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Effect of Yogic Practices Integrated with Yoga Nidra on Sleep Quality and Self-Regard Among Women with Sleep Disorders

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Abstract: This study was performed to see if including yoga nidra into regular practise might affect sleep quality and self-esteem in women who struggled with insomnia. Thirty women with sleep difficulties, all residents of Chennai between the ages of 45 and 55, were randomly assigned to one of two groups using the Sleep-50 questionnaire. The control group did nothing while the experimental group did yoga nidra for 45 min six times a week, for 16 weeks. The subjects in the control group maintained their usual routines while in active rest. Prior to training and after 16 weeks of yogic practises, data on health markers were obtained from both groups. The Sleep Quality Scale (2006) was used to determine sleep quality, while the Self-Regard Questionnaire (1996) was used to determine self-worth. Finding the statistically significant difference between the experimental and control groups required the use of analysis of covariance (ANCOVA). The significance threshold was set at 0.05 per cent. The findings of this research showed that the experimental group of women with sleep difficulties benefited more from the integration of yogic practises with yoga nidra than did the control group. Yoga, yoga nidra, insomnia, quality of sleep, and sense of self-worth are all terms that will be discussed.

Keywords: Yoga, Sleep Quality Scale, Insomnia, Sleep disorders

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Introduction

One-third of our life is spent in sleep. Since the industrialization era, there has been a gradual decrease in the hours humans have devoted to sleep. Increasingly, the time devoted to sleep has been shortchanged, shortened, and replaced with daily mundane activities, increasing work pressure and stress, entertainment and media,

and social media interactions (Walker, 2017; Dia Rekhi, 2019). This leads to sleep deprivation. Prolonged sleep deprivation leads to problems with physical health, mood, concentration, depression, and emotional stability (Sexton-Radek and Graci, 2008). There is scientific evidence that prolonged sleep deprivation

increases the risk of developing hypertension, type-2 diabetes, obesity, and mood-related disorders (Dia Rekhi, 2019). Over time, sleep deprivation also leads to developing sleep disorders. Some of the common sleep disorders are insomnia, hypersomnia, obstructive sleep apnoea (OSA), restless legs syndrome/Willis-Ekbom disease, circadian rhythm sleep disorders, and parasomnia. The following are some of the consequences of sleep disorders: fatigue; headache; tension, anxiety and stress; poor appetite; chronic constipation; decreased immunity; poor concentration or anxiety; depression lapses; distressed mood mimicking depression symptoms, and relationship problems (Pollak *et al.*, 2010).

It is sensible to adopt healthy life choices to prevent and cure sleep disturbances. One of the safe, healthy, and economical solutions to prevent and recover from sleep disturbance is yoga. Through body movements, breath work, and deep relaxation, yoga balances the body-mind complex at the physical, physiological, hormonal, and emotional levels. Yoga not only treats the symptoms but eradicates the root of the problem, thereby bringing a total harmony of the body, mind, and emotions.

The term sleep quality includes the sub-measures of sleep such as total sleep time, sleep onset latency, sleep maintenance, total wake time, sleep efficiency, etc. Sleep quality has serious impact on daytime functioning. It is also an underlying symptom for sleep and other mental health disorders. Objective measures of sleep quality are polysomnography and actigraphy, and subjective measures include self-assessment scales such as Pittsburgh Sleep Quality Index (PSQI), Mini-Sleep Questionnaire (MSQ), Jenkins Sleep Scale (JSS), Leeds Sleep Evaluation Questionnaire (LSEQ), and Sleep Quality Scale (SQS) (Fabbri *et al.*, 2021).

Sleep deficiency leads to a reduction in the overall quality of life and wellness. Inadequate sleep quantity and quality have repercussions at the social (decline in work performance, increase

in accident rate, inability to maintain relationships), mental (stress, depression, lack of focus, confusion, poor memory), emotional (lack of motivation, dull, reduced impulse control), and physical (fatigue, low immunity, weight gain) levels. Thus, self-regard is an important wellness measure related to sleep. Some of the commonly validated self-reported scales of wellness are the Quality of Life Scale (CASP-19), Scales of Psychological Well-Being, General Well-Being Schedule, Life Satisfaction Index A, and Self-Regard Questionnaire. Self-Regard Questionnaire assesses the self-concept of an individual and his/her overall sense of wellbeing.

