

# Treatment of *Tūkkamiṇmai* (Insomnia) Through Siddha Yoga Practice *Tirumūlar Piraṇāyāmam*: A Case Report

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## ABSTRACT

**Introduction:** *Tūkkamiṇmai* (insomnia) is an emerging factor in this current scenario among adults. In India, sleeplessness is more prevalent among adolescent age group population because of modified life styles activities. 29 years old female visited the Department of Siddhar Yoga Maruthuvam of Government Siddha medical college with complaints of sleeplessness (*Tūkkamiṇmai*) over the period of past 3 months. **Methodology:** Her pulse (*Nāṭiparicōṭanai*) was predominating in *Pitta vātam*. The Pittsburg Sleep Quality Index (PSQI) and Epworth Sleepiness scale has been used as a standard tool to measure the status of sleep and sleepiness status respectively. Diagnosed as *Tūkkamiṇmai* (insomnia) and provided *Siddhar Tirumūlar Piraṇāyāmamas* recommended by Siddha text *Siddhar Sirappu Maruthuvam*. **Results:** On seventh day of practicing of *Tirumūlar Piraṇāyāmam*, her sleep got to normal without any disturbances and followed the case of 3 weeks. After starting the intervention, she got a good sleep from the 1<sup>st</sup> week itself. In follow-up, the quality of sleep and sleepiness stage improved well in the 3<sup>rd</sup> week. The Sleep Quality Scale and Sleepiness Measurement Questionnaire was used before and after the practice of *Tirumūlar Piraṇāyāmam* for sleeplessness. **Conclusion:** This study provides us a lead to initiate large-scale studies (case series, observational studies, RCTCs etc) for sleep regulation with Yoga. The Siddha *Tirumūlar Piraṇāyāmam* practice could make a definite impact on sleep regulation centers and neuronal systems over the body. Through holistic care, Siddha *Yogam* along with proper clinical history, clinical diagnosis, the emerging sleep disturbances and rehabilitation from electronic syndromes are not a height for the Siddhar Yoga *Maruttuvam*.

**KEYWORDS** *Cittar Yōka Maruttuvam*, Electronic screen syndrome, Epworth Sleepiness scale, Pittsburgh sleep quality index, *Tirumūlar Piraṇāyāmam*

## 1. INTRODUCTION

*Tūkkamiṇmai* or *Nittiraipāṅkam* (insomnia) is an emerging factor in this current scenario among adults. In India, Sleeplessness is more prevalent among adolescent age group population because of modified life styles activities.<sup>[1]</sup> Insomnia is a clinical condition of difficulty in falling asleep or being awaken over the night. In this condition, the concerned

patient may be associated with few sleeping disorders such as restless leg syndrome and nightmares etc. Insomnia is classified by International Classification of diseases (ICD 10) under Episodic and paroxysmal related sleeping disorder (G.47).<sup>[2]</sup>

### 1.1 *Nittiraipāṅkam* Siddha

According to Siddha hygiene and preventive medicine (*nōyillāneri*), *Nittiraipaṅkam* is characterized by poor quality of sleep which is mainly due to disturbances. This can be directly correlated with the term insomnia<sup>[1]</sup>. Apart from this, Siddha literatures '*nōyillāneri*' describes few more clinical conditions of Sleeping disorders such as *Nittiraīnmai* (complete absence of sleep), *Anittirai* (hypersomnia), *Pakalnittirai* (sleeping in daytime) etc.<sup>[3]</sup>.

Sleep disorder has been classified by International Classification of Sleep Disorders (ICSD) as more than 50 types<sup>[2]</sup>. Insomnia is one of the major disorders under this category. The adult age group between 18-30 years were mostly affected for this insomnia associated symptoms. Approximately 20-22% of global population are affected by Insomnia disorder. In India, nearly 28% of population suffer from insomnia and 10% are under occasional insomniac symptoms. Majorly urban population has major prevalence than that of population from rural sector<sup>[4]</sup>.

