WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
Coden USA: WJPRAP Impact Factor 8.63
Volume 15, Issue 15, 1429-1437. Case Study ISSN 2277–7105

LAKHLAKHA (OLFACTION THERAPY) FOR THE MANAGEMENT OF CHRONIC INSOMNIA: A CASE REPORT

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Article Received on 30 June 2026,
Article Revised on 20 July 2026,
Article Published on 01 August 2026,
https://doi.org/10.5281/zenodo.21698310

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How to cite this Article: Mo Salman Nagori[1]*, Mehmooda Begum[2], Mohammad Arif[3], Tehmina Parveen[4], Naziya Noman[5], Mohd. Aadil Khan[6], Tabasum Rouf[7]. (2026). Lakhlakha (Olfaction Therapy) For The Management Of Chronic Insomnia: A Case Report. World Journal of Pharmaceutical Research, 15(15), 1429–1437.

ABSTRACT

Background: Insomnia is a prevalent sleep disorder causing significant daytime impairment and reduced quality of life. Conventional pharmacotherapies often present risks of side effects, tolerance, and dependence, highlighting the need for complementary options. In Unani medicine, *Lakhlakha* (olfaction therapy) is utilized to manage sleep disturbances by counteracting morbid dryness in the brain using specialized emollient and sedative formulations. **Case Presentation:** A 32-year-old male with a history of stable generalized anxiety disorder presented with a seven-month history of chronic insomnia. Primary symptoms included severe sleep initiation difficulty, with sleep latency exceeding 1.5 hours, and frequent nighttime awakenings. Baseline evaluations confirmed moderately severe clinical insomnia associated with a morbid dry temperament, without underlying secondary organic pathologies or sleep-related breathing disorders. **Intervention:** The patient underwent daily *Lakhlakha* (olfaction therapy) for 21 days. The formulation consisted of *Lactuca sativa* and *Coriandrum sativum* leaf juices, and *Nymphaea alba* oil. The preparation was inhaled nasally for 10 to 15 minutes, 30 minutes before bedtime. Concomitant stable escitalopram therapy and standard sleep hygiene practices were strictly maintained. **Results:** Following the intervention, subjective sleep

quality, latency, and daytime functioning improved remarkably, with full resolution of daytime fatigue. Objective assessments demonstrated significant reductions in both the Insomnia Severity Index and Generalized Anxiety Disorder-7 scores, indicating a shift to sub-threshold insomnia and decreased anxiety. The therapy was well-tolerated, and no adverse events, complications, nasal irritation, or morning grogginess occurred during the treatment course. **Conclusion:** *Lakhlakha* therapy showed promising clinical improvement and excellent tolerability for managing chronic insomnia in this single patient. While these findings suggest a potential non-pharmacological alternative, larger controlled clinical studies are required to confirm therapeutic efficacy and establish standardized delivery protocols.

INTRODUCTION

The word insomnia comes from words. The Latin word "in" means not. The Latin word "somnus" means sleep. This is a way to describe insomnia because it is a problem where people do not sleep well.[1,2] Insomnia disorder is characterized by dissatisfaction with sleep quantity or quality, associated with difficulty falling asleep, frequent nighttime awakenings with difficulty returning to sleep, and/or awakening earlier in the morning than desired. The disorder is also characterized by significant distress or impairment in functioning, and daytime symptoms including fatigue, daytime sleepiness, impairment in cognitive performance, and mood disturbances. Insomnia is differentiated from sleep deprivation by difficulty sleeping despite having adequate opportunity to sleep.[3,4,5,6]

Insomnia is caused by an imbalance between the Sleep-inducing neurotransmitters gamma-Aminobutyric acid (GABA) and adenosine, which are found in the hypothalamic ventrolateral preoptic Nucleus, and the arousal neurotransmitters (noradrenaline, serotonin, acetylcholine, orexin, and Dopamine).[7,8] Insomnia Is a highly prevalent sleep disturbance, affecting up to 30% of the adult population at some point in their lives. This disorder is more common among women, older adults, and individuals with lower socioeconomic status.[9,10]