The present study was designed to find out the effect of yogic practices integrated with yoga nidra on the selected health variables of sleep quality and self-regard among women with sleep disorders. It was hypothesized that there would be a significant difference in the selected health variables of sleep quality and self-regard among women with sleep disorders in the experimental group due to yogic practices integrated with yoga nidra, compared with those in the control group.

Materials and Methods

Thirty women from Chennai with sleep difficulties, aged 45 to 55, were chosen for the research using the Sleep-50 questionnaire. Equal numbers (15 each) were assigned to the experimental group (yogic practises combined with yoga nidra) and the control group (no intervention). The yogic practises were conducted for 16 weeks with the experimental group. For the course of the investigation, the control group just did nothing. The quality of participants' sleep and their own sense of well-being served as the dependent variables in this investigation, which was conducted using a random-assignment experimental method.

Suryanamaskar, asanas, pranayama, and yoga nidra, along with other yogic practises were offered to the test group for 16 weeks. Six days a week, for no more than an hour per session, and for a total of 16 weeks, that was the training

regimen. Both groups took a pre-test to gather data before beginning their training. Both groups were re-studied after 16 weeks of yoga practise. Yi *et al.* (2006) used the Sleep Quality Scale to quantify how well people slept, or how high their score was. Horowitz *et al.* (1996) Self Regard's Questionnaire was used to tally participants' levels of self-respect.

To identify statistically significant differences between the groups, an analysis of covariance (ANCOVA) was performed. There was a hard-and-fast 0.05 per cent threshold for significance.

Results and Discussion

Sleep Quality:

The results of the effect of yogic practices integrated with yoga nidra on sleep quality among the experimental group, and the pre-, post- and adjusted posttest mean of the experimental and control groups are presented in Table I.

The average pre-test sleep quality score for the experimental group is 73.47 (Table 1), whereas the mean score for the control group is 72.33. The post-test mean for the experimental group is 64.13, whereas the mean for the control group is 72.13. At 0.05 level of significance, the F value of 3.4 found in the pretest is lower than the needed F value of 4.20. This indicated that the first round of randomization was fair and that there were no discernible differences between the groups.

The resulting F value of 11.9 is more than the needed F values of 4.20, indicating that there is a substantial difference between the groups based on post-test scores. This demonstrates that there is a statistically significant difference in the participants' posttest means.

Adjusted mean scores were produced and statistically analysed based on the differences in test results between the groups at the beginning and end of the study. The calculated F value (4.61) exceeds the minimum value (4.21). This demonstrates that the means on the variable of

sleep quality vary significantly after 16 weeks of yoga practises. The acquired before, after, and corrected mean values are shown in Figure 1.

Table 2 shows the pre-, post-, and adjusted posttest mean for the experimental and control groups, as well as the findings of the influence of yogic practises integrated with yoga nidra on self-regard among the experimental group.

The average pre-test self-esteem score for the experimental group is 41.73, whereas the mean score for the control group is 40.67 (Table 2). The average scores of the test subjects and the controls on the follow-up tests are 34.40 and 39.33, respectively. The achieved F value of 2.19 in the pretest is lower than the minimum value of F necessary to be significant at the 0.05 level of confidence, which is 4.20. This indicated that the original randomization was fair and that there were no substantial differences between the groups.

The calculated F value of 14.08 is larger than the needed F values of 4.20, indicating that there is a statistically significant difference between the groups based on post-test scores. This demonstrates that the participants' post-test means are significantly different.

A statistical analysis was performed on adjusted mean scores, which were derived by comparing pre- and post-test results across groups. $F(43.11) > F(4.21)$, hence the result is acceptable. Results show a statistically significant change in means on the variable of depression after 16 weeks of yoga practises.

Figure 2 displays the acquired pre-, post-, and corrected mean values. Bankar *et al.* (2013) conducted a cross-sectional study using data collected from Nagpur city inhabitants aged 60 and above. While conducting their survey study, they relied on the Pittsburgh Sleep Quality Index (PSQI) and the Quality of Life Leiden-Padua (QOL LEIPAD) Questionnaire. A total of 65 senior male and female volunteers gave their written informed consent and completed the

Table 1: Computation of mean and analysis of covariance of sleep quality of the experimental and control groups

	Experimental group	Control group	Source of variance	Sum of squares	Degrees of freedom	Mean squares	Obtained F ratio
Pretest mean	73.47	72.33	Between	9.63	1	9.63	3.4
			Within	917.07	28	32.75	
Posttest mean	64.13	72.13	Between	480.00	1	480.00	11.9*
			Within	1129.47	28	40.34	
Adjusted posttest mean	63.61	72.65	Between	606.68	1	606.68	46.06*
			Within	355.65	27	13.17	
Mean difference	9.33	0.20					

*Significant at 0.05 level of confidence. (The table value for significance at 0.05 level of confidence with df 1 and 28 is 4.20 and for df 1 and 27 is 4.21.)