### **1.2 Fourteen vital reflexes of body**

In Siddha system of medicine, fourteen involuntary reflexes listed are Abanan, Urination, bodily faecal matter, hunger, thirst, Sneezing, Cough, Vomiting, Yawning, lacrimation, Sleep, Sperm/Ovum and breathing<sup>[3]</sup>. These reflexes are considered as involuntary reflexes which are not advisable to intact voluntarily, which may lead to health consequences. Out of the fourteen reflexes, sleep is also one of the important factors and the consequences of altered sleep was well documented in Siddha literature. The health consequences such as heaviness of the head, altered hearing may lead to deafness in chronic habitual and altered speech (Aphasia).

The diagnosis was arrived based on WHO guidelines for Insomnia related behavioural science. The basic criteria for the gold standard

diagnosis used for the study was a) Complaint of poor sleep pattern expressed by patients b) Difficulty in falling asleep within 30minutes c) awakening during night sleep at least for 2 times d) day time irritability, drowsiness and fatigue e) any of one category like physical problem, lifestyle changes or on any psychiatric treatments.<sup>[5]</sup>

The insomniac patient may suffer from fatigue and physical tiredness on the next day. The concept of *Tokkaṇam* (Bodily massaging with oil application)<sup>[6]</sup> has been recommended by the literature to rejuvenate the bodily circulation system. Eventually this supplies more oxygen components to all parts of body. Based on this concept, *Tirumūlar Piraṇāyāmam*<sup>[7-8]</sup> was advised for this case.<sup>[9]</sup>

## **2. METHODOLOGY**

### **2.1 Patient Information**

A case of 29 years old female from Tirunelveli city, working as an IT professional, Unmarried and from a Middle-class family<sup>[8]</sup>. The case came with the complaint of sleep disturbance for a period of past 4 months. Her complete gynecological profile was normal. There is no such notable change in her menstrual health, not a known case of diabetes mellitus, hypertension, asthma and thyroid disorders. Blood pressure was normal in state.

The Patient had the habit of consuming fast food twice a week and used to work with desktop for more than 8-10 hours, she used her mobile phone for at least 2-3 hours during night-time. No significant family history. Her appetite was very poor and for most of the time she skipped the night meal because of fear of putting weight, but she weighed 62kg. There is no psychological related history.

Previously she had continued her treatment in a private allopathic hospital in Tirunelveli and she was treated with sleeping pills for a period

of two to two and half months. But she got good sleep when using these drugs. During the intermediate skipping of tablets, she had persistent sleeplessness. After the withdrawal of the medicines there was a relapse after two weeks. When using the sleeping pill (Lorazepam 1mg, aCNS (Central nervous system) depressant, she had parasomnia (feeling of drowsiness) in the daytime mostly during working hours).

### 2.2 Clinical Findings

Primarily carried out the Siddha line of diagnostic tool namely eight fold diagnostic methods which are as follows: *Nāṭiparicōṭaṇai* (pulse reading), *Sparicam* (skin tone), *Nā* (tongue), *Nīram* (colour of skin), *Molli* (speech), *Villi* (eyes), *Malam* (faecal matters) and *Mūttiram* (urination).<sup>[10]</sup> Dryness/mild redness of the eye was observed and she complained of the eye irritation (probably due to dryness) when falling asleep under the ceiling fan on interrogation. The Single case is from a

*Marutam* (Ancient geographical classification) geographical area presented with *Pitta vāṭamin Nāṭiparicōṭaṇai* (Traditional Pulse reading

### 2.3 Timelines

On April 2, 2019 she has visited *Siddhar Yoga maruthuvam* department for Insomnia and she had withdrawn her allopathic CNS depressant medicines on March 15, 2019 and the diagrammatic representation of the study is mentioned in figure 1.

### 2.4 Laboratory Assessment

She was checked for routine haematology parameters and the results were completely normal. Her haemoglobin was 13.5mg/dl. Based on WHO sleeplessness criteria, the diagnosis was confirmed as mentioned in the Table 1.

