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Research Article

Insomnia Disorder

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A comparative clinical trial to rule out the impact of Yoga Nidra and Padabhyanga on Insomnia Disorder

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Everyday living involves sleep in one way or another. Sleep problems lower a person's productivity and sense of calm. There are numerous allopathic medications available to promote sleep, but they all have different adverse effects. In an attempt to address this, a trial using Yoga Nidra and Padabhyanga was conducted at Parul Ayurved Hospital on Nidranasha patients over a 30-day period. Yogic interventions are simple to implement and have no negative side effects. The patients' sleep metrics showed a noticeable improvement also.

Keywords: Pittsburgh Sleep Quality Index, Sleep efficiency, Yoga Nidra, Padabhyanga, Insomnia disorder

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Introduction

Insomnia may be correlated with *Nidranasha* in Ayurvedic classics. Nowadays, due to altered lifestyles, busy schedule, and stressful living conditions, *Nidranasha* have become a major problem worldwide.

Abhyanga is advocated as a routine in our classics, emphasizing its special influence on sleep and *Vata Dosha*. Ayurveda classics give direct reference on the influence of *Padabhyanga* in inducing sleep. *Yoga Shastra* advises the practice of guided meditation called *Yoga Nidra* for deep physical and mental relaxation. The currently available treatments and medications for insomnia are costly and often harmful due to side effects. Many over-the-counter sleeping tablets, in addition to the commonly doctor-prescribed benzodiazepines, non-benzodiazepines, melatonin, antidepressant, and antihistamine medications, may lead to tolerance, dependence on the pills in order to fall asleep, or abuse of the medication.**[1]**

Need has always been felt to develop certain treatment modalities for the management of *Nidranasha* which is safe, effective, easy, cost effective and without any side effects. The study was done an effort made to evaluate the combined effect of *Padabhyanga* and *Yoga Nidra* to manage the *Nidranasha.*

Objectives of the study

1. To assess the efficacy of *Padabhyanga* in insomnia (Group A)
2. To assess the efficacy of *Yoga nidra* in insomnia (Group B)
3. To assess the efficacy of *Yoga Nidra* with *Padabhyanga* in insomnia (Group C)
4. To compare the therapeutic effect of three groups

Hypothesis/Research Questions

Alternate Hypothesis:

There is significant statistical difference in the sleep pattern of Group C (study group) when compared to Group A or B (control group).

Null Hypothesis:

There is no significant statistical difference in the sleep pattern of Group C (study group) when compared to Group A or B (control group).

Materials and Methods

Method of collection of data:

Subjects who are fulfilling the diagnostic criteria and inclusion were selected for the study.

Research design:

The clinical study was an open labeled, three arm, prospective clinical trial, conducted in Faculty of Ayurved, Parul University.

Source of data:

Patients of insomnia disorder attending the OPD of Parul Ayurved Hospital who are coming under the inclusion criteria were selected for the study.

Screening of patients:

The patients were screened based on the diagnostic/ inclusion/exclusion criteria.

Diagnostic criteria

Patients with sleep disorders were diagnosed for insomnia disorder DSM – V diagnostic criteria.

Inclusion criteria:

- Subjects presenting with symptoms of insomnia disorder
- Subjects who are of the age group between 18 - 50 years.
- Subjects who are willing to take part in study

Exclusion criteria:

- Subjects with any associated systemic disorders such as hypertension, diabetes, obesity, thyroidism, IBS and renal disorders
- Subjects who are under medication for sleep disorders
- Subjects who suffer from any other conditions categorized in sleep disorders such as restless leg syndrome, parasomnias, etc.
- Subjects who have drug/alcohol addictions

Sample size:

Sample size was 87 as calculated at $P<0.05$ with 20% error.

Sampling technique:

Computer generated randomiz table was adopted to allot groups to each sample included in study.

