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# Which Aroma In Iranian Traditional Medicine Is Effective On Sleep Disorders?

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## Abstract

Sleep disorder is considered as a common problem throughout the world. Aromatherapy is a kind of treatment performed by using essential oils of plants for improving disease. There is much evidence in the literature, including Iranian traditional medicine, which confirms its positive effects on improving sleep disorder. Related keywords searched some Iranian traditional medicine texts and some new valid databases. In Iranian traditional medicine, aromatherapy is one of the methods of treatment for improving sleep disorders and its done by the temperamental approach. Aroma temperament, brain mal-temperament and specific performance of aroma are three factors for selection of the plants. Fourteen aromatic plants are introduced that can be effective by hypnotic in insomnia and reducing sleep in oversleeping. Aromatherapy is an effective method to improve sleep disorders, and it can be used through various plants in the more specified way with fewer side effects using temperamental approach. **[GMJ.2017;6(1):3-11]**

**Keywords:** Aromatherapy; Sleep Disorders; Plant; Temperament; Traditional Medicine

## Introduction

Sleep disorder is defined as a disorder in natural or behavioral patterns in sleep, which more than 80 types of it have been reported by the International Classification of Sleep Disorders [1-2]. Despite its high prevalence, less than 20 percent of patients are usually identified and treated [3-4]. Untreated or prolonged sleep disorder can lead to many problems in the patients, such as malaise, loss of concentration, weight gain, high blood pressure, diabetes, and even suicide [5-12]. Pharmacotherapy and cognitive behavioral therapy are currently the most common and widely used treatment methods in patients with sleep disorders [13-16]. Benzodiazepines are the most commonly prescribed drugs to improve sleep, which besides their positive effects; they can leave side effects such as drug dependency, tolerance, increased dose, sleepiness during the day, amnesia, falling,

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and hip fracture particularly in older adults [17-23]. Cognitive-behavioral therapy can improve sleep quality in many cases with the management of some factors, such as sleep restriction, relaxation, and control of stimuli, but some evidence shows that other treatment methods are needed in some patients [24-28].
According to the world health organization (WHO) statement on revival and development of indigenous and traditional medicine in countries, as well as the tendency of people to use complementary medicine, therapies such as acupuncture, massage, yoga, and aromatherapy have been considered more than before [29-31].
Aromatherapy is a holistic approach and with a history of several thousand, which improves the physical, mental, and emotional state of patients using essential oils of plants [32-36]. Rene-Maurice Gateffosse in 1928 introduced aromatherapy modification with essential oils for the first time in new form [37-38].
Essential oils are volatile or liquid materials that are derived from different parts of plants such as flowers, leaves, stems. They are used in various methods of aromatherapy such as massage, anointment, bathing, and inhaling [39-42]. Much evidence in modern medicine and Iranian traditional medicine (ITM) show that aromatherapy is effective in improving many diseases such as sleep disorders [43-48].
The ITM has a holistic approach to the body with considering temperament. In this therapeutic method, prevention is preferred over treatment. The health and treatment of diseases are based on improving six essential principles of the health. In this view, all things, including humans, organs, diseases, plants, and aromas have temperaments. Temperament is created by different functions of four elements of air, water, fire and soil that cause different physical and chemical characteristics in physiological characteristics of living creatures. It is usually categorized into four types, including hot and wet, hot and dry, cold and wet, and cold and dry.
Each person with specific temperament has certain properties and especial health orders. Parts of these orders are recommended for the health of the entire body, and parts of them are specified for different organs such as brain, heart, and liver. Smelling pleasant aroma is considered as the main health order for whole body health and brain health in all types of temperament specially. In ITM, the cause of the diseases is usually disturbance of natural temperament (mal-temperament) of organs, and treatment is performed in opposite direction of temperament [49-57].
Currently, much evidence shows that the impact of aromatherapy on improving sleep, while in some of the studies the results are not confirming as well as a selection of aroma for the patient is not usually specified [58-71]. As there are many recommendations in ITM to use aromatherapy for improving sleep disorders, the aim of this study is to present aromatherapy with the temperamental approach in sleep disorders with specified plants.

*Search Strategies*

Some of the most traditional medical books (Alhavi fi Alteb, Masaleh Alabdan va Alanfos, Alganoun fi Alteb, Zakhireye Kharazmshahi, Al- Aghraz al- Tibbia val Mabohess al- Alaiia, Ghanoocheh, Kholase Al Hekma, Makhzan-al-Adviyeh, Kabir Garabadin, Tebbe Akbari, Qarabadin-e-salehi, Qarabadin-Azam, Exir-e-Azam) were reviewed in the form of Noor software (version 1) since second century Hijri (2th AH) to the contemporary. Noor software is an electronic library with search capabilities that contains more than a thousand of Islamic and ITM books.
The study was conducted in two stages. In the first stage, they were reviewed by keywords, including sleep and aroma with their proper nouns in traditional medicine including, “shamum” (aroma in dry base), “lakhlakhe” (aroma in wet base), “sahar” (insomnia) and “sabat” (oversleeping),“boo” (odor), “rayehe” (odor), “atr” (aroma) in traditional texts.
In the selection of references, it was tried that medical and herbal books of well-known writers and philosophers of each century, such as Ibne Sina, Jorjani and Aghili to be considered and legible texts and notes to be selected that more scholars agree upon them. The books scanned, but the books that their qualities were not good or their printed versions were not available in the valid libraries were excluded.

