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Non-Pharmacological Approach in Ayush System of Medicine for the Management of Insomnia: A Review

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Abstract: Lifestyle disorders and non-communicable diseases are the greatest threats faced globally. Non-communicable diseases like cardiovascular diseases, cancer, diabetes and chronic lung diseases account for an estimated 68% of all global mortality. Among them insomnia is one of the most common and dangerous lifestyle disorders, it affects both physical and mental health and can be caused by factors such as stress, anxiety, or poor sleeping habits. Many pharmaceutical companies have come up with a variety of drugs to help with this condition, but these medications may have unwanted side effects or create a dependency on them. So, people in search of non-pharmacological solutions have been increasingly turning to natural and herbal remedies as a safer alternative. The Ayush medical system is a complementary medicine that has been practised throughout India for centuries. Some of them have Indian origins and some have different origins and invaded India at different periods of time. They treat insomnia in natural way not only by using internal medication but also through various therapies. This article focused on the various non-pharmacological intervention practiced in Ayush system of medicine for the management of Insomnia.

Keywords: Ayush, Insomnia, Thookaminmai, Anithra, Sehar, Non-pharmacology

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Introduction

Indian system of medicine mainly comprises of Siddha, Ayurveda, Unani, Homeopathy, Yoga and Naturopathy. These complementary medicines

are symbols of Indian traditions. The people of India believed in traditional medicine rather than modern medicine. Each system has its own

unique way of treating the ailments. Among this system of medicine, some have Indian origins, like Siddha and Ayurveda. Homeopathy, Unani medicine, and naturopathy all originated in different countries and eventually infiltrated India over a certain period. Since Siddha and Ayurveda have the same origin, their basic principles are more or less similar. They encompass theories like the Panch Bootha theory, Thirithoda theory, Nadi etc. (Ravishankar *et al.*, 2007; Jaiswal *et al.*, 2016).

The majority of these systems have their own conceptual framework. They treat the ailments not only by giving internal medication but also through external therapies. They are the founders of non-pharmacological interventions. For each ailment, a variety of therapies are available. These therapies are tailored to the patient's condition and diagnosis, and range from dietary, lifestyle and environmental changes to the more traditional forms of physical therapies (Kaur *et al.*, 2019).

Insomnia is one of the most frequent sleep disorders. It is characterised by daytime symptoms that impede occupational, social, or other areas of functioning, as well as nocturnal symptoms that include difficulty starting and/or sustaining sleep. Insomnia is a disorder that may occur by itself or in combination with other physical and/or mental health issues known as co-morbid illnesses. Insomnia is more common in women, and its severity may spike at certain points in a woman's life, like pregnancy or menopause. In the AYUSH system, the term "sleeplessness" has several names and definitions (Thas, 2008). In Siddha, sleepless comes under the topic of 14 vegangal in the term of Thookaminmai. In Ayurveda, sleeplessness is known as Anidra and it is considered to be caused by Vata imbalance. In Unani it is termed as sehar. In Homeopathy, sleeplessness is treated as insomnia and the causes of it are multi-factorial (Proserpio *et al.*, 2020). These definitions and terms indicate how ancient cultures understood the concept of sleeplessness and created

treatments to help address this problem (Sutton, 2021). According to these cultures, the primary cause of sleeplessness was attributed to an imbalance in the body, which would be addressed through various natural remedies and therapies. Many pharmaceutical companies have come up with a variety of drugs to help with this condition, but these medications may have unwanted side effects or create a dependency on them. So, people in search of non-pharmacological solutions have been increasingly turning to natural and herbal remedies as a safer alternative. This article focused on the various non-pharmacological intervention practiced in AYUSH system of medicine for the management of Insomnia.

Insomnia overview:

Definition:

The definition of insomnia varies across medical literature. The term "insomnia" was used as a disorder with the following diagnostic criteria: (1) difficulty falling asleep, staying asleep or non restorative sleep; (2) this difficulty is present despite adequate opportunity and circumstance to sleep; (3) this impairment in sleep is associated with daytime impairment or distress; and (4) this sleep difficulty occurs at least 3 times per week and has been a problem for at least 1 month (Morin and Jarrin, 2022).

Prevalence:

Insomnia is prevalent in 10%-15% of the general population. Approximately 10% of the adult population has an insomnia disorder, and another 20% has occasional insomnia symptoms. Women, older adults, and people with socioeconomic hardships are more vulnerable to insomnia. Insomnia is a lifestyle disorder that is caused by our current society's lack of emphasis on the importance of sleep. Sleep is essential for optimal physical and mental health, and the lack of it leads to serious health conditions. A survey conducted in India revealed that 83.4% of individuals suffering from psychiatric disorders have sleep disturbances, showing that there is a

clear link between sleep disturbances and mental health issues (Mondal *et al.*, 2017).