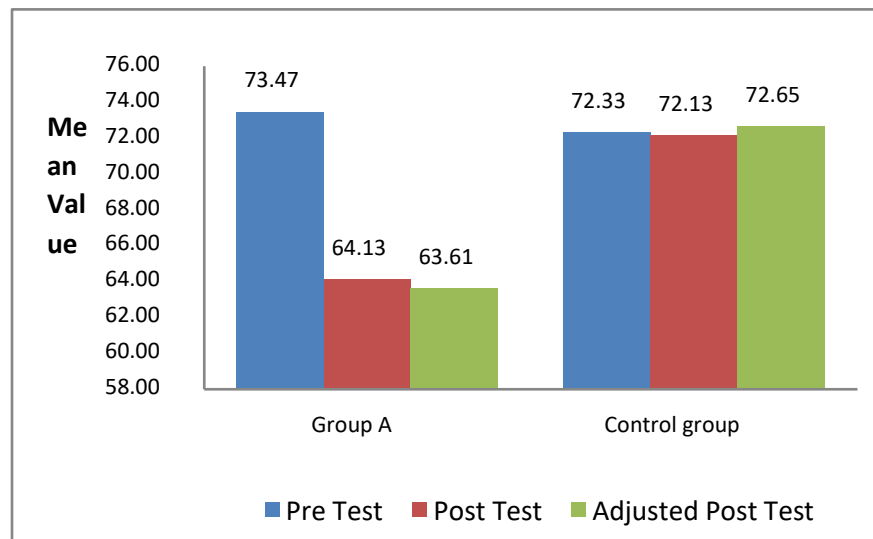


Fig. 1: Sleep quality values of the pretest, posttest and adjusted posttest of the Yogic Practices and Control Groups Self-Regard.

questionnaires for the study. The Mann-Whitney U test was used to compare the study group's with the control group's results on the Sleep Quality Index (PSQI) and the Quality of Life LEIPAD Questionnaire. The results showed that the yoga group had a lower mean PSQI score than the control group. Also, various quality of life evaluations acquired by the yoga groups were

demonstrated to be higher than those obtained by the control group. These results suggest that including regular yoga practises into the everyday lives of older adults may help to improve sleep quality and, by extension, quality of life (QOL).

To investigate whether or not yoga is beneficial for increasing physical function and health-related quality of life (HRQoL) in a

Table 2: Computation of mean and analysis of covariance of self-regard of the experimental and control groups

	Experimental group	Control group	Source of variance	Sum of squares	Degrees of freedom	Mean squares	Obtained F ratio
Pretest mean	41.73	40.67	Between	8.53	1	8.53	2.19
			Within	524.27	28	18.72	
Posttest mean	34.40	39.33	Between	182.53	1	182.53	14.08*
			Within	362.93	28	12.96	
Adjusted posttest mean	34.06	39.68	Between	233.05	1	233.05	43.11*
			Within	145.97	27	5.41	
Mean difference	7.33	1.33					

*Significant at 0.05 level of confidence. (The table value for significance at 0.05 level of confidence with df 1 and 28 is 4.20 and for df 1 and 27 is 4.21.)

