



ASSESSING THE EFFECTIVENESS OF *WITHANIA SOMNIFERA* (AMUKKURA CHOORANAM) IN THE TREATMENT OF INSOMNIA (THOOKAMINMAI)

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ABSTRACT

Background: *Withania somnifera*, commonly known as Amukkura or Indian ginseng, is a revered herb in Siddha medicine, celebrated for its diverse medicinal properties. Its therapeutic potential, spans various health domains. Insomnia is one of the common disorders having significant long-term health consequences. Insomnia can occur as a primary disorder or, more commonly, it can be co-morbid with other physical or mental disorders. The persistent lack of sufficient sleep can result in irritability mood swings, giddiness, difficulty in concentration, fatigue, indigestion, decreased performance in daily activities. It is estimated that the majority of people with insomnia (approximately 75%–90%) have an increased risk for co-morbid medical disorders, such as conditions causing hypoxemia and dyspnea, gastroesophageal reflux disease, pain conditions, and neuro degenerative diseases. **Objectives:** To evaluate the effectiveness of *Withania somnifera*, Amukkura chooranam in the management of Insomnia (thookaminmai) using Pittsburgh Sleep Quality Index (PSQI). **Design:** Descriptive study **Result:** The sample consisted of 10 patients with the PSQI score greater than 5 with an average of 15 and subsequently decreased during the study. The drug *Withania somnifera* is effective in improving sleep. **Conclusion:** The drug may hold benefit for sleep related disorders; hence the drug is therapeutically effective in the treatmentof insomnia.

KEYWORDS: *Withania somnifera*, Amukkura chooranam, Insomnia, PSQI.

INTRODUCTION

Insomnia is one of the common disorders having significant long-term health consequences. Insomnia can occur as a primary disorder or more commonly it can be co-morbid with other physical or mental disorders.

The term insomnia will be used as a disorder with the following diagnostic criteria:

- (1) Difficulty in falling asleep, staying asleep or non-restorative sleep
- (2) Difficulty is present despite adequate opportunity and circumstance to sleep;
- (3) Impairment in sleep is associated with daytime impairment or distress and
- (4) Sleep difficulty occurs at least 3 times per week and has been a problem for at least 1 month.^[1]

A disorder is a condition associated with negative consequences, and importantly, these consequences are not a normal result of the condition but rather the result of some sort of pathological response.

The persistent lack of sufficient sleep can result in irritability mood swings, giddiness difficulty in concentration, fatigue, indigestion, decreased performance in daily activities. Rather insomnia may be caused due to stress, depression and anxiety.

The reported prevalence of insomnia in South India is 9% in the general population and about 30% suffer from occasional insomnia. Approximately 30% of a variety of adult samples drawn from different countries report one or more of the symptoms of insomnia.

Difficulty in initiating sleep, difficulty in maintaining sleep, waking up too early, and in some cases, non-restorative or poor quality of sleep.^[2]

Prevalence is more in women and older people. The increased risk in the elderly may be due to the partial decline in functionality of sleep control systems. Another significant contributor in the elderly is due to the presence of co-morbid conditions. In women, insomnia is more prevalent with both the onset of menses and menopause.^[3]

The significant risks for insomnia include co-morbid conditions, psychiatric disorders, and working night or rotating shifts. It is estimated that the majority of people with insomnia (approximately 75%–90%) have an increased risk for co-morbid medical disorders, such as conditions causing hypoxemia and dyspnea, gastroesophageal reflux disease, pain conditions, and neuro degenerative diseases.^[4]

Siddha system is one of the ancient and codified medical systems of India. Fundamental principles of Siddha include theories of *Pancha Boothas* (five elements), *Mukkuṭrangal* (three humours) and *Arusuvai* (six tastes). Siddha system was established by 18 great *Siddhars*. *Siddhars* listed the diseases of mankind as 4448 based on *mukutrami.e., Vali, Azhal, Iyam*. According to the Siddha system, diet and lifestyle play a major role in maintaining promotion of health and in the management of diseases. In the current world, life style modification like food habit, lack of exercise, stress factor causes many diseases. Insomnia is one among them. It may be correlated to *Thookaminmai* or *Nithirai inmai* in siddha system of medicine. T.V. Sambasivam Pillai Dictionary has explained '*Thookaminmai*' as want of sleep or morbid sleeplessness.^[5]

The siddha formulation selected for the study is Amukkura chooranam, mentioned in Gunapadam part one – Mooligai.

