%) or advice to undergo biological analysis (9.1%) were less frequent, and referral to a physician was exceptionally rare (0.4%). The qualitative aspect of communication was also assessed, revealing that an empathetic communication style was observed in only 8.7% of encounters. The mean counselling duration was brief, lasting 1 minute and 37.4 seconds (±27.9 seconds), indicating generally short consultations.

Discussion

This study provides the first documented insight into the management of acute insomnia by community pharmacists in Libya. The findings indicate that the current standard of care for patients presenting with insomnia symptoms is unsatisfactory, characterized by inadequate counselling and a suboptimal approach to pharmacotherapy. The SPs methodology employed in this research is considered robust, as it minimizes the potential biases inherent in self-reported data or the Hawthorne effect, thereby offering a valid assessment of real-world practices [21].

A critical factor contributing to this deficiency appears to be the brevity of pharmacist-patient interactions and non-pharmacological advice (like sleep hygiene) was rarely given. The mean consultation time of 1 minute and 37.4 seconds (±27.9 seconds) recorded in this study falls considerably below the World Health Organization recommended standard of at least 10 minutes for an optimal consultation. According to WHO guidelines, insufficient consultation time compromises the quality of care, leading to inadequate history taking, incomplete patient assessment, and, consequently, irrational treatment decisions [22]. A consultation of optimal duration is essential for conducting a proper clinical evaluation, delivering comprehensive health education, and fostering effective patient-pharmacist communication [23].

The operational context of pharmacies directly impacted counselling quality. Most observed encounters (73.8%) occurred in environments perceived as crowded, with the most common specific scenario being a moderate crowd of 3-5 customers (42.9%). This recurring patient volume, particularly concentrated during peak afternoon hours (41.5% of visits) and on weekdays (54.5%), was linked to increased pharmacist workload and stress, directly encroaching on the time available for patient consultation. Compounding this pressure was staffing: nearly half of the pharmacies (46.9%) operated with only two pharmacists during these visits. This understaffing during high-demand periods, coupled with poorly designed pharmacy layouts, critically limited both the privacy and the capacity for thorough counselling, thereby elevating the risk of poor care. These challenges were further exacerbated during evening shifts, where visits often coincided with staff fatigue and reduced personnel availability [16].

The CP serves as a primary healthcare contact for individuals seeking management for acute insomnia. In this role, the pharmacist is ideally positioned to conduct initial assessments of underlying causes and provide non-pharmacological advice on sleep hygiene, which can significantly reduce the risk of primary insomnia progressing to a chronic condition [10]. However, the results of this study identified a critical deficit in these core clinical activities, with comprehensive history-taking and patient counselling largely absent. This deficiency in patient counselling may be attributed to several factors. A lack of specific knowledge or low self-confidence in managing sleep disorders among CPs could be a primary contributor, a finding supported by a similar study conducted by Matowe et al. in Kuwait [24]. In contrast to a Jordanian study which attributed poor counselling to high patient turnover and the challenge of maintaining knowledge on a wide range of medications [25], the present context suggests other barriers. A significant factor may be the nature of the complaint itself. As medications for insomnia, such as sedating antihistamines, are often considered liable for abuse [26], pharmacists may exhibit hesitancy. This is evidenced by the finding that in 19.6% of encounters, pharmacists abstained from offering any assistance or providing instructions to the simulated patient.

These findings corroborate the assertion that the role of community pharmacies in Libya has shifted towards direct medical practice, often undertaken by personnel who may lack the specific training for complex clinical counselling. This study observed that in the majority of pharmacy visits (83.3%), a product was supplied through an automatic selection process that was not predicated on obtaining essential patient history or symptom details. This rate, while high, is slightly lower than the 86.6% and 96.0% reported in the foundational studies from which our methodology was adapted [19, 20]. Of greater concern is that a small but significant proportion of pharmacists (1.1%) inappropriately dispensed medications with a potential for dependence, specifically benzodiazepines. This constitutes an illegal practice that poses substantial risks to patient safety. Although the percentage is low, it underscores a critical regulatory failure, a challenge common in developing countries where enforcement of drug supply laws is often inadequate. This aligns with other reports identifying weak law enforcement as a leading factor contributing to the abuse or misuse of over-the-counter medicines [26, 27].