Grouping and procedure:

Particulars	Group A	Group B	Group C
Sample Size	87	87	87
Intervention	Padabhyanga	Yoga Nidra	Padabhyanga + Yoga Nidra
Study Duration	30 days	30 days	30 days
Procedure	Padabhyanga - 10-20ml Tila Taila application under feet for 5 minutes before bed time	Yoga Nidra Session of 30 minutes duration daily for 30 days at night time (5 supervised sessions in morning hrs & 25 self-administered sessions at night time through headphones) Note: for Yoga Nidra sessions, audio instructions of Bihar School of Yoga were used commonly for all subjects.	Padabhyanga –10-20 ml Tila Taila application under feet for 5 minutes before bed time & Yoga Nidra Session of 30 minutes duration daily for 30 days at night time (5 supervised sessions in morning hrs & 25 self-administered sessions at night time through headphones) Note: for Yoga Nidra sessions, audio instructions of Bihar School of Yoga were used commonly for all subjects
Assessment & Follow-up	1st assessment - BT 2nd assessment - 30th day 1st follow up - after 60 days	1st assessment - BT 2nd assessment - 30th day 1st follow up - after 60 days	1st assessment - BT 2nd assessment - 30th day 1st follow up - after 60 days

Assessment criteria:

The assessment was done based on parameters given in Pittsburgh Sleep Quality Index. The parameters assessed were subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, using sleep medication and daytime dysfunction.

Ethical clearance: Ethics clearance was obtained from Institutional Ethics committee of Parul Institute of Ayurved, Parul University.

Statistical Analysis:

The data was collected in standardized case report form specially prepared for the clinical trial. Such collected data was tabulated and analyzed using Statistical Package for the Social Sciences version 23.

Descriptive statistics was calculated for nominal / ordinal data as frequency / percentages, whereas numerical data was expressed as mean ± SD. Nominal and ordinal data was analyzed using non-parametric test such as Friedman test (within group) and Kruskal wallis test (between groups). Changes in parameters with $P<0.05$ was considered as significant.

Observations and Results

The study was conducted in 300 patients with insomnia disorder divided into three groups with 101 patients in group A, 100 patients in group B and 99 patients in group C. Out of which, 96 patients completed the study in group A, 93 in group B and 94 in group C.

The intervention in patients of group A was *Padabhyanga* with *Tila Taila*, in group B practice of *Yoga Nidra* and group C received both for a period of 30 days. The patients were assessed before the treatment and after 30 days of intervention based on the subjective parameters mentioned in Pittsburgh sleep quality index. These patients were followed up and again assessed for the same parameters after a period of 30 days after intervention. These results were documented, analyzed, and interpreted using statistical analysis tools SPSS version 23.

Subjective parameters were analysed through Friedman test (Non parametric test for within subject's designs)

Kruskal wallis test (Non parametric test for between subject's designs)

The following are the results that were obtained.

Results of therapy on Subjective Parameters: Within the groups

Effect of *Padabhyanga* on component 1: Subjective sleep quality:

On applying the friedman test for groupwise comparison, it was seen that in group A there was a reduction of 1.34 in the mean rank of the subjective sleep quality of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.01 which shows the sleep quality gets maintained throughout the period. The chi square value is 167.464 with $p < 0.001$which shows that the effect of *Padabhyanga* in subjective sleep quality is statistically highly significant.

Effect of *Padabhyanga* on component 2: Sleep Latency:

On applying the friedman test for groupwise comparison, it was seen that in group A there was a reduction of 0.79 in the mean rank of the sleep latency of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.07 which shows the sleep latency gets maintained throughout the period. The chi square value is 100.750 with p <0.001which shows that the effect of *Padabhyanga* in sleep latency is statistically highly significant.

Effect of *Padabhyanga* on component 3: Sleep Duration:

On applying the friedman test for groupwise comparison, it was seen that in group A there was a reduction of 0.87 in the mean rank of the sleep duration of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.1 which shows the sleep duration gets maintained throughout the period. The chi square value is 110.214 with p <0.001which shows that the effect of *Padabhyanga* in sleep duration is statistically highly significant.