OBJECTIVES

To evaluate the effectiveness of Amukkura chooranam in the management of thookaminmai (Insomnia) using Pittsburgh Sleep Quality Index (PSQI).

LITERATURE REVIEW

In siddha hygiene and preventive medicine Noi Illa Neri, NITHIRAIBANGAM is Ncharacterized by poor quality of sleep and this term Nithirai bangam can be directly co related with Insomnia.

MEDICINE THAT WAS USED FOR THE STUDY

Ingredients : Rhizome of Amukkura chooranam (*Withania somnifera*)
 Dose : 4 Grams - OD after food
 Duration : 30 Days
 Adjuvant : Milk
 Action : Urakkamundakki (Sedative)
 Reference : Gunapadam Part 1 – Mooligai^[6]
 Publisher : Indian Medicine Homeopathy
 Department
 Year : 2002,
 Pg No : 29

DRUG REVIEW-SIDDHA ASPECT

Botanical name : *Withania somnifera*
 Tamil name : Amukkura kizhangu
 English : Winter cherry

INDICATION

- Cures Vatha, pitha and kapha disorders.
- Strengthens the body
- Increases the sperm count

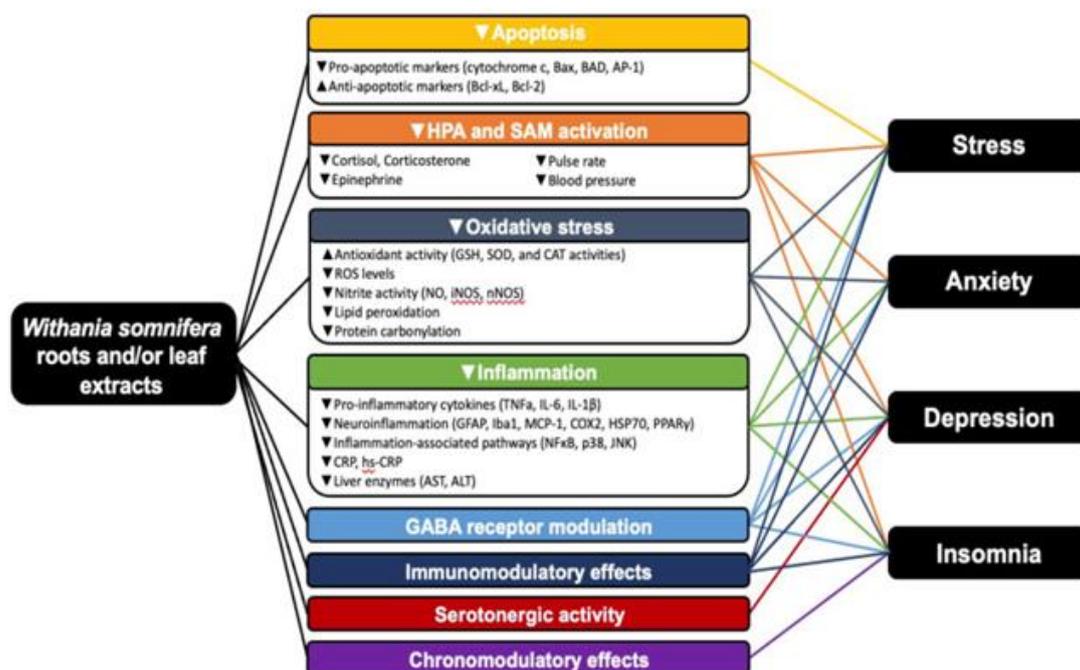
DRUG REVIEW – SCIENTIFIC ASPECT

Several studies have been made increasing the sleep quality.