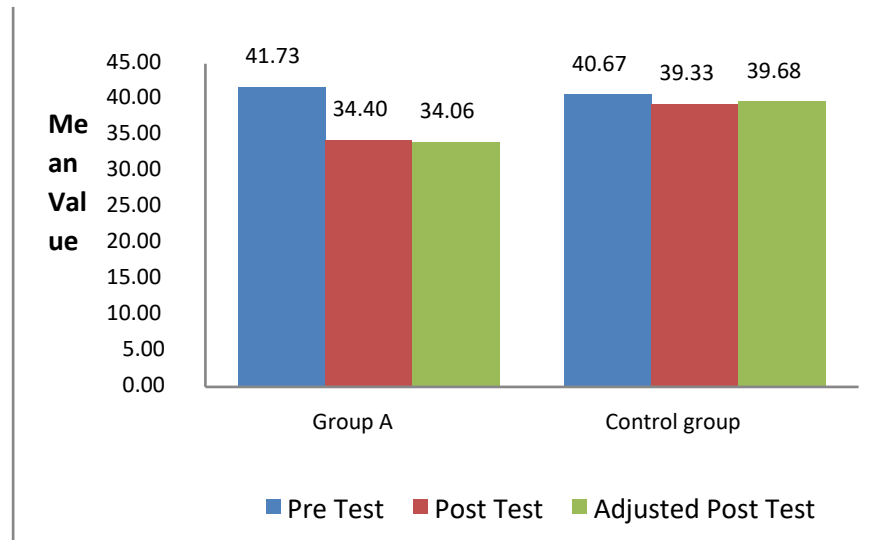


Fig. 2: Self-regard values of the pretest, posttest and adjusted posttest of the Yogic Practices and Control Groups.

population of older persons, Sivaramakrishnan *et al.* (2019) did a systematic review of the available data. Physical function and HRQoL outcomes from randomized/cluster randomised controlled trials published in English were considered for inclusion. Participants were 60 years of age or older on average and not recruited for a specific disease or condition. A meta-analysis was conducted, and standardised effect

sizes (Hedges' *g*) were calculated from random effects models and applied to the research of vote counting. Overall, 22 randomised controlled trials were included, yielding 27 records for analysis (17 RCTs assessed physical function and 20 assessed HRQoL). Compared to inactive controls, yoga practitioners showed statistically significant improvements in balance (effect size [ES] = 0.7), lower body flexibility [ES] = 0.5), and lower limb

strength [ES] = 0.45 in a meta-analysis, while yoga practitioners showed statistically significant improvements in lower limb strength [ES] = 0.49 and lower body flexibility [ES] = 0.28 compared to active controls. When comparing yoga to inactive controls, significant effects in favour of yoga were found in relation to depression (ES = 0.64), perceived mental health (ES = 0.6), perceived physical health (ES = 0.61), sleep quality (ES = 0.65), and vitality (ES = 0.31). When comparing yoga to active controls, significant effects in favour of yoga were found in relation to depression (ES = 0.54). There is now substantial evidence to include yoga as a recommended form of physical exercise for the elderly population, according to this study. Strength, balance, and flexibility are just few of the many aspects of physical health that yoga may help. The state of mind is also enhanced. The experimental group's post test data on sleep quality and self-regard improved considerably after the 16-week yogic intervention, as compared to the control group's data.

Conclusion

By establishing a favourable influence on health variables including sleep quality and depression, this research lends credence to the notion that yoga practises are a highly effective therapy for sleep disorders. In other words, the findings of this study give supporting evidence for the assertion.

References

- Bankar MA, Chaudhari SK and Chaudhari KD. (2013) Impact of long term Yoga practice on sleep quality and quality of life in the elderly. *J Ayurveda Integrative Med.* 4(1): 28-32.
- Dia Rekhi (2019) The young and sleepless. *The New Indian Express*, 6th June, 2019. <https://www.newindianexpress.com/cities/chennai/2019/jun/06/the-youngand-sleepless-1986499.html>
- Fabbri M, Beracci A, Martoni M, Meneo D, Tonetti L and Natale V. (2021) Measuring subjective sleep quality: A review. *Int J Environ Res Public Hlth.* 18(3): 1082.
- Horowitz M, Sonneborn D, Sugahara C and Maercker A. (1996) Self-regard: a new measure. *American J Psychiatry* 153(3): 382-385.
- Pollak CP, Thorpy MJ and Yager J. (2010) *The Encyclopedia of Sleep and Sleep Disorders* (3rd ed.). New York: Facts On File.
- Sexton-Radek K and Graci G. (2008) *Combating Sleep Disorders*. Westport, CT: Praeger Publishers.
- Sivaramakrishnan D, Fitzsimons C, Kelly P, Ludwig K, Mutrie N, Saunders DH and Baker G. (2019) The effects of yoga compared to active and inactive controls on physical function and health related quality of life in older adults- systematic review and meta-analysis of randomised controlled trials. *Int J Behavioral Nutrition Physical Activity* 16(1): 33.
- Walker M. (2017) *Why We Sleep: Unlocking the Power of Sleep and Dreams*. New Delhi: Scribner.
- Yi H, Shin K and Shin C. (2006) Development of the sleep quality scale. *J Sleep Res.* 15(3): 309-316.