Effect of *Padabhyanga* on component 4: Sleep Efficiency:

On applying the friedman test for groupwise comparison, it was seen that in group A there was a reduction of 0.53 in the mean rank of the sleep efficiency of patients from 1st day to 30th day and after the follow-up period also, there was no difference which shows the sleep efficiency gets maintained throughout the period. The chi square value is 64.235 with p <0.001 which shows that the effect of *Padabhyanga* in sleep efficiency is statistically highly significant.

Effect of *Padabhyanga* on component 5: Sleep Disturbances:

On applying the friedman test for groupwise comparison, it was seen that in group A there was a reduction of 0.45 in the mean rank of the sleep disturbances of patients from 1st day to 30th day and after the follow-up period, there was no difference in the mean rank which shows the sleep disturbances gets maintained throughout the period. The chi square value is 56.000 with p <0.001 which shows that the effect of *Padabhyanga* in sleep disturbances is statistically highly significant.

Effect of *Padabhyanga* on component 7: Daytime dysfunction:

On applying the friedman test for groupwise comparison, it was seen that in group A there was a reduction of 1.12 in the mean rank of the daytime dysfunction of patients from 1st day to 30th day and after the follow-up period, there was a difference of 0.02 in the mean rank which shows the daytime dysfunction gets maintained throughout the period. The chi square value is 132.902 with p <0.001 which shows that the effect of *Padabhyanga* in daytime dysfunction is statistically highly significant.

Effect of *Padabhyanga* on Global PSQI Index:

On applying the friedman test for groupwise comparison, it was seen that in group A there was a reduction of 1.37 in the mean rank of the global PSQI score of patients from 1st day to 30th day and after the follow-up period, there was a difference of 0.26 in the mean rank which shows the global PSQI score gets maintained throughout the period. The chi square value is 174.816 with p <0.001 which shows that the effect of *Padabhyanga* in global PSQI score is statistically highly significant.

Effect of *Yoga Nidra* on component 1: Subjective sleep quality:

On applying the friedman test for groupwise comparison, it was seen that in group B there was a reduction of 1.38 in the mean rank of the subjective sleep quality of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.15 which shows the sleep quality gets maintained throughout the period. The chi square value is 162.498 with p <0.001which shows that the effect of *Yoganidra* in subjective sleep quality is statistically highly significant.

Effect of *Yoga Nidra* on component 2: Sleep Latency:

On applying the friedman test for groupwise comparison, it was seen that in group B there was a reduction of 1.20 in the mean rank of the sleep latency of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.15 which shows the sleep latency gets maintained throughout the period. The chi square value is 150.141 with p <0.001 which shows that the effect of *Yoganidra* in sleep latency is statistically highly significant.

Effect of *Yoga Nidra* on component 3: Sleep Duration:

On applying the friedman test for groupwise comparison, it was seen that in group B there was a reduction of 1.00 in the mean rank of the sleep duration of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.01 which shows the sleep duration gets maintained throughout the period. The chi square value is 119.513 with p <0.001 which shows that the effect of *Yoganidra* in sleep duration is statistically highly significant.

Effect of *Yoga Nidra* on component 4: Sleep Efficiency:

On applying the friedman test for groupwise comparison, it was seen that in group B there was a reduction of 0.46 in the mean rank of the sleep efficiency of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.01 which shows the sleep efficiency gets maintained throughout the period. The chi square value is 57.364 with p <0.001 which shows that the effect of *Yoganidra* in sleep efficiency is statistically highly significant.

Effect of *Yoga Nidra* on component 5: Sleep disturbances:

On applying the friedman test for groupwise comparison, it was seen that in group B there was a reduction of 0.29 in the mean rank of the sleep disturbances of patients from 1st day to 30th day and after the follow-up period, there was a difference of 0.02 in the mean rank which shows the sleep disturbances gets maintained throughout the period. The chi square value is 53.446 with p <0.001 which shows that the effect of *Yoganidra* in sleep disturbances is statistically highly significant.

