



Research Article

THE POSITIVE EFFECTS OF *PRATIMARSHA NASYA* W.S.R. TO SLEEP PHYSIOLOGY

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KEYWORDS: *Pratimarsha Nasya*, Sleep Physiology, Sleep Quality, Insomnia, *Anu Taila*, *Dincharya*.

ABSTRACT

Study was planned to preventively deal with sleep disturbances which are waiting to become public health problem. As much as 30% individuals among apparently healthy individuals in India suffer from occasional insomnia. Ayurveda classics offered a solution by use of *Pratimarsha Nasya* as daily regimen to improve sleep quality. *Anu taila* is best used for *Nasya Karma*, so was chosen as medicine for this clinical observational study. Material and methods- 28 subjects were selected randomly and every evening two drops *Anu taila* in each nostril was administered for 3 months. Result- Significant improvement was found on PSQI, ESS sleepiness scale as well as self developed *Sukhnidra Sukhprabodham* scale. For self developed sleep quality assessment scale, null scores were present in the enrolled subjects with Baseline mean \pm SD 0.00 \pm 0.00 and gradual increase across subsequent intervals. Mean \pm SD after Trial is 14.54 \pm 1.97. So subjects showed significant response to *Pratimarsha nasya* with p value <0.0001 and Z value 4.647. Conclusion- Overall sleep quality is more improved after administration of *pratimarsha nasya*, different components of sleep quality considered viz. getting to sleep, quality of sleep, awake following sleep, behaviour following waking all are positively changed. *Pratimarsha nasya* has such a vast positive effect on physiology of sleep that it deserves to be incorporated in daily regimen and can be called as "two drops for well-being of *Urdhvajatru*".

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INTRODUCTION

A good quality sleep is very important for normal functioning of brain as well as body. Sleep in many ways helps in normal activity of brain activity and good balance between different functions of nervous system.^[1] Sleep is considered by Ayurveda as one of the *Traya upasthambha* i.e. one of the three basic physiological requirements for sustenance of life.^[2] While discussing about *Nidra*, the ancient Acharyas have stated that happiness and sorrow, growth and wasting, strength and weakness, virility and impotence and the knowledge and ignorance as well as the existence of life and its cessation depend on the sleep.^[3]

Stressed lifestyle, over demanding work profile, disordered eating habits, leisure activities

and different other stresses influence sleep patterns and result in sleep disturbances.^[4] Sleep disturbances though frequent, are under-reported and their implications are often neglected.

As much as 30% individuals among apparently healthy individuals in India suffer from occasional insomnia.^[5] Many are at verge of sleep disturbances. Disturbed sleep epidemic is waiting to become a public health problem. Modern medicine has nothing to offer to improve quality of sleep in a healthy individual.

Nasya, one of the *Panchkarma* procedures,^[6] is the prime therapy for maintaining the health of '*Urdhavajatru*'^[7], it is a procedure in which drugs, oils and liquid medicines are administered through

the nostrils^[8], because nose is the gateway of the head, it is highly effective in curing and preventing a number of diseases pertaining to the head.

Pratimarsha Nasya, one of the type of *Nasya* procedure^[9] is also advocated to be used as a part of *Dincharya* (daily regimen).^[10] *Pratimarsha nasya* can help to increase sleep quality, by providing *Sukhnidra* and *Sukhprabodha*.^[11]

Anu taila is best used for *Nasya Karma*. The final prepared ideal *Anu Tailam* uses minute fine oil which has a quality to penetrate the *Sukshma Srotas* i.e. most fine channels.^[12] Regular practice of *Anutaila Nasya* regains the sharpness of the sense organs. It strengthens the muscles of neck, shoulders, and chest. It guards against an attack of premature graying of hair and premature appearance of wrinkles on face.^[13] To achieve these benefits of *Anutaila*, it was chosen as a drug for *Nasya karma*.

Keeping in mind the above concept, this research work had been planned with an aim to understanding effects of *Pratimarsha nasya* and clinically observing it.