Withania somnifera is characterized by a rich phytochemical composition. The active substances that play a crucial role in pharmacological actions are Withanolides and alkaloids.

This drug possesses an invitro study with adult male rats. Indicators of oxidative stress were measured by spectrometry while serotonin and dopamine levels are measured by ELISA. A significant reduction in the free radicals and lipid peroxidation level and increased antioxidant enzyme levels were observed in group treated with amukkura.^[7]

The stress factor also plays a vital role in the sleeplessness. The anxiolytic effects may be due to several mechanism including the reduction of glucocorticoids and immune modulations. *Withania somnifera* is found to reverse the stress induced adrenal cortisol content. In addition to the peripheral cortisol and corticosterone, found that the hydroalcoholic root extract of *Withania somnifera* decreased the hippocampal levels of corticosterone in a rat model of hypobaric hypoxia induced stress.



INGREDIENTS

Withania somnifera - Amukkura.

MATERIALS AND METHODS

Methodology:

Design	: Descriptive study
Type	: Case series
Place	: OPD, GSMCH, Palayamkottai.
Period	: 4 months
Sample Size	: 10 pts

ELEGIBILITY CRITERIA

INCLUSION CRITERIA

- Age- 20-70 Years.
- Gender – Male/female/Transgender
- PSQI from 5 to 21.

EXCLUSION CRITERIA

- K/H/O Uncontrolled hypertension
- K/H/O Thyroid dysfunction.
- K/H/O Chronic Renal Failure
- K/H/O Neurological disease
- Coronary Artery Disease
- Pregnancy and Lactation
- Malignancy
- Drug addicts, Drivers and shift workers

WITHDRAWAL CRITERIA

- Intolerance to drug and development of ADR during the trial
- poor patient compliance (i.e.): unable to comply even after 2 follow-ups (14 days)
- Patient turning unwilling to continue during clinical trial.
- Increased in severity of the symptoms consistently for 2 follow-ups days(14 days)

PURCHASE OF THE MEDICINE

The medicine was purchased from the well reputed GMP pharma.

SUBJECT SELECTION

Patients reporting with the symptoms of sleepless along with

1. Difficulty in falling asleep, staying asleep.
2. Difficulty in falling asleep, despite having adequate circumstances to fall asleep.
3. Impairment in sleep associated with daytime impairment or distress
4. Sleep difficulty for at least 3 times per week and for at least 1 month.

TEST AND ASSESSMENT

- CLINICAL ASSESSMENT
- PSQI

THE CLINICAL ASSESSMENT

- Difficulty in falling asleep at night
- Intermittent sleep disturbances
- Day time tiredness
- Irritability
- On going worries about sleep
- Waking up too early not feeling well, rested after a well rested night sleep.

PITTSBURGH SLEEP QUALITY INDEX

The Pittsburgh Sleep Quality Index (PSQI) is a widely used tool in the field of sleep medicine and research to assess the quality of sleep-in individuals. Developed by researchers at the University of Pittsburgh, the PSQI has become a standard instrument for evaluating various aspects of sleep, providing valuable insights into sleep patterns, disturbances, and overall sleep quality.

The PSQI is a self-report questionnaire designed to measure sleep quality over a one-month time interval. It comprises 19 items that fall into seven components: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medications, and daytime dysfunction. Each component is scored on a scale from 0 to 3, with the total score ranging from 0 to 21. Higher scores indicate poorer sleep quality, while lower scores suggest better sleep quality.