After taking notes with keywords, contents related to sleep, aromatherapy and plants were divided into three parts separately, and they were assessed and analyzed. Then, contents were rewritten. Medicinal plant books were used to find the scientific names of the traditional books and the plants without their scientific name were not mentioned in results [75-79]. In the second stage, review of new references was conducted by keywords of aromatherapy, sleep and essential oil on PubMed, Science Direct, and Up-to-date. Then related contents were collected, assessed, and analyzed.

**Results**

In ITM, sleep is considered as one of the six basic principles of human health (air, food, sleep and wakefulness, exercise, retention and returning and mental states) that each of them has separate health orders. There are some health orders to have a good sleep such as the early eating of dinner, going to bed in the early hours of the night, listening to soft music with a repetitive rhythm, and smelling the pleasant aroma. Several factors such as individual temperament, age, sex, food, and the season could affect the sleep. In general, any person with increased wetness in temperament will have more sleep, and each individual with increased dryness in temperament will have less sleep [43-45].Sleep disorders are divided into two major groups, including insomnia and oversleeping that each one is divided into subgroups cited in references in detail. Some factors such as malnutrition, aging, and some diseases such as gastrointestinal disorders, brain dysfunction, and cancer leads to sleep disorders. Dry temperament is the most important cause of insomnia and increased coldness and wetness in brain cause oversleeping [46, 49].

Symptoms such as the blurred face, thirst, irritable sense of smell, obsessive thoughts, and constipation are usually seen in patients with the dryness of brain temperament. While symptoms such as increased salivation and nasal discharge, facial puffiness, white face, and malaise are usually seen in patients with coldness and wetness of brain temperament [45-46].

In the treatment of sleep disorders, the first step is to modify the bad habits of the six principles of health. The second step is the use of various herbal medicines by various methods such as oral form, anointment, poultice, and bathing, smelling alone or in combination with others [50, 55].

Selecting the appropriate aromatic plants in insomnia and oversleeping is important and it depends on three factors including brain mal-temperament, aroma temperament, and specific performance (Figure-1).

This selection is usually determined by the oppositional direction between aroma and brain mal-temperament and sometimes by the specific performance of aroma. The aromas with wet temperament are usually used in the dryness of brain (insomnia), and aromas with warm and dry temperaments are generally used in coldness and wetness of brain (oversleeping), and the specific performance sometimes performs it without temperamental approach [43-45,51-53].

In a review of ITM resources, many plants are found that they are recommended for improving sleep disorders, but only some of them are mentioned in Table-1 [49-57].

In the traditional form of aromatherapy, the plants should be very tiny, like dust, then they are used either dry or on the liquid base such as vinegar or rosewater.