Effect of *Yoga Nidra* on component 7: Daytime dysfunction:

On applying the friedman test for groupwise comparison, it was seen that in group B there was a reduction of 1.16 in the mean rank of the daytime dysfunction of patients from 1st day to 30th day and after the follow-up period, there was a difference of 0.2 in the mean rank which shows the daytime dysfunction gets maintained throughout the period. The chi square value is 142.095 with p <0.001 which shows that the effect of *Yoganidra* in daytime dysfunction is statistically highly significant.

Effect of *Yoga Nidra* on Global PSQI Index:

On applying the friedman test for groupwise comparison, it was seen that in group B there was a reduction of 1.32 in the mean rank of the global PSQI score of patients from 1st day to 30th day and after the follow-up period, there was a difference of 0.36 in the mean rank which shows the global PSQI score gets maintained throughout the period. The chi square value is 175.089 with p <0.001 which shows that the effect of *Yoganidra* in global PSQI score is statistically highly significant.

Effect of *Padabhyanga* and *Yoga Nidra* on component 1: Subjective sleep quality:

On applying the friedman test for groupwise comparison, it was seen that in group C there was a reduction of 1.36 in the mean rank of the subjective sleep quality of patients from 1st day to 30th day and after the follow up period also, there was a difference of 0.28 which shows the sleep quality gets maintained throughout the period. The chi square value is 174.038 with p <0.001 which shows that the effect of *Padabhyanga* and *Yoga Nidra* in subjective sleep quality is statistically highly significant.

Effect of *Padabhyanga* and *Yoga Nidra* on component 2: Sleep Latency:

On applying the friedman test for groupwise comparison, it was seen that in group C there was a reduction of 1.21 in the mean rank of the sleep latency of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.04 which shows the sleep latency gets maintained throughout the period. The chi square value is 150.236 with p <0.001 which shows that the effect of *Padabhyanga* and *Yoga Nidra* in sleep latency is statistically highly significant.

Effect of *Padabhyanga* and *Yoga Nidra* on component 3: Sleep Duration:

On applying the friedman test for groupwise comparison, it was seen that in group C there was a reduction of 1.11 in the mean rank of the sleep duration of patients from 1st day to 30th day and after the follow-up period also, there was no difference which shows the sleep duration gets maintained throughout the period. The chi square value is 140.000 with p <0.001 which shows that the effect of *Padabhyanga* and *Yoga Nidra* in sleep duration is statistically highly significant.

Effect of *Padabhyanga* and *Yoga Nidra* on component 4: Sleep Efficiency:

On applying the friedman test for groupwise comparison, it was seen that in group C there was a reduction of 0.52 in the mean rank of the sleep efficiency of patients from 1st day to 30th day and after the follow-up period also, there was a difference of 0.02 which shows the sleep efficiency gets maintained throughout the period. The chi square value is 66.741 with p <0.001which shows that the effect of *Padabhyanga* and *Yoga Nidra* in sleep efficiency is statistically highly significant.

Effect of *Padabhyanga* and *Yoga Nidra* on component 5: Sleep Disturbances:

On applying the friedman test for groupwise comparison, it was seen that in group C there was a reduction of 0.54 in the mean rank of the sleep disturbances of patients from 1st day to 30th day and after the follow-up period, there was no difference in the mean rank which shows the sleep disturbances gets maintained throughout the period. The chi square value is 66.216 with p <0.001 which shows that the effect of *Padabhyanga* and *Yoga Nidra* in sleep disturbances is statistically highly significant.

Effect of *Padabhyanga* and *Yoga Nidra* on component 7: Daytime dysfunction:

On applying the friedman test for groupwise comparison, it was seen that in group C there was a reduction of 1.09 in the mean rank of the daytime dysfunction of patients from 1st day to 30th day and after the follow up period, there was a difference of 0.25 in the mean value which shows the daytime dysfunction gets maintained throughout the period. The chi square value is 144.848 with p <0.001 which shows that the effect of *Padabhyanga* and *Yoga Nidra* in daytime dysfunction is statistically highly significant.