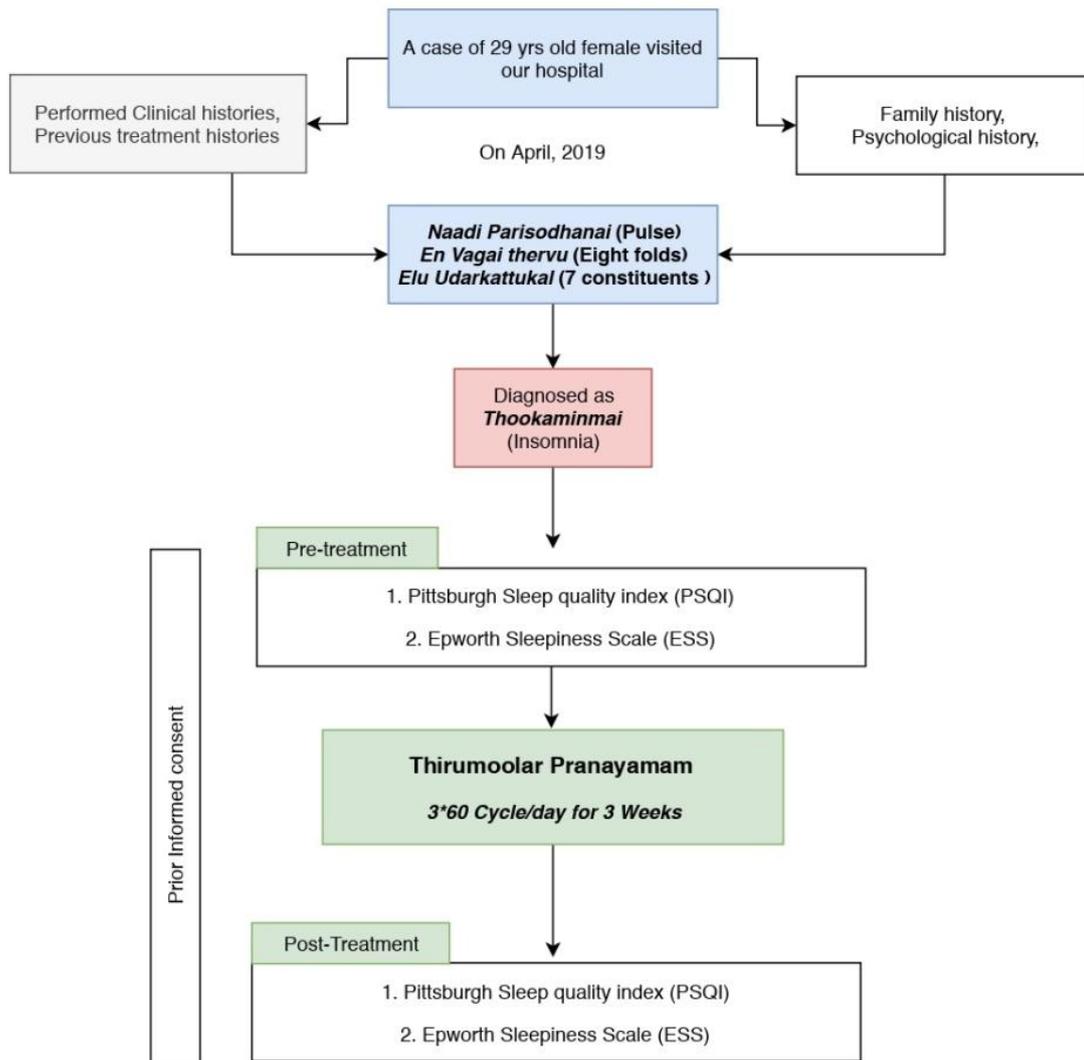
**Table 1. Assessment of WHO sleeplessness/Insomniac criteria**

Criteria No.	Criteria factors	Present or Absent
1	Complaint of poor sleep pattern hardly expressed by patients	Present
2	Difficulty in fall asleep within 30minutes	Present
3	Awakening during night sleet at least for 2 times	Present
4	Day time irritability, drowsiness and fatigue	Present
5	Any one category like physical problem, lifestyle changes or on any psychiatric treatments.	Present