MATERIAL AND METHODS

Selection of cases

For the purpose of clinical trial, healthy volunteers were selected randomly after careful history, physical examination and necessary investigations were performed as per proforma prepared for the present trial.

Inclusion criteria

1. Age between 20-35 years.
2. Healthy persons not having underlying disease

Exclusion criteria

- Age below 20 years and above 35 years.
- Having any kind of underlying disease.
- Night workers
- Pregnant or lactating mother

Investigations

- Blood- TLC, DLC, Hb%, ESR
- Blood sugar- F/PP
- Urine- R/M
- Kidney function test- B. Urea, S. Creatinine
- Liver function test- Total protein, Albumin, globulin, S. Bilirubin, SGPT, SGOT, Alkaline phosphatase.
- X-ray chest PA view (investigations only if required)

Criteria for withdrawal

- Personal matters

- If any allergy or adversity is reported
- Any other difficulties.

Types of study: Observational Study

Period of study: Total duration of clinical trial was 3 months.

Follow up period: Follow up of volunteers progress was done at regular interval of 15 days and 1 month after completion of trial.

Sample size: Observations were made were 28 subjects.

Study schedule

Two *Bindu Anu Taila* in each nostril every evening practicing as a daily regimen for 3 months. No dietary restrictions were asked.

Criteria for assessment

Effect of therapy was compared before, during and after the trial on the basis of international as well as self made sleep quality indices.

1) Pittsberg Sleep Quality Index, 2) Epworth sleepiness scale and 3) *Sukh- nidraprabodham* scale were used for sleep quality assessment and for general effect assessment of *Pratimarsha Nasya*, grade based subjective criteria assessment were taken into account.

Observation

The observation of volunteers was carried out during the trial at 15 days interval and after completion of trial for 1 month. Only subjective parameters were taken. Results were recorded as per case record form (attached in appendix).

Conclusion and statistical analysis of the trial

Conclusions were drawn after complete assessment of the volunteers with each and every follow up by using standard statistical methodology as described below.

Material used- *Anu Tailam*

Statistical Analysis

The outcome measures were summarized as Mean±SD (standard deviation) and proportion & percentages. The mean scores of before and after treatment was compared by Gaussian 'z' test and Wilcoxon signed rank test. Paired 't' test is used for comparing Before treatment with outcomes of various follow ups. Categorical (discrete) data from the groups was compared by Gaussian test. A two-tailed p value less than 0.05 (p<0.05) was considered statistically significant.

RESULT AND DISCUSSION**Table 1: Shows the improvement in the Clinical Features according to international sleep scales across time intervals**

Parameter	Before Trial		After Trial		Difference		z-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
PSQI SCORE	0.75	1.00	0.39	0.69	-0.36	0.86	2.64	0.0080
Epworth Sleepiness Scale	3.68	2.44	2.54	1.75	-1.14	2.12	3.329	0.0010

For PSQI Score, high scores were present in the enrolled subjects with Baseline mean±SD 0.75±1.00 and go on gradual decrease across subsequent intervals. Mean±SD after Trial is 0.39±0.69. So subjects showed significant response to *Pratimarsha Nasya* with p value 0.008 and Z value 2.64.

For Epworth Sleepiness Scale, high scores were present in the enrolled subjects with Baseline mean±SD 3.68±2.44 and go on gradual decrease across subsequent intervals. Mean±SD after Trial is 2.54±1.75. So subjects showed significant response to *Pratimarsha Nasya* with p value 0.001 and Z value 3.329.