Non-Pharmacological practice in Ayush system- an overview:

Siddha:

Siddha system of medicine is a unique traditional method followed over an era before the emanation of modern medicine. It is explicitly followed in southern part of Tamil Nadu. The principle behind this system is "Andathil ullathae Pindam, Pindathil ullathae Andam" which translates to "the environment is the same within and outside our body," and thus suggests that one's physiology should be adjusted in response to their environment and the season (Subbarayappa, 1997). The five elements are responsible for emergence of this universe and origin of every species. This theory is called as "Panjabootha theory". These five elements give origin to three humours vatham, pitham and kabam which is called as "thirithoda theory". Along with these elements Siddha system considers that the physical, moral and physiological well-being of an individual is governed by 96 factors. These 96 factors include perception, speech and diagnosis of pulse etc.

The treatment protocol of this system is purely based on these altered humours. The altered humours not only corrected by internal medication it can also be retrieved by external therapies. In this system there are 32 internal and 32 external medications. Siddha not only treats the disease by using herbo-mineral formulation but they also treat without internal medications. Each 32 external therapies have multifarious formulation, therapeutic procedures for various ailments. Thookaminmai is the term used to describe sleeplessness in siddha texts. This is discussed in detail in 14 vegangal (natural urge). There are certain urges that should not be repressed, and sleep is one of them. If it is not properly cared for, the results might be a variety of unpleasant symptoms, such as a headache, inflamed eyes, loss of hearing, and slurred speech (Sam *et al.*, 2022).

Varmam is one of the branches of Siddha that has recently gained popularity due to its non-invasive methods and effectiveness. Varmam is a science that is based on vaasi flow. Vaasi is nothing but a energy flow which flows throughout our body constantly. This vaasi flow is responsible for the function of our body. When there is any obstruction in these it leads to a pathological condition. There energy flow sustain at certain points in higher concentration which is called as varma pulligal. In total, there are 108 points in the human body, 12 of which are known as PaduVarmam (locations with high energy concentration) and 96 points are known as thoduvarmam (Rajaram, 2015). Switches are used to regulate the flow of electricity, while life centres in the human body are used to control the flow of life. When the life centres of the body are harmed in any way, whether directly or indirectly, by a blow to the head or by a cut, the whole body loses its ability to manage itself. In other words, the whole body is immobilised by the paralysis. Varma Kalai, a healing art, employs manipulation techniques to restore the dysfunctional or obstructed vaasi flow. The varmam points used for insomnia are illustrated in Table 1.

Thappalam: It is a unique therapeutic technique where the medicated herbal powder is made into paste and applies over the vertex of the scalp. Panjakaarpa kuliyaal chooranam should made into a paste by mixing it with cow's milk. The paste should be applied over the vertex of the scalp and allowed to remain for some time. This procedure induces sleep by reducing the vitiated vadham and pitham. It is believed to have a calming effect on the body and help relax the mind.

Ennaikuliyaal: It is nothing but a oil bath. Medicated oils like Ashwaganda bala lakshathi thylam, sirusanthanathi thylam are applied all over the scalp and gentle massage is done to soothe the body and relax the mind. It is believed that these oils help to balance the three doshas in the body - vata, pitha and kapha.

Table 1: Varmam point used for insomnia

S. No.	VARMAM FOR INSOMNIA	
1	Kondaikollivarmam	Head Massage 1
2	PatchinemaVarmam	Thilarthakaalam
3	Patchi Varmam	Puruva varmam
4	Thilartha Kaalam	Natchathira Kaalam
5	Puruva Varmam	Annan Kaalam
6	Natchathira Kaalam	Chunnambu Kaalam
7	Annan Kaalam	Poigai Kaalam
8	UrakkaVarmam	Sevi kutri Kaalam
9	Chunnambu Kaalam	Urakka Kaalam
10	Poigai kalam	Ottuvarmam
11	Kaakattai kalam	Patchinemavarmam
12	Seerumkolli	KondaikolliVarmam
13	PidariVarmam	Seerumkolli
14	Sevi kuttri Kaalam	PidariVarmam
15	Porchaivarmam	Porchai Kaalam

Tharai: Medicated oil, decoction is dripped over the forehead, particularly at a certain varmam point. This process of pouring oil on the forehead is called Tharai and it is said to provide relief from headaches, insomnia, mental strain and stress.

Thokkanam: Thokkanam is a type of oil massage therapy that involves rhythmic pressing, rubbing and manipulating the body with medicated oils.