SUBJECT STUDY ENROLLMENT

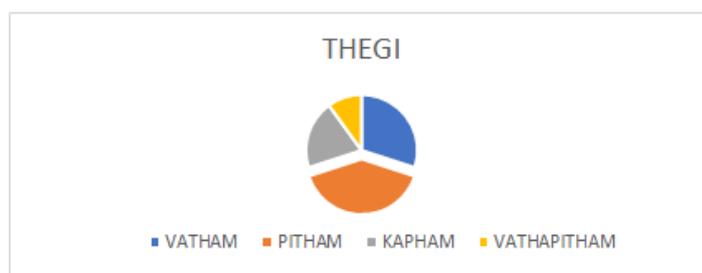
Patient reporting at the OPD with the clinical symptoms of thookaminmai were examined clinically for enrolling in the study based on the inclusion and exclusion criteria. Patients were clearly informed about the study. The trial drug, objectives, outcomes in the language understandable by the individuals.

The consent form was signed by the patient which is bilingual after proper explanation given to the individual. Complete clinical history, complaints, duration, clinical

OBSERVATION AND RESULTS

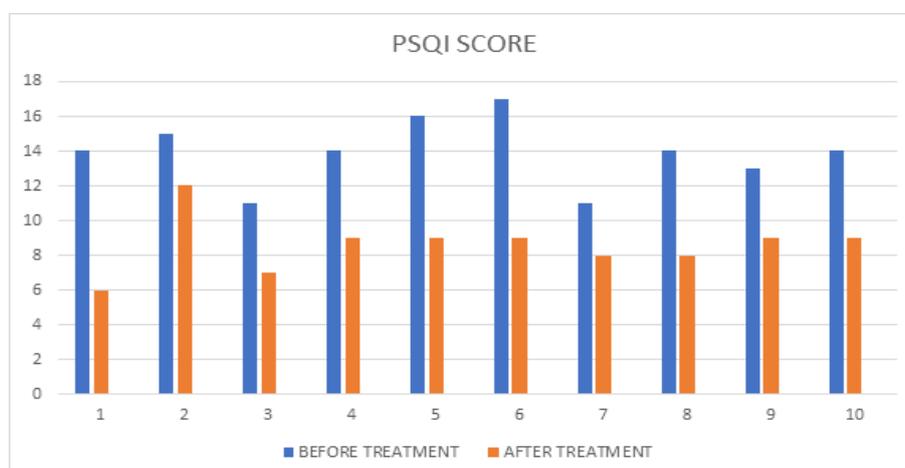
SIDDHA PRINCIPLES

- THEGI



THEGI	NO OF PATIENTS
VATHAM	3
PITHAM	4
KAPHAM	2
VATHAPITHAM	1

PSQI SCORE



Inference: The PSQI score was reduced in all patients after the treatment. The highest reduction was 8 and the lowest was 3. The average reduction score was 5.5.

findings, assessment in PSQI scale was recorded. Patients were prescribed to take the drug regularly with proper diet advice.

CONDUCT OF THE STUDY

10 patients were selected for the study

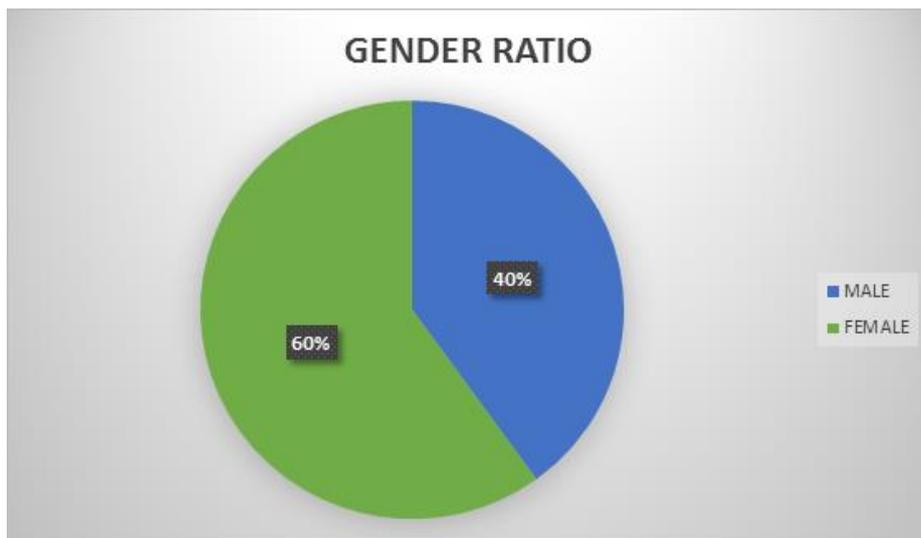
Treatment plan: *Withania somnifera* as fine powder ie., Amukkura chooranam (plain)