Table 2: Shows the improvement in the Clinical Features According to Sukh Nidraprabodham Scale across Time Intervals

Parameter	Before Trial		After Trial		Difference		z-value	p-value!
	Mean	SD	Mean	SD	Mean	SD		
Component 1 "Difficult/Easier than BT"	0.00	0.00	1.68	0.86	1.68	0.61	4.622	<0.0001
Component 2 "Slower/Quickly than BT"	0.00	0.00	1.93	0.66	1.93	0.47	4.740	<0.0001
Component 3 "Feel less sleepy/ More Sleepy Than BT"	0.00	0.00	1.96	0.74	1.96	0.53	4.700	<0.0001
GTS (Getting to sleep)	0.00	0.00	5.57	1.45	5.57	1.03	4.661	<0.0001
Component 4- More restless/ calmer than BT	0.00	0.00	1.36	0.49	1.36	0.35	4.802	<0.0001
Component 5- More wakeful/ less wakeful periods Than BT"	0.00	0.00	0.21	0.42	0.21	0.30	2.449	0.014
Quality of Sleep	0.00	0.00	1.57	0.63	1.57	0.45	4.738	<0.0001
<i>Sukh Nidra</i> Score	0.00	0.00	7.14	1.78	7.14	1.26	4.648	<0.0001
Component 6-AFS more Difficult/easier than BT	0.00	0.00	1.79	0.57	1.79	0.40	4.789	<0.0001
Component 7-AFS time longer/ shorter than BT	0.00	0.00	1.68	0.55	1.68	0.39	4.777	<0.0001
AFS- awake following sleep	0.00	0.00	3.46	0.84	3.46	0.59	4.693	<0.0001
Component 8-BFW tired/ alert than BT	0.00	0.00	2.29	0.46	2.29	0.33	4.850	<0.0001
Component 9-BFW balance co-ordination than BT	0.00	0.00	1.64	0.49	1.64	0.35	4.802	<0.0001
BFW- before following wakening	0.00	0.00	3.93	0.66	3.93	0.47	4.740	<0.0001
<i>Sukh Prabodha</i>	0.00	0.00	7.39	1.07	7.39	0.75	4.665	<0.0001
<i>Sukh Nidraprabodham</i>	0.00	0.00	14.54	1.97	14.54	1.39	4.647	<0.0001
<i>Sukhprabodh</i> - Total Score	0.00	0.00	58.14	7.89	58.14	5.58	4.647	<0.0001

Calculated using Wilcoxon Test

For *Sukh Nidraprabodham*, null scores were present in the enrolled subjects with Baseline mean+SD 0.00+0.00 and gradual increase across subsequent intervals. Mean+SD after Trial is 14.54 +1.97. So subjects showed significant response to *Pratimarsha nasya* with p value <0.0001 and Z value 4.647

Total *Sukhnidra prabodhama* showed significant improvement indicated *Pratimarsha Nasya* acted on both *Sukhnidra* and *Sukhprabodha* improving getting to sleep, quality of sleep, awake following sleep, behaviour following wakening in trail subjects. It is to be noted that all the components no benefit was seen till day 15 of trial

and then gradual increase was seen, so, we can say that though *Pratimarsha Nasya* acts on sleep physiology to give *Sukh-Nidraprabodham* to the subject but the action is of slow onset nature and takes time to show off improvements.

CONCLUSION

Following points can be concluded on the basis of observations, results and thorough discussion in the present context.

- *Pratimarsha nasya* has the tendency to induce *Samyawastha* of *Nidra* it reduces chances of insomnia as well as day time or excessive sleepiness.
- *Pratimarsha nasya* induces *Sukhnidra* by improving getting to sleep, quality of sleep.
- *Pratimarsha nasya* makes getting to sleep easier, quicker.
- Sleep is calmer and wakeful periods are reduced if any, by use of *Pratimarsha nasya*.
- "Awake following sleep" is made easier and requires shorter time by use of *Pratimarsha nasya*.
- Individuals feel more alert and disruptions (if any) are reduced, thus *Pratimarsha nasya* improves behaviour following waking.
- Overall *Sukhnidraprabodha* is more profound after administration of *Pratimarsha nasya*, getting to sleep, quality of sleep, awake following sleep, behaviour following waking all are positively changed.
- *Pratimarsha nasya* has such a vast positive effect on physiology of sleep that it deserves to be incorporated in daily regimen and can be called as "two drops for well-being of *Urdhvajatru*".

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