Ayurveda:

Ayurveda is another system of medicine with Indian origins that has been practised for over a thousand years. It lays great importance on living in harmony with the Universe and harmony of nature and science. The fundamental theory states that whatever is present in the universe (the macrocosm) should also be present in the body, and thus serves as the primary basis for the foundation (the microcosm). Prithvi, which translates to "earth," Jala, which means "water," Teja, which means "fire," Vayu, which means "air," and Akash, which means "space or ether," are the five fundamental components that are said to make up the cosmos. They combine to

produce what are known as the "Tridoshas" (humours), which are referred to as vata, pitta, and kapha. The human body is developed from them, and it is comprised of these fundamental ingredients. The fundamental psychological and physiological processes in the body are governed and controlled by these humours. The term "healthy condition of the body" refers to a situation in which the three doshas are in optimal balance with one another. The presence of illness is certain to follow any disruption of this homeostasis, regardless of the cause (Sharma *et al.*, 2019).

Except for a few differences, the basic principles of Siddha and Ayurveda are indistinguishable. Siddha medicine recognises the predominance of vata, pitta, and kapha in childhood, adulthood, and old age, whereas Ayurvedic medicine recognises the predominance of kapha, pitta, and vata in childhood, adulthood, and old age, respectively (Pokharel and Sharma, 2010).

In ayurveda, Anidra is considered a disease belonging to the category of Nanatmaja Vatvyadhi. According to Acharya Charak, a

Table 2: Non-Pharmacological Interventions

S. No.	Non-Pharmacological Interventions	Therapeutic Procedures
1	<i>Nasya</i>	<i>Nasya</i> (nasal medication) which is one among <i>panchakarmas</i> , the medicated oil administered through nostrils is beneficial for <i>Anidra</i> . Nasal passage is a gate way to <i>sira</i> (blood vessels) which carries the medicated oil to the head and enhances <i>agni</i> (digestive fire) helps in purifying body channels thus providing relief from <i>Anidra</i> . <i>Nasya</i> is beneficial for people with <i>Kapha dosha</i> .
2	<i>Shiro Abhyang</i>	It is massaging technique. In this technique medicated oil is applied on the scalp and gentle massage is given.
3	<i>Padabhyang</i>	<i>Padabhyang</i> is a form of <i>Abhyanga</i> that involves massaging the feet with medicated oil, creating warmth in the feet which helps in rejuvenating the body by reducing stress and induces sleep.
4	<i>Utsadana</i>	<i>Utsadan</i> is a process of applying herbal powders as medicated pastes and oils all over the body in order to reclaim altered <i>dhosha</i> .
5	<i>Chakshu Tarpana</i>	It is unique procedure where the herbal infused <i>ghrita</i> (ghee) is placed over the eye for the specific period of time.
6	<i>Shiro Lepa</i>	<i>Shiro Lepa</i> is an <i>ayurvedic</i> procedure that involves the application of medicated pastes over the forehead, which helps in calming and relaxing the nervous system, provide relief from stress and induce sleep.
7	<i>Vadana Lepa</i>	Application of medicated paster over the face.
8	<i>Murdha Taila</i>	calming sleep is achieved by pouring oil over the head and massaging it into the scalp
9	<i>Karna Purana</i>	It is unique technique where medicated oil or ghee administered into the ear canals, which helps in reducing stress and anxiety and induce sleep
10	<i>Shiro Basti</i>	This technique involves the retention of lukewarm medicated oil or milk over the head to nourish and relax the mind
11	<i>Shirodhara</i>	This technique involves pouring a steady stream of medicated oil or milk over the forehead, which helps to calm and relax the mind, providing relief from stress and insomnia

person's life and death, happiness and misery, appropriate and improper growth, strength and weakness, virility and impotence, intelligence and non-intellect, and intellect and non-intelligent rely on the quality of his or her sleep. Nidra is caused by Sharirik dosha Kapha and Mansik

dosha Tama, hence any factor that decreases kapha and Tamo guna in the body results in anidra. The altered dhosha in Anidra can be altered by external therapeutic measures such as Virechan, Snehapan, Abhyanga and Panchakarma (Table 2).

Unani:

Hippocrates, a great Greek philosopher and physician who lived between the years 460 and 366 BC, is renowned as being the one who first brought the Unani system of medicine to the world. Hippocrates postulated the theory known as the "humoral theory" for the treatment of ailments. According to this theory, imbalance of the four humors, which were phlegm, blood, yellow bile and black bile attributes to pathological conditions. According to Unani system of medicine sehar (insomnia) can be defined as 'sleeplessness' or 'awakening' which occurs mainly as a result of imbalance in the temperament of brain due to excess of yaboosatwahararat and secondarily due to some other causes such as medical or mental disorders. Excess of awakening is known as sehar; sleeplessness and excessive awakening are called sehar and sehar is bedariemufrat (prolonged awakening). Insomnia is both a risk factor for depression and a consequence of depression. Insomnia is a predisposing factor for onset and recurrent major depressive disorder (MDD). Both disorders are highly prevalent and frequently can occur at any age but old age and women are at high risk. Insomnia can be classified into two types based on its cause: (i) primary insomnia (psycho-physiological, paradoxical, or idiopathic), which has no known cause; and (ii) Secondary insomnia: (medical, psychiatry illness) here the cause of insomnia is known. According to Unani system of medicine there are three types of possible causes which can be broadly classified as: (a) Ikhtiyariasbaab (voluntary causes) which are voluntarily and under our control; (b) Aarzasbaab (temporary causes) which are temporary in origin and when removed or decreased sleep is restored e.g. stress; (c) Marzi asbaab (diseases) which are causes because of diseases e.g. mania (Mushtaq *et al.*, 2014).