**Table 2. Yoga Protocol**

Technique	Yoga or procedure name	Cycles	Duration (in minutes)
Warming up	<i>Curiyanamaskaram</i> (Sun salutation)	Once daily (between 6AM-7AM)	3-4
Loosening exercise	Relaxing stretched legs and rotation of hands from sitting posture	Before performing Warming up procedure and Pranayama Yoga practice	3
Yoga Practice	<i>Tirumular Piranayamam</i> <sup>[9]</sup>	60 cycle rotations Thrice daily (7AM, 11AM, 5.30PM preferable before food)	6-9
Therapeutic Bathing	<i>Ennaikuliyal</i> with <i>Chukkuthylam</i> , twice a week	Application for 30-40 minutes and advised to take bath in mild-hot water	30-40 (oil application over the head)

**Figure 1. Case reporting and treatment procedure**



**Table 3. Guide for evaluation of Sleep quality based on PSQI Scale**

Final Score of PSQI	Comments and suggestions
0-9	The sleep problem will be the severe for the case and definitely the person needs to get some help or counseling.
10-18	The patient has some sleep problem and suggested to examine the sleep habits
19-27	The sleep is in good shape and advice to adjust the sleep schedule and try for better more.
28-36	The sleep is in good shape and advice to follow as it is.

**Table 4. Guide for evaluation of Sleepiness through ESS index**

Total score of ESS	Comments
0-7	Unlikely the patient has abnormally sleepy.
8-9	Patient has an average amount of daytime sleepiness.
10-15	Excessively sleepy depending on the situation and suggestion to seek medical attention.
16-24	Excessively sleepy and suggest for definite medical attention

## 2.5 Therapeutic Intervention

Non-Pharmacological therapeutic interventions like *Yogasanam* and therapeutic oil bathing procedures was advised for the case for 3 weeks. *Chukkuthylam* was selected based on three humour concept which eventually stabilizes altered *tiritōtam* from the body (Table 2). Oil bathis one of the general habitual practice mentioned in Siddha literature to maintain healthier life (*Noi Anugavithi*). For the patient to cope up with lifestyle based on *Siddha* verse (*Tamil*) *Vaigaraiyil Thuyilezal*, literally means to wake up in the early morning), a treatment plan was made with *Cūriyanamaskāram*(Sun salutation). The patient adopted the scheduled intervention as mentioned in the Table 2.

## 2.6 Assessment tool

Before the therapeutic intervention, the participant was subjected to Pittsburgh sleep quality index (PSQI),<sup>[12]</sup> which is a sleep condition indicator (composed of 9 standardized questions), developed by University of Oxford to measure the Quality of Sleep in night time.<sup>[13]</sup> Each question carries 0-4 point (a scale of 0,1,2,3 and 4) and the final summarized scoring could be ranging between 0-36 Points followed by the sleep quality has been categorized as mentioned in table 3.<sup>[14]</sup>

In addition, the Epworth Sleepiness Scale (ESS consist of 8 simple questions) was used to measure the sleep feel in day time.<sup>[15]</sup> Whenever the night sleep get disturbed, relatively there is a chance of getting tired and falling asleep or sleepiness in the day time.<sup>[16]</sup> Based on this, the ESS was used to measure the state of day time sleepiness. It consists of preferable 8 different situations (8 questions) in which the rate of tendency to become sleepy or chance of dozing are measured using the scale ranging from 0, no chance of dozing/Sleepiness to 3, high chance of

dozing/Sleepiness (Table 4). The score ranged between 0-24.<sup>[17]</sup>

## 2.7 Information retrieval

The information from PSQI and ESS scale was collected through face to face interview and filled by the physician based on her reply to the questions. This case report was drafted based on Standard Reporting CARE guidelines (CASeREporting).