Diagnosis of insomnia is made primarily through patient interviews and sleep diaries. Both pharmacological and non-pharmacological approaches are used in the treatment of insomnia.[11]

Current treatments and medications for insomnia are costly and often harmful due to side effects. Many over-the-counter sleeping Tablets, in addition to the commonly doctor-prescribed Benzodiazepines, non-benzodiazepines, melatonin, antidepressant, and

antihistamine medications,[12] may lead to Tolerance, dependence on the pills in order to fall asleep, Or abuse of the medication.[13] As the number of people Who suffer from insomnia rises, there is an increased Interest in complementary and alternative medicine (CAM). Recent studies have shown that roughly 1.6 million Americans (2002 National Health Interview Survey) Turned to CAM therapies within the previous 12 months to treat their conditions. Some of these include herbal Supplements, Unani regimental therapies, Ayurveda, acupuncture, yoga, hypnosis, Meditation, and exercise.[14]

In the Unani system of medicine, insomnia is referred to as *Sahar*, which is a condition marked by "excessive awakening," or the inability to go to sleep or stay asleep. This disease has been described by several Unani authorities, and etiologically considered as multifactorial, of which precipitative, predisposing and progressive causes are *Yabusat-i-sada* (simple dryness), *Hararat wa Yabusat-i-sada* (simple heat and dryness), *Ghalbae Safra wa Sawda* (dominance of bile and black bile).The underlying mechanism of the disease is disturbance in equilibrium between *Nawm-o-Yaqza*, and owing to that , the normal temperament gets affected and becomes *Yabis* (dry), leading to the widespread *Yabusat* that predominates the brain. Based on etiology, the Unani physicians have been managing Sahar with an organized line of treatment, by correcting the disequilibrium, either in *Nawm-o-Yaqza*, or by correcting *Mizaj (Sada / Maddi*) through *Istifragh* and *Tadeel*, along with the dietary management. For that purpose drugs with *Murattib* (emollient) and *Munawwim* (sedative) properties have been used orally and topically in the form of *Roghanyat* (oils) and *Dimadat* (paste) along with other regimes like *Dalk, Natul* and *Saut, lakhlakha* and *shamoom*. Almost all Unani physicians have advocated regimenal therapies in the management of Sahar.[15,16,17]

While various therapies are effective, *Lakhlakha* (olfaction) is particularly significant as it directly targets the brain via the olfactory pathway, rapidly countering the morbid dryness (*Yabusat*) and restoring moisture (*Rutubat*) without systemic side effects.

It is an aromatic-based preparation of watery or solid drugs, which are kept in a wide-mouth container and allowed to be inhaled through the nose. Hakim Azam khan advises that *Lakhlakha* of *aab-i-barg kahu (Lactuca sativa), aab-i-kishneez sabz (Coriandum sativum),* and *Roghan-i-nilofar* is beneficial in insomnia.[18,19]

CASE PRESENTATION

Patient Information

A 32-year-old male patient with a known history of Generalized Anxiety Disorder (GAD) visited the outpatient department with the primary complaint of chronic insomnia.

Chief Complaints & History of Present Illness

The patient reported significant difficulty in falling asleep and maintaining sleep for the past 7 months. The average sleep latency was reported to be prolonged to >1.5 hours, accompanied by frequent nighttime awakenings (2–4 episodes per night). Prior to the onset of these symptoms, the patient had normal sleep latency (10–20 minutes) and consistently achieved 7–8 hours of restorative sleep nightly.

The patient has a 3-year history of GAD, which has been well-managed with Tab. Escitalopram 10 mg daily. His psychiatric condition has remained stable for over 18 months without any modifications to the dosage. No changes in medication type or dosage occurred prior to or during the onset of insomnia and no medication-related adverse effects on sleep were identified.