Pharmacists dispensing of sales for melatonin (44.4%), antihistamines (25.5%), and magnesium supplements (18.5%) may be considered a suboptimal outcome in this scenario. Given that the patient's insomnia has a clear stress cause and is likely transient, non-pharmacological approaches would be a more appropriate first-line

response. However, as the scenario did not reveal any obvious contraindications for the patient regarding these products, the pharmacists' decisions cannot be deemed entirely clinically inappropriate. Although the use of sedating antihistamines is generally discouraged due to their adverse effects and potential for misuse, they are legally available over-the-counter, and their supply implies a recommendation for judicious, short-term use in acute insomnia. Similarly, evidence supporting supplements for insomnia is insufficient to justify a professional recommendation [28]. The evidence for these supplements is often weak; for example, while short-term melatonin use is relatively safe, its long-term safety is unknown, and it is not considered an effective treatment for primary insomnia [29]. Beyond clinical considerations, the decision to supply these products may have been influenced by empathy for the patient or commercial pressures. This can be explained by findings that pharmacists often feel significant patient pressure and a readiness to serve, which may override clinical judgment [20]. The fact that an empathetic communication style was observed in only 8.7% of the encounters in this study may further explain why pharmacists defaulted to a product sale rather than effectively counselling on alternative management strategies.

Recommendations for natural or herbal tea were provided infrequently, by only 10.2% of pharmacists. This finding is consistent with an Australian study by Collins et al. (2017), where complementary medicines were supplied in just 7% of simulated patient visits [30]. This low rate of non-pharmacological advice is notable, as expert guidance, such as that from Murphy et al., recommends that patient counselling prioritize these strategies. They suggest programs that promote adequate consideration of non-pharmacological alternatives, including herbal teas and proper sleep hygiene [31]. Furthermore; counselling on established non-pharmacological measures, a cornerstone of insomnia management, was insufficient. While 45.8% of pharmacists advised reducing caffeine intake, only a small proportion (10.2%) recommended herbal remedies or sleep hygiene practices. Very few (0.4%) referred patients to physicians for further evaluation, highlighting the limited awareness of referral criteria and the importance of inter-professional collaboration.

Collectively, these findings emphasize the need for structured counseling protocols, continued professional development, and integration of behavioral and cognitive counseling approaches in pharmacy practice. Pharmacists play a vital role in insomnia management not only through medication dispensing but also by providing lifestyle guidance, monitoring therapy, and ensuring rational drug use.

This study has several limitations. First, the generalizability of the findings is limited as data collection was confined to pharmacies within Tripoli city, and the results are based on a highly specific clinical scenario of acute insomnia in a young female. Methodologically, the disguised nature of the simulated patient visits prevented the collection of accurate demographic and professional data (e.g., pharmacist age, job title), which had to be estimated by the researcher. Consequently, it was impossible to analyze associations between these predictor variables and the quality of management provided. Furthermore, non-verbal communication during consultations was not assessed. While measures such as a standardized data collection form, immediate recording, and independent validation of visits were implemented to mitigate recall and self-report bias, the potential for such bias remains. These limitations warrant further investigation to confirm and build upon the present findings.

Conclusion

The management of acute insomnia in Libyan community pharmacies is inadequate, characterized by inadequate patient assessment, a strong tendency towards product supply over counselling, and insufficient safety information. These findings highlight an urgent need for targeted educational interventions, the development of structured counselling protocols, and enhanced regulatory enforcement to improve the quality of care for patients with insomnia.

Disclaimer

The article has not been previously presented or published, and is not part of a thesis project.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

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