Effect of *Padabhyanga* and *Yoga Nidra* on Global PSQI Index:

On applying the friedman test for groupwise comparison, it was seen that in group C there was a reduction of 1.46 in the mean rank of the global PSQI score of patients from 1st day to 30th day and after the follow-up period, there was a difference of 0.08 in the mean rank which shows the global PSQI score gets maintained throughout the period.

The chi square value is 187.776 with p <0.001 which shows that the effect of *Padabhyanga* and *Yoga Nidra* in global PSQI score is statistically highly significant.

Results of therapy on Subjective Parameters: Between the groups

Component 1: Subjective sleep quality:

On running the Kruskal wallis test to test the statistical difference between the groups, it was seen that there was significant difference in the mean rank between the groups in Component 1 with the mean difference of 1.69 and chi square value = 138.40 with p<0.001.

Component 2: Sleep Latency:

On running the Kruskal wallis test to test the statistical difference between the groups, it was seen that there was significant difference in the mean rank between the groups in Component 2 with the mean difference of 1.99 and chi square value = 73.989 with p<0.001.

Component 3: Sleep Duration:

On running the Kruskal wallis test to test the statistical difference between the groups, it was seen that there was significant difference in the mean rank between the groups in Component 3 with the mean difference of 0.59 and chi square value = 47.793 with p<0.001.

Component 4: Sleep Efficiency:

On running the Kruskal wallis test to test the statistical difference between the groups, it was seen that there was no significant difference in the mean rank between the groups in Component 4 with the mean difference of 0.52 and chi square value = 2.989 with p>0.001.

Component 5: Sleep Disturbances:

On running the Kruskal wallis test to test the statistical difference between the groups, it was seen that there was no significant difference in the mean rank between the groups in Component 5 with the mean difference of 0.30 and chi square value = 5.090 with p>0.001.

Component 7: Daytime dysfunction:

On running the Kruskal wallis test to test the statistical difference between the groups,

It was seen that there was significant difference in the mean rank between the groups in Component 7 with the mean difference of 1.19 and chi square value = 44.515 with p<0.001.

Global PSQI Index:

On running the Kruskal wallis test to test the statistical difference between the groups, it was seen that there was significant difference in the mean rank between the groups in global PSQI with the mean difference of 5.54 and chi square value = 102.393 with p<0.001.

Discussion

Padabhyanga is advised as a daily prophylactic regimen to promote health and prevent diseases. Among the innumerable benefits described in classics, the major advantages are - relieves, *Kharatva, Stabdata, Rukshata, Shrama supti (Sadyaprashamana),* gives *Bala, Sthairyata* of *Pada, Drustiprasaada, Nidra Janana* etc.**[2]**

The effects achieved by *Padabhyanga* with *Tila Taila* can be attributed not only to the mode of action of *Abhyanga* but also the qualities of *Tila Taila*. The *Śarīrika* and *Mānasika Hetus* of *Nidranasha* wherein the former category comprises *Śodhana Atiyōga, Vyayama, Upavāsa,* dietary articles and routine activities causes *Vāta-Pitta* vitiation, *Guṇas* like *Rūkṣa and Laghu* causes *Vāta* predominance and *Ushna* and *Tīkṣna* causes *Pitta* predominance.**[3]** Due to mental dispositions such as *Chinta, Krodha, Bhaya* and *Śōka, Vāta Prakōpa* takes place in addition to the physical factors.**[4]** The *Vāta* vitiation occurs, due to both kinds of etiological factors.