DATA MANAGEMENT AND ANALYSIS

Data entry was monitored in the presence of guide under supervision of the head of the department. All the collected data was entered using the MS excel software. The forms were scrutinized by the statistician for logical error and incompleteness of data to avoid bias. The data was statistically analysed using **paired 't' test**.

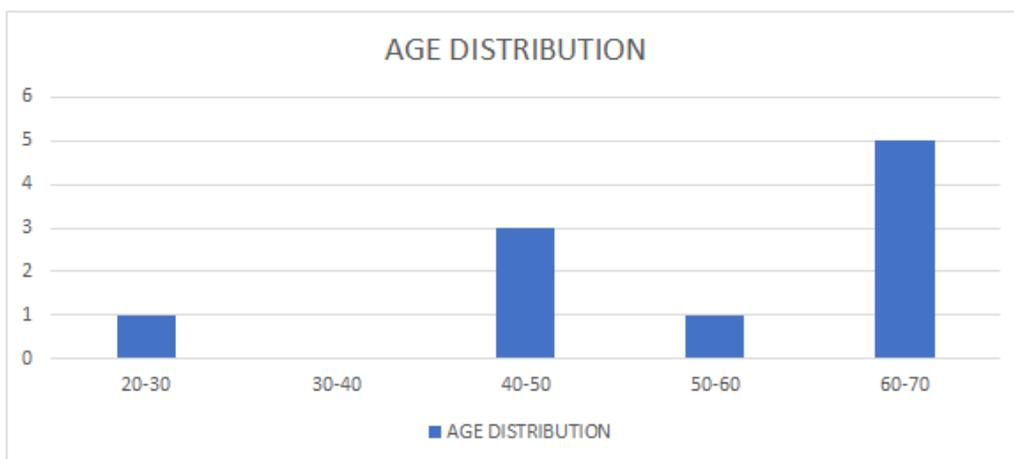
ADVERSE DRUG REACTION

None of the patients developed any Adverse drug reaction.



Gender	No. of Patients
Male	4
Female	6

Inference: Among the enrolled 10 patients, 4 were male (40%) and 6 were female (60%).



Inference: Most of the patients (50%) falls under 60-70 age category. 3 patients (30%) falls under 40-50 age category and 1 patient (10%) falls under 50-60 age category and 1 patient (10%) in 20-30 age category.



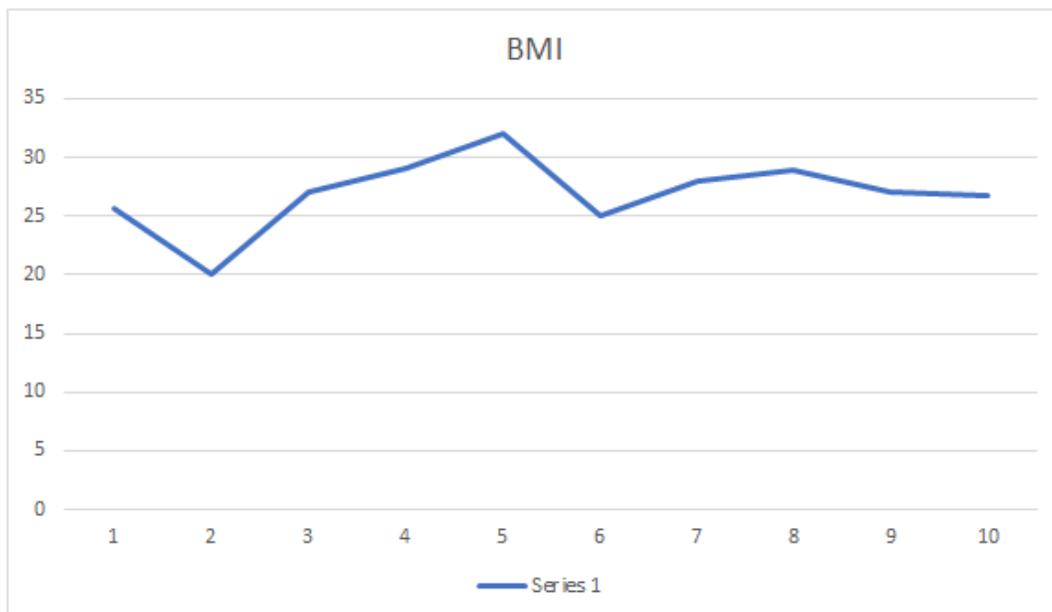
Work	No. of Patients
Skilled	7
Unskilled	3