Past Medical & Social History

- **Medical History:** Known case of GAD. No history of sleep apnea, parasomnias, thyroid dysfunctions, or chronic pain syndromes.
- **Social History:** Non-smoker, consumes no alcohol or recreational drugs. He maintains a regular daytime job with a stable schedule. There is no recent history of travel, circadian disruption, or recent increases in caffeine, stimulant exposure, or acute stress.

CLINICAL & OBJECTIVE FINDINGS

- **General Physical Examination:** Vitals were within normal limits. No symptoms suggestive of obstructive sleep apnea (e.g., loud snoring, witnessed apneas, morning headaches) or features of restless legs syndrome (RLS) were observed.
- **Mental Status Examination (MSE):** Revealed moderate anxiety but no signs of clinical depression. Cognitive functions were normal.
- **Sleep Hygiene Evaluation:** Found to be adequate, with no evidence of behaviors contributing to conditioned arousal.

- **Psychometric Scores**

- **GAD-7 Score:** 10 (Moderate anxiety).
- **Insomnia Severity Index (ISI):** 21 (Moderate clinical insomnia)

Based on the Unani principles of diagnosis (*Ajnas-e-Ashara*), the patient was examined to evaluate the temperamental dominance. The chronicity of the disease, associated moderate Anxiety, and severe sleep disturbances indicated an excess of *Yabusat* (dryness) in the brain. The overall temperament of the patient was assessed as *Su-e-Mizaj Yabis* (Morbid Dry Temperament), which necessitated therapies possessing *Murattib* (moisturizing) and *Buroodat* (cooling) properties.

Therapeutic Intervention

1. Rationale of Therapy (*Usool-e-Ilaj)*

The primary therapeutic goal was to counteract the morbid dryness (Yabusat) in the brain and restore the physiological equilibrium of Nawm-o-Yaqza (sleep and wakefulness). For this purpose, Lakhlakha (olfaction therapy) was selected due to its rapid action via the olfactory pathway and its potent Murattib (moisturizing), Musakkin (soothing), and Munawwim (sedative) properties.

2. Formulation of *Lakhlakha* (Ingredients C Preparation)

As advocated by Hakim Azam Khan, the *Lakhlakha* was prepared using the following classical ingredients: *Aab-i-barg Kahu* (Fresh juice of *Lactuca sativa* leaves) – 10 ml, *Aab-i-kisneez sabz* (Fresh juice of *Coriandrum sativum* leaves) – 10 ml, and *Roghan-i-nilofar (*Oil *of Nymphaea alba*) – 5 ml

Preparation Method: All the liquid extracts and the oil were thoroughly mixed and kept in a clean, wide-mouth glass container to allow the volatile and aromatic principles to diffuse effectively for inhalation.

3. Method of Administration and Duration

Procedure: The patient was instructed to hold the wide-mouth container close to his nose and take slow, deep inhalations.

Duration per session: 10 to 15 minutes.

Frequency: Once daily, approximately 30 minutes before bedtime. Total

Duration of Therapy: 21 days

4. Concomitant Medications and Advice

The patient's ongoing psychiatric medication (Tab. Escitalopram 10 mg daily) was strictly maintained at the exact same dosage throughout the study period to prevent any confounding effects on sleep architecture. Standard sleep hygiene practices were reinforced, including maintaining a cool room temperature and avoiding screen time 1 hour prior to bed.

RESULTS AND CLINICAL OBSERVATIONS

After a 21 days treatment session with *Lakhlakha* therapy, the patient showed a clear improvement in insomnia and anxiety symptoms. The Insomnia Severity Index (ISI) score dropped significantly from a baseline of 21, which indicated clinical insomnia, to a range of 7 to 8, showing sub-threshold insomnia. At the same time, the Generalized Anxiety Disorder (GAD-7) score decreased from 10 to between 3 and 4, indicating a significant reduction in anxiety symptoms that occurred alongside insomnia. Objective clinical assessments supported these results, showing that the sleep-wake cycle returned to normal. This included shorter sleep latency, longer total sleep duration, and better sleep maintenance. During the treatment, there were no reports of negative events or complications related to the treatment, which highlights its good safety and tolerability. Patient reports confirmed lasting improvements in daytime alertness, mood stabilization, and overall satisfaction with the treatment. This supports the practical usefulness and effectiveness of this additional approach for managing chronic insomnia with anxiety (Table 1).