As *Vayu* is more predominant in *Sparshanendriya* i.e., tactile sensory organ, lodged in the *Twacha,* regular *Abhyanga* helps to reduce the *Vata* vitiation.**[5]** As per *Susrutacharya* in *Sarirasthana,* among the four *Tiryakgata Dhamanis*, each divide gradually hundred and thousand times and finally become innumerable. These cover the entire body like a network and their open to the hair endings. The *Virya* of *Abhyanga* reaches the body through these *Romakoopa* and after the proper *Paka* with *Bhrajaka Pitta* present in the skin, the actions are depicted. *Pada Abhyanga* nourishes the *Adhoga Dhamanis*, these in turn nourish the *Urdwaga Dhamanis* and *Tiryak Dhamanis* and induce sleep.

Tila Taila (sesame oil) has the properties like *Teekshna Guna*, (penetrating deep into tissues) and *Vyavayi* (spreading throughout the body part), *Ushna Virya, Madhura Vipaka* and *Guru Guna*. All the above properties of *Tila Taila* contributes to reducing the vitiated *Vata* and inturn induces sleep. A study conducted in Yerala Ayurvedic Medical College on effect of *Tila Taila Padabhyanga* in elderly suffering from *Nidra Nasha* showed good results. *Padabhyanga* reduced the time spent in bed before falling asleep and increased the sleep duration, the difference was statistically significant at the end of 14th, 21st and 28th day for both the parameters. With the continued *Padabhyanga*, gradual improvement was observed in the sleep quality and decrease in sleep disturbances were noticed, the differences were significant at the end all four weeks.**[6]** The blood vascular system, nervous system, and lymphatic system are the three systems on which the *Abhyanga* primarily acts. *Abhyanga* activates the skin's mechano- and tactile receptors through both fine and crude touch. The increase in skin temperature triggers kinetic motion in the receptors, which activates the axons and transmits input through the first, second, and third order of neurons to the sensory cortex, which in turn exhibits neuronal function and keeps the body's natural homeostasis in place. According to another theory, when there is kinetic motion, the subcutaneous capillaries dilate, allowing the medication to be absorbed. This improves circulation by raising blood amino acid levels, which in turn raise plasma. Tryptophan, in turn, enhances neurotransmitter activity and causes the release of melatonin, which in turn triggers the release of serotonin, maintaining normal cellular function. Once circulation is enhanced, lymphatic circulation will also improve displaying the defense mechanism and removing toxins from cells via blood maintaining normal homeostasis as a result.

In studies conducted on female elderly subjects, it was found out that foot massage improved sleep quality, reduced depression, and increased the level of serotonin,**[7,8]** A systematic review reported that foot massage with essential oils resulted in reduction of anxiety and improved in well-being of cancer patients and those in intensive care. The methodologies used ranged from observational studies to randomized controlled trials with interventions like foot massage or modified reflexology lasting from 5 to 30 min.**[9]**

Yoganidra is a unique and safest means of inducing human beings to change their state of consciousness. *Yoga Nidra* not only causes bodily stimulation as the consciousness is rotated on the various body parts, but also clears the nerve pathways to the brain. In the cortical white matter of the brain, the series of rotation of consciousness in *Yoga Nidra* is in line with the map. It produces a flow of *Pranic* energy inside the neural circuit of the brain's motor homunculus as the perception is rotated again and again in the same sequence. A pair of opposing emotions or impulses in the practitioner are intensified again and again in one of the processes of *Yoga Nidra*. This constant invoking of opposing impulses or stimuli is compatible with the brain's electrophysiological working principles. It generates a nerve impulse as a neuron shoot, which is relayed and recorded in the brain. But if the same neuron continues firing repeatedly, then the brain no longer registers the relayed impulse. This 'phenomenon habituation' has been dubbed by researchers. As the brain gets used to the stimulus, it eventually becomes calm. Mental relaxation is the condition when the brain is fully calm.**[10]**

The sympathetic nervous system is activated during stress because the organism adopts the 'fight or flight' mechanism. In normal conditions, after the emergency passes, the parasympathetic system takes over. But the sympathetic system has mostly been seen to remain active most of the time, resulting in the experience of distress (Selye, 1974). An attempt is made to activate the parasympathetic system in *Yoga Nidra*, and a balance is slowly achieved between the sympathetic and parasympathetic systems by inducing full physical, emotional and mental relaxation. The practice of *Yoga Nidra* counteracts stress in this way. Carrington *et al.* (1980) concluded that *Yoga Nidra* has its most widespread use as a preventive measure for healthy, active individuals to practise as a means of alleviating accumulated tensions, increasing resistance to stress and overall efficiency, and preventing the development of diseases related to stress.