Inference: Among the enrolled 10 patients, 4 were unskilled workers (40%) and 6 were skilled workers (60%).

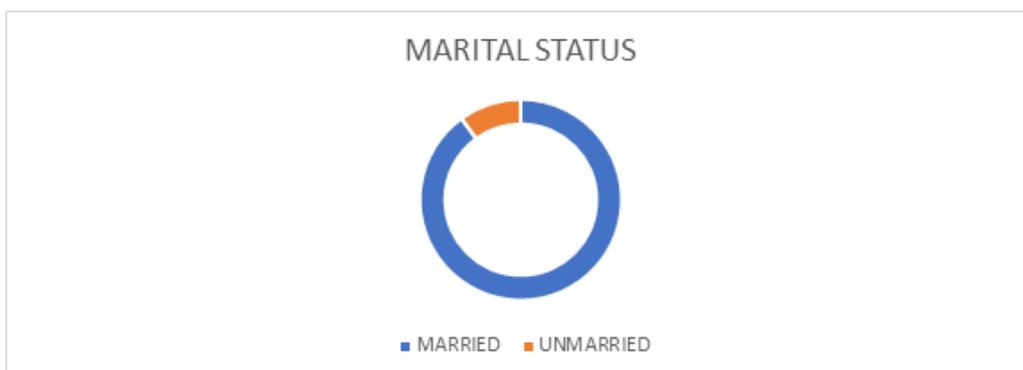
DIET



Inference: all the patients were following non vegetarian diet.



Inference: Among the 10 patients, 9 patients were having a BMI of 25 and above



Inference

Marital status	No. of Patients
Unmarried	1
Married	9

STATISTICAL ANALYSIS

The pre and post treatment scores of both insomnia (PSQI) were analyzed statistically using Paired t test.

Scores	Before Mean	After Mean	SD Difference	T value	p value
PSQI	13.90	8.60	1.889	8.875	< 0.005

** Significant at 95% Confidence interval.

Null hypothesis: There is no statistical difference on scores before and after treatment.

Alternate Hypothesis: There exists statistically significant difference on scores before and after treatment.

Since the P value is less than 0.005, there exist statistically significant difference.

DISCUSSIONS

GENDER

Among 10 cases, *Thookaminmai* was found to be **high in female** 6 cases (60%), when compared to male 4 cases (40%).

Women have better sleep quality compared with men, with longer sleep times, shorter sleep-onset latency and higher sleep efficiency. Despite this, women have more sleep-related complaints than men. The amount of slow-wave sleep decreases with age in men and women. Normal physiologic periods, including puberty, menstruation, pregnancy, and menopause, are associated with alterations in sleep patterns.^[8]

An epidemiological study conducted in Hong Kong also estimated higher prevalence of insomnia in females. The reasons for gender differences of insomnia may include their differences in the prevalence of psychiatric morbidities, symptom endorsement, gonadal steroids, sociocultural factors and coping strategies.^[9]

AGE

The maximum age distribution among the 10 cases was in **60 – 70 age** (50%) category, followed by 40 – 50 age (30%) 50 – 60 age (10%) and 20-30 (10%).