Table 1: Clinical Outcomes Before and After Lakhlakha Therapy.

Outcome Measure	Baseline (Day 0)	Post-treatment (Day 21)
Insomnia Severity Index (ISI)	21 (Moderate clinical insomnia)	8 (Subthreshold insomnia)*
Generalized Anxiety Disorder-7 (GAD-7)	10 (Moderate anxiety)	4 (Minimal anxiety)*
Sleep latency	>90 minutes	<30 minutes
Night-time awakenings	2–4 episodes/night	Occasional (0–1 episode/night)
Total sleep duration	Poor/non-restorative	7–8 hours (restorative)†
Daytime fatigue	Present	Resolved
Morning alertness	Poor	Markedly improved
Morning grogginess	Not applicable	Absent
Adverse events	Not applicable	None

DISCUSSION

This study shows that *Lakhlakha* therapy effectively reduces chronic insomnia symptoms through a combination of methods that involve neuro-olfactory pathways and address traditional temperamental imbalances. Activating nasal epithelium receptors sends signals to the

limbic system. This process helps regulate autonomic function and produces sedative effects that counteract *Su-e-Mizaj Yabis*, by restoring moisture and improving balance in sleep-wake regulation (*Nawm-o-Yaqza*). Compared to traditional sleeping pills, this nasal-based approach has a better safety profile. It reduces the risks related to drug tolerance, dependence, and rebound insomnia. While the findings are limited by the single-case design, combining traditional olfactory therapies with established sleep hygiene practices offers a promising, low-risk additional strategy, especially for patients who struggle with standard medications.

Future studies should focus on characterizing and standardizing herbal formulations and developing consistent delivery methods to improve reproducibility and clinical use. It's important to include objective outcome measures, like polysomnography and controlled odor comparisons, to clarify the underlying mechanisms and confirm therapeutic effectiveness. Establishing standard concentration and dispersion methods will improve comparability across clinical settings and aid in designing larger, multicenter randomized controlled trials. These trials are essential to support the role of olfactory-based treatments as lasting, non-drug options for managing insomnia. By combining traditional knowledge with modern neuroscience methods and technology assessments, we can fill existing gaps in clinical practice and offer patient-centered, evidence-based complementary options with minimal side effects.

CONCLUSION

Lakhlakha therapy, used within a structured Unani medical framework, shows early promise and tolerability as an additional treatment for chronic insomnia. The method works in several ways; it stimulates nasal epithelium receptors and influences the limbic system. This addresses dry temperamental imbalances and helps maintain sleep stability. This approach offers a safer choice compared to traditional sleep medications, as it lowers the risks of tolerance, dependence, and rebound effects. To support its clinical use, we need thorough, large-scale randomized controlled trials to verify these initial findings, explain the molecular and neurophysiological processes, and create standardized treatment guidelines.

Using objective neurophysiological assessments, such as polysomnography and neuroimaging, along with accounting for individual differences in the sense of smell, will improve the accuracy and customization of treatment. Teamwork among clinicians, neuroscientists, and traditional medicine experts is vital to incorporate these treatments into evidence-based sleep medicine practices. Overall, this combined model has the potential to tackle the global issue of sleep disorders by providing safer, effective, and patient-focused

treatment options that blend traditional knowledge with modern scientific standards.

Data Availability Statement

The data supporting the findings of this study are available within the article. Additional details are available from the corresponding author upon reasonable request.

Ethical approval and consent to participate

Institutional Ethics Committee approval was not obtained. All participants signed a written informed consent for treatment and publication.

Conflict of Interest

The authors declare no conflict of interest.

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