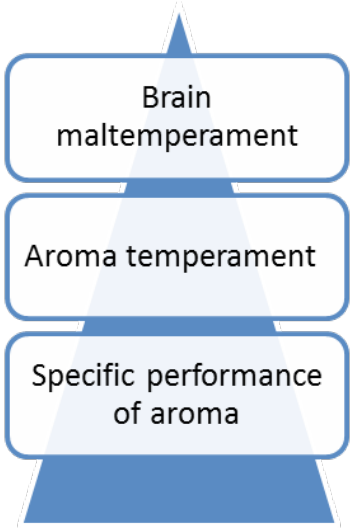


**Figure 1.** Factors of selection of aroma

**Table 1.** Medicinal Plants Were Used for Improving Sleep Disorders in ITM

| Traditional name | Scientific name | Common name | Temperament | Effect | Sleep disorders | New research |
|---|---|---|---|---|---|---|
| Shebet [47] | *Anethum graveolens* L. [76-77] | Dill | Hot and dry [47] | Hypnotic | Insomnia | Antidepressant and analgesic effects [80] |
| Kozborah [47] | *Coriandrum sativum* L. [76-77] | Coriander | Cold and wet [47] | Hypnotic | Insomnia | Hypnotic [73] Hypnotic [81] |
| Zaafaran [47] | *Crocus sativa L. [76-77]* | Saffron | Hot and dry [47] | Hypnotic | Insomnia | Hypnotic [82] |
| Khas [47] | *Lactuca sativa.* [76-77] | Lettuce | Cold and wet [47] | Hypnotic | Insomnia | Hypnotic [72] Anxiolytic effect and hypnotic [83] |
| Tofah [47] | *Malus pumila Mill*. [76-77] | apple | Cold and wet hot and wet [47] | Hypnotic | Insomnia | |
| Niloofar [47] | *Nymphaea alba* L. [76-77] | Water lily | Cold & wet [47] | Hypnotic | Insomnia | anxiolytic effect [84] |
| Afyoon [47] | *Papaver somniferum* L. [76-77] | Opium poppy | Cold and dry [47] | Hypnotic | Insomnia | |
| Vard [47] | Rosa damascena Mill | Damask rose | Cold and dry [47] | Hypnotic | Insomnia | Hypnotic [71] |
| Sandal [47] | *Santalum Album* [76-77] | Indian sandalwood | Cold and wet [47] | Hypnotic | Insomnia | Antidepressant and analgesic effects [85] Antidepressant effects [86] |
| Shahespargham [47] | *Tanacetum balsamita L.ssp.* | Tansies | Hot and dry [47] | Hypnotic | Insomnia | |
| Oghhovan [47] | *Tanacetum parthenium* L. [76-77] | Feverfew | Hot and dry [47] | Hypnotic | Insomnia | Antinociceptive effects [87] |
| Banafsaj [47] | *Viola odarata* L. [76-77] | Violet | Cold and wet [47] | Hypnotic | Insomnia | Hypnotic [88] |
| Komoon [47] | *Nigella sativa* L. [76-77] | Black cumin | Hot and dry [47] | Excessive sleep modulator | Oversleeping | Anxiolytic effect [89] |
| Khardal [47] | *Sinapis arvensis* [76-77] | Charlock mustard | Hot and dry [47] | Excessive sleep modulator | Oversleeping | |

Duration of aromatherapy is the main point and two hours or the more time is better to achieve the best outcome [43-47]. Among mentioned plants, violet is the most recommended [43-47].
In the following, in a review of the most clinical trials of aromatherapy in patients with sleep disorders and finding plants, results show that lavender is the mostly used that are mentioned in Table-2.

**Discussion**

Our findings demonstrate that in ITM, aromatherapy is a main 'health order' in healthy people and 'therapeutic order' in patients with sleep disorders. This result is consistent with the results of many studies that have done in recent years [66, 68, 71]. Inhalation of some essential oils via the circulatory system and the olfactory system can stimulate the brain to release neurotransmitters such as dopamine and serotonin [95]. Some evidence shows that dopamine and serotonin improve sleep [96]. Thus, secretion of serotonin and dopamine in the brain after aromatherapy can be one proposed mechanism of therapeutic effect of aroma on improving sleep disorders.
There is some evidence that indicated plants in results have positive effects on sleep quality. However, part of them have not been studied in clinical trials and only have studied in vitro. According to Table-2, lavender is the most used plant in recent clinical trials while lavender is usually recommended in oral form for improving sleep in ITM [66]. Some evidence suggests that lavender essential oil can affect dopamine receptor expression in the olfactory bulb [97]. We think that lavender can probably influence the sleep by specific performance without temperamental approach so it can be used wildly for patients.
Based on results, the temperament of the aroma is effective in the treatment of insomnia and oversleeping. However; we did not found any clinical trials with aromatherapy in oversleeping that this is one of the interesting points of our results. Some studies have risen in patient with less melatonin; insomnia is more seen, so it seems melatonin temperament is cold [98]. Other studies have shown that there are some components such as melatonin in some fruits with cold temperament [99].
Finally, according to findings in ITM and new researches, we suggest that some aroma molecules with different temperaments can influence brain system to secret some substances such as serotonin, dopamine, and melatonin that can help to improve sleep quality.
The present study has some limitations.

**Table 2.** Aromatherapy Studies On Sleep Quality

| Authors, year | Study | Result on sleep quality |
|---|---|---|
| Hwang and Shin. 2015 [68] | Systematic review and meta-analysis (12 studies between 2000-2013) | Positive |
| Lillehei and Halcon. 2014 [66] | systematic review (15 studies) | Positive |
| Lee *et al*. 2012 [32] | Systematic review | Positive |
| Lillehei *et al*.2016 [90] | Clinical trial (lavender oil) | Positive |
| Kardag *et al*. 2015 [91] | Clinical trial (lavender oil) | Positive |
| Lytle *et al*. 2014 [92] | Clinical trial (lavender oil) | Positive |
| Hajbagheri *et al*. 2014 [71] | Clinical trial (Rose oil) | Positive |
| Johannessen. 2013 [70] | Clinical trial (lavender oil) | Positive |
| Cho *et al*. 2013 [93] | Clinical trial (lavender, roman chamomile & neroli) | Positive |
| Wiliams. 2006 [94] | Clinical trial (lavender oil) | Ineffective |

We are not sure that we could sum up all contents and related plants. In addition, we could not find the scientific name of some of the plants, so we ignored to mention them.

## Conclusion

Aromatherapy is an effective method suggested for improving sleep disorders, which it does not have severe side effects. In the ITM, this method is considered as the main order in the treatment of many diseases such as sleep disorders. Due to temperamental approach, the plants are chosen more specifically in insomnia and oversleeping. We recommend that more studies to be conducted in this regard as there are precious points in the ITM recommendation in using this method in other diseases. We hope that our result help physicians and nurses use diverse plants in aromatherapy.

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## Conflict of Interest

The authors report that there is no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

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