The association between insomnia and impaired quality of life is most pronounced in older age groups. However, the associations with physical and mental health status and those with daytime fatigue do not vary in strength between age groups

OCCUPATION

Among the 10 cases, 70 % of the cases belongs to the skilled workforce. Shift workers were excluded from the study.

BODY MASS INDEX

Among the 10 patients, 9 patients were having a BMI of 25 and above.

DIET, HABIT AND MARTIAL STATUS

All the patients enrolled in the study follows non-vegetarian diet.

Among the 4 male patients, no patients were having a habit of alcohol consumption and smoking. No female patients were reported with alcohol or tobacco consumption and smoking habits. Out of the 10 patients enrolled in the study 9 were married and 1 patient was unmarried.

DISCUSSION ON SIDDHA PRINCIPLES THEGI

According to the texts of *Naadi nool*, *thookam kedal* (Sleep disturbance) is due to the vitiation of *Vatham* and *Kuraintha Thookam* (Reduced sleep) is due to the vitiation of *Pitham*. 4 patients (40%) were found to be having *Pitha* body composition, 3 patients (20%) were having *vatha* body composition, 2 patients (20%) were having *KAPHAM* bodycomposition and 1 patients (20%) were having *VATHAPITHAM* body composition.

BMI and Insomnia Index

The highest recorded BMI in male was **29.1** with a PSQI score of **14**. The highest recorded BMI in female was **32** with a PSQI score of **16**. In female the highest PSQI score was **17** with a BMI of **25.5**.

CONCLUSION

This is a study with small sample size, further research is needed to determine the efficacy of the trial drug. More standard clinical trials on large scale with competent clinical investigations like *polysomnography* should be carried out scientifically to prove the efficacy of Siddha medicines for insomnia.

REFERENCES

1. Roth T. Insomnia: Definition, Prevalence, Etiology, and Consequences. *Journal of Clinical Sleep Medicine*, 2007 Aug 15; 3(5 suppl): S7–10.
2. Ancoli-Israel S, Roth T. Characteristics of insomnia in the United States: results of the 1991 National Sleep Foundation Survey. *I. Sleep.*, 1999 May 1; 22: S347-53.
3. Johnson EO, Roth T, Schultz L, Breslau N. Epidemiology of DSM-IV Insomnia in Adolescence:

- Lifetime Prevalence, Chronicity, and an Emergent Gender Difference. *Pediatrics.*, 2006 Feb 1; 117(2): e247–56.
4. Katz DA, McHorney CA. Clinical correlates of insomnia in patients with chronic illness. *Archives of internal medicine.*, 1998 May 25; 158(10): 1099-107.
 5. T. V. Sambasivampillai, *Siddha Medical Dictionary*, Department of Siddha Medicine and Homoeopathy.
 6. Gunapadam part one – mooligai, Department of Indian medicine and Homeopathy.
 7. Mikulska P, Malinowska M, Ignacyk M, Szustowski P, Nowak J, Pesta K, Szelaq M, Szklanny D, Judasz E, Kaczmarek G, Ejiouho OP, Paczkowska-Walendowska M, Gościniak A, Cielecka-Piontek J. Ashwagandha (*Withania somnifera*)-Current Research on the Health-Promoting Activities: A Narrative Review. *Pharmaceutics.*, 2023 Mar 24; 15(4): 1057. doi: 10.3390/pharmaceutics15041057. PMID: 37111543; PMCID: PMC10147008
 8. Krishnan V, Collop NA. Gender differences in sleep disorders. *Current opinion in pulmonary medicine*, 2006 Nov 1; 12(6): 383-9.
 9. Li RH, Wing YK, Ho SC, Fong SY. Gender differences in insomnia—a study in the Hong Kong Chinese population. *Journal of psychosomatic research*, 2002 Jul 1; 53(1): 601-9.