Natool therapy in an ancient unani technique in which the medicated oil or decoction is pored from certain distance. For insomnia medicated oils like Roghan LaboobSab'a h, Roghan Kahu are

heated and used. Patients was asked to lie in a supine posture then the lukewarm oil was poured on the forehead over the temporal region with eyes closed using the gauze piece. This procedure should be done for 15 - 30 min. This procedure was followed by dalk. Dalkis nothing but a gentle massage that was done on the temporal region for 2-5 min. There is certain medicated paste applied over the forehead topically can induce sleep (Ain *et al.*, 2020).

Yoga and Naturopathy:

Yoga is originated in India in ancient times. Through its therapies and diagnosis based on pulse and analysis of Tridosha state of an individual, it suggests meditative exercises and lifestyle management to obtain tranquillity and improve health. The Asanas (postures) of Yoga are applied in various clinical and nonclinical conditions for curing various physical and emotional conditions. Naturopathy originated in Germany in the 19th century and today it is practiced in several countries. It is not an ancient system of medicine but some practitioners who practice traditional medicine sometimes use Naturopathy in combination to the major system. The Naturopathic system is based upon using the curative power of nature in combination with the traditional and modern techniques to help restore good health. For insomnia they have various non-pharmacological like yoga, asana, mud pack and plantain leaf bath (Table 3).

Mud therapy: It causes cooling and assists in bringing down your body temperature in case of fever. Mud therapies are exceptionally good and aid in reducing headaches, insomnia, hypertension, migraines as well as digestive dysfunctions by overcoming tension and strain. Studies have shown that mud therapies can help improve the quality of sleep and reduce sleep disturbances, especially for people with mental health issues.

Plantain leaf bath: In this type of bathing procedure, the body is covered with a plantain leaf and exposed to sunlight. The beneficial effect

Table 3: Asana

Yoga	Other Names	Procedure
<i>Shavasana</i>	Corpse posture	It is a lying posture with the eyes closed, the body relaxed and still, and the arms and legs spread comfortably
<i>Vajrasana</i>	Thunderbolt posture	kneeling posture, in which the practitioner is able to maintain an upright spine.
<i>Bhujangasana</i>	Cobra posture	It is practiced from a prone position, in which the legs are outstretched and the torso is lifted with support of the hands.
<i>Padmasana</i>	Lotus posture	It is a seated posture, in which the legs are crossed and the feet are positioned on top of the opposite thighs at the hip crease.
<i>Sarvangasana</i>	Shoulder stand posture	is an inverted yoga posture performed by stretching the legs up and balancing the entire body on the shoulders
<i>Halasana</i>	Plow posture	Lying posture with both hands on the floor and the trunk is flexed forwardly over the head
<i>Dhanurasana</i>	Bow posture	It is a posture where one lies on the stomach and bends their back and legs to make the shape of a bow
<i>Shalabhasana</i>	Locust posture	Lying posture with upper and lower part of the body bends backwardly with support of abdomen
<i>Yoganidra</i>	Lotus posture	It is a seated posture, in which the legs are crossed and the feet are positioned on top of the opposite thighs at the hip crease.
<i>Gomugasana</i>	Cow face posture	Sitting posture with entirely stretched body
<i>Uttranamandukasana</i>	Upright Frog	hold the head by the elbows and stand up like a frog

of a plantain leaf bath includes detoxification of the body, weight loss, treats skin diseases, relieves stress, and induces sleep.

Conclusion

There are a number of pharmaceutical firms that have developed a wide range of pharmaceuticals to assist with the treatment of insomnia; however, these medications could have undesirable side effects or cause dependency on them. As a result, individuals who are looking for alternatives to pharmaceutical treatments have been increasingly turning to natural and herbal therapies as a safer option. Herbal therapies that

do not involve drugs are an effective, safe, and less expensive alternative to drug treatments for insomnia. The integrated approach of these interventions may have a positive effect on the management of insomnia. By incorporating dietary, exercise, and lifestyle changes along with natural therapies as discussed above, individuals may experience better sleep quality without the fear of side effects or dependency on pharmaceuticals.

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