## 3. OUTCOME AND FOLLOWUP

The outcome of the therapeutic yoga intervention "*Siddha TirumūlarPiraṇāyāmam*" was measured based on the Pittsburgh Sleep Quality Index (PSQI) for Quality of sleep and Epworth Sleepiness Scale (ESS) for sleepiness. In PQSI scale, score of 14 (46.67 %) in Pre-treatment and score of 24 (80%) (Figure 2), in post treatment was observed, the quality of sleep gets increased, after the practice of *TirumūlarPiraṇāyāmam* and oil bathing procedure when compare to the pre-treatment score tabulated in Table. 5. At the same time, the sleepiness scale score was 43.3% before the treatment, felt sleepy during daytime and during the activities like watching television, sitting, and working etc. Whereas Post treatment survey shows 23.3%, the sleepiness score reduced as well as patient felt better at this time. During this treatment, she was advised to visit once every seven days at the Out-patient department of Siddhar Yoga Maruthuvam, Government Siddha medical College, Palayamkottai, Tamilnadu, India.

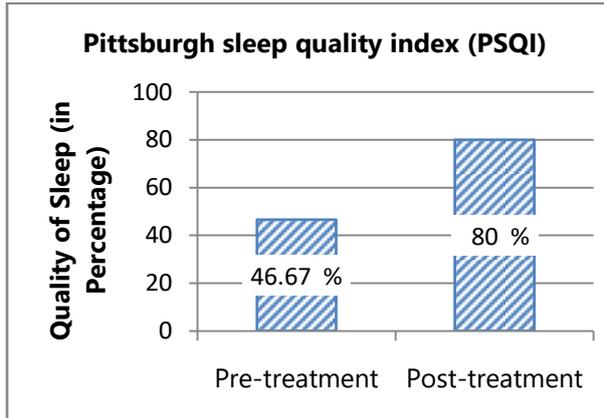
### 3.1. Adverse and unanticipated events

During the treatment process, no adverse events were observed. Throughout the follow-up period, we did not notice any untoward symptom.

**Table 5. Outcome score of *Piraṇāyāma* intervention for Sleeplessness and sleepiness conditions**

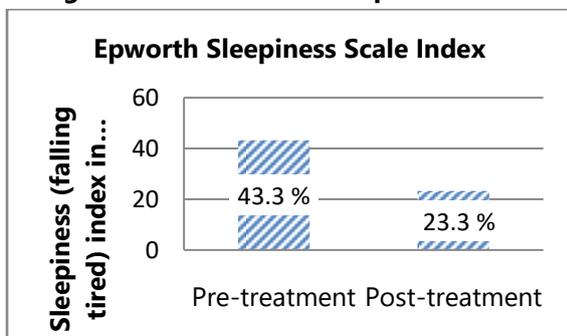
Factor	Standard Scales	Pre-treatment score	Post treatment score
Quality measurement of night sleep	Pittsburgh sleep quality index (PSQI)	14 (46.67 %)	24 (80%)
Measurement of Sleepy feel status in day time	Epworth Sleepiness Scale (ESS)	13 (43.3 %)	7 (23.3 %)

**Figure 2. PSQI Score on Quality of sleep**



Pittsburgh sleep quality scale show the improvement after the treatment (34 %).

**Figure 3. ESS Scale on Sleepiness index**



Epworth Sleepiness scale shows that reduction of sleepiness symptoms from 43% to 23%.

### 3.2. Informed consent

Informed consent was obtained from the patient.

### 4. CONCLUSION

The concept of *Tirumūlar Piraṇāyāmam* is a hidden treasure for Siddha physician which is highlighted by sage *Tirumūlar* in his *Tirumantiram*. Lot of research works has been

going on this *Tirumūlar Piraṇāyāmam* over the globe. This case report shows the improvement and could alleviate Sleep associated symptoms and stress etc. Furthermore, clinical validation studies are to be carried out in near future.

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**CONFLICT OF INTEREST** None declared

### CONTRIBUTORS

First Contributor executed the study and drafted the manuscript and Second contributor designed the concept and literary review. Third contributor guided the study and reviewed the final manuscript.

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