Yoga Nidra has been demonstrated to alter hormone levels, brainwave power in the alpha, theta, and delta frequency ranges and neurotransmitters like dopamine in addition to reducing subjective stress and anxiety in a variety of clinical conditions and improving perceived sleep quality.**[11]**

The subjective sleep quality of the patients showed good clinical improvements after 30 days of *Padabhyanga* therapy and even though major changes were not observed, still the sleep quality was maintained in the follow up assessment as well. The sleep latency, i.e., the time taken by a person to fall asleep after turning the lights out showed good clinical improvements after 30 days of *Padabhyanga* therapy and the results were continued follow-up period also. The total duration of sleep showed significant changes after 30 days and after the follow up. The sleep efficiency showed significant changes after 30 days and after the follow-up. The sleep disturbances showed significant statistical change after the 30 days of *Padabhyanga* and changes thereafter in the follow-up period the effects were maintained. The daytime dysfunction component showed significant statistical changes after the treatment and thereafter in the follow-up period also. The patients showed good clinical improvement after the practice of *Padabhyanga* procedure and the global PSQI score obtained after the study and after the follow up period showed good statistical significance too.

The subjective sleep quality of the patients showed good clinical improvements after 30 days of *Yoga Nidra* and the sleep quality was maintained in the follow-up assessment as well. The sleep latency showed good clinical improvements after 30 days of *Yoga Nidra* and the results were continued in the follow-up period also. The total duration of sleep showed significant changes after 30 days and after the follow up. The sleep efficiency showed significant changes after 30 days and after the follow-up. The sleep disturbances showed significant statistical change after the 30 days of *Yoga Nidra* and changes thereafter in the follow-up period the effects were maintained. The daytime dysfunction component showed significant statistical changes after the treatment and thereafter in the follow up period also. The patients showed good clinical improvement after the practice of *Yoga Nidra* and the global PSQI score obtained after the study and after the follow up period showed good statistical significance too. The benefits of *Padabhyanga* with *Tila Taila* and effects of *Yoga Nidra* on the sleep parameters mentioned in the PSQI were enlisted above. The combined practice of both modalities exhibits their synergetic effect upon sleep parameters. On comparing the subjective sleep quality of patients in the three groups,

It was found out that Group C showed more effects than other groups and it was statistically highly significant. In sleep latency and sleep duration also, Group C showed more results with high statistical significance. The efficacy of all three groups in components sleep efficiency and sleep disturbances are same and results were statistically insignificant. In daytime dysfunction, Group B showed more effects with high statistical significance. The mean rank of global PSQI score is greater in Group C with high statistical significance stating that, even though, component wise variations are there, still therapeutic efficacy of *Padabhyanga with Yoga Nidra* therapy is more than control groups.

Hence, this study accepts Alternate hypothesis:

There is significant statistical difference in sleep pattern of Group C (study group - *Padabhyanga* and *Yoga Nidra*) when compared to control groups viz, Group A (*Padabhyanga*) and B (*Yoga Nidra*).

Conclusion

In just one month, patients' sleep metrics had significantly improved, & their sense of wellness & mental calm had been fostered by combined benefits of *Yoga Nidra* & *Padabhyanga*. Procedure has significant impacts, despite fact that precise cause of advantages is unknown. However, it is clear that patients with chronic insomnia can benefit from combined *Yoga Nidra* & *Padabhyanga* treatment. Since technique helps people with sleeplessness, it can be used regularly in psychiatric hospitals, nursing homes, old age homesand other facilities.

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