

# Impact of Yoga Nidra in managing Kinesiophobia in women leaders with lower back pain

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## KEY WORDS

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## ABSTRACT

The objective of this study is to determine the effect of Yoga Nidra in ameliorating pain intensity and fear in people with Lower Back Pain. The study is a part of a corporate Yoga camp conducted in Bangalore, in which employees were encouraged to register for the yoga therapy workshop for four weeks. Two employees with an average age of 34 volunteered. The subjects underwent Yoga Nidra for four weeks for 45 minutes every day. Their sense of wellbeing improved after four sessions and the participants started responding well to the intervention. The primary outcome measuring source was The Tampa scale for Kinesiophobia. Yoga Nidra and Kinesiophobia were the Independent and Dependent variables used, respectively. The post analysis showed the efficiency of yoga Nidra in reducing fear and lower back pain. The results of this study on kinesiophobia established weak to moderate correlations. But the findings were important with a significant change from pre to post in Tampa Scale measure, thus indicating a shred of evidence to reject the null hypothesis. The results provide the needed scientific base for the health professionals to acknowledge the connection between fear and lumbago and how yoga can play a significant role in alleviating kinesiophobia.

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## Introduction

Back pain is one of the most common complaints seen in physician's offices (1–3). A 2012 systematic review by Hoy et al. estimated that the worldwide point prevalence of activity-limiting LBP lasting quite each day was 12% and for one month was 23% (4). The aetiology of back pain is not well researched and understood; however, the psychological, psychosocial/occupational, and physical factors are considered as strong causative factors (5).

Despite the ubiquity of back pain, the treatment provided in modern medicine is either unsatisfactory or a temporary relief. Alternative medicine, especially Yoga, had been procuring a place for itself by effectively providing a permanent cure or alleviating the condition to a greater extent to which the back pain does not interfere with the daily activities.

### *Yoga therapy – a modern perspective*

The word Yoga comes from the term “Yuj” which means to join. Yoga unites the body and mind when functioned independently, can never bring health to fruition. Yoga is not just asana, which comprises only one anga in Ashta-anga (eight limbs). The eight components guide conduct within society, personal discipline, postures/poses (asana), breathing, concentration, contemplation, mediation, and absorption/stillness. Optimal Yoga therapy should span yoga poses, breathing techniques, mediation, cleansing techniques along with counselling (it plays a pivotal role in treating phobia and phobia induced ailments).

Yoga's popularity has grown tremendously in the past several years. National Health Interview Survey data

conducted by the Centers for Disease Control and Prevention (CDC) show increased usage for complementary and alternative medicine (CAM) treatments. In 2007, yoga was the 7th most used CAM therapy (6). CAM therapies are used mostly to treat musculoskeletal conditions, back pain and to a lesser degree neck pain (6).

It is estimated that 73.3% of patients with lumbar back pain suffer from anxiety and depression (7,8). Besides, psychosocial factors (e.g., anxiety, fear, stress, somatization, and socioeconomic problems) harm patients with chronic low back pain. One psychological factor that has received much attention is fear, which exacerbates the intensity and persistence of pain (9,10). When a person encounters a fear of injury or possible re-injury, it causes physical stress along with mental trauma, which leads to an amplified pain response. So, the foremost step in battling phobia is to stay relaxed and try to mitigate the adversities of pain.

Emotion or mental state plays a significant role in influencing your body, as grouped under Adhija Vyadhi (mind induced Disease) in Yoga Vasishtha or Psychosomatic ailment in Consultative Psychiatry. Apart from Physical stressors, even emotional imbalance like fear and anxiety plays a prominent role in increasing Lower Back Pain (LBP). Kinesiophobia is a form of fear of pain due to movement or re-injury (11). It plays a significant role in increasing or worsening the pre-existing condition of lower back pain in the wider population, particularly affecting women on a larger scale. Non-Pharmacological intervention for Kinesiophobia includes alternative medicine such as yoga, Ayurveda, etc., which has proved beneficial in treating stress-induced psychosomatic

ailments since time immemorial. Nonetheless, to mention the ability to treat any condition at its root without any side effects. While pharmacological interventions might give immediate relief, but, by doing so, just the ailment is being suppressed, which indeed will resurge, leading to more complexities. So, it is wise to resort to alternative therapies if the ailment has not reached an extreme case where professional drugs are the last resort.

This study aims to determine the impact of Yoga Nidra on Kinesiophobia and the correlation between Kinesiophobia and Lower Back Pain. Few significant correlations have been investigated in previous research papers, which lays as a base for our study. We hypothesize that kinesiophobia is significantly correlated with pain, and Yoga Nidra can help mitigate the fear of injury or re-injury. The outcome of this study may provide a necessary understanding of the impact of Yoga Nidra in managing Kinesiophobia in women leaders with lower back pain.

### Case presentation

Participant 1 was a 34-year-old female who was diagnosed with Lumbago after the delivery of her second child. She was administered an epidural during her C-section, which caused her back pain in the first place, and she realised her fear of pain was getting acute, which contributed to increased pain intensity.

Participant 2 was a 35-year-old female Product Manager, who after having met with a minor car accident, was diagnosed with lower back pain and apparently, her fear of re-injury was the cause for her frequent bouts of pain.

### Recruitment of participants

The study is a part of a corporate Yoga camp conducted in Bangalore, in which employees were encouraged to register for the yoga therapy workshop for four weeks. Two employees with an average age of 34 volunteered. Both the participants were working in a managerial role, which is more demanding, and they had to work 10–11 hours a day on average. The patient’s written consent was taken as part of the ethical process. All the subjects underwent Yoga Nidra for four weeks (5 days/week) for 45 minutes every day. The participants were practising it in Shavasana in a very conducive environment, a closed and soundproof room. The primary outcome measuring source was The Tampa scale for Kinesiophobia. Yoga Nidra and Kinesiophobia were the Independent and Dependent variables used, respectively.

### Procedure

We collected data in the form of a questionnaire before and after four weeks of intervention. Tampa Scale of Kinesiophobia was used to access the pre and post data of the impact of Yoga Nidra on Kinesiophobia. Data were extracted manually and then entered in Microsoft excel. Mean and standard deviation values have been calculated and written in the results table. Scoring was based on a 4-point Likert scale where: Items

1, 2, 3, 5, 6, 7, 9, 10, 11, 13, 14, 15 and 17 are scored as follows: Strongly disagree (1), Disagree (2), Agree (3), Strongly agree (4). Items 4, 8, 12 and 16 are scored on the inverted scale: Strongly disagree (4), Disagree (3), Agree (2), Strongly agree (1).

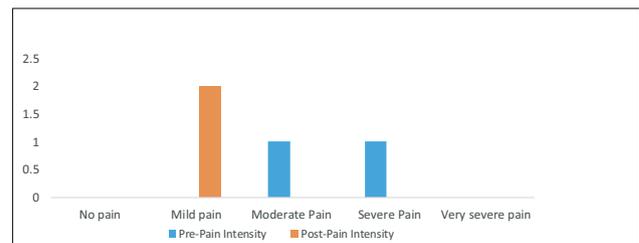
The final TSK score is formed by adding the points from all 17 items. TSK scores range from 17 to 68, where scores of 17 indicated no kinesiophobia and a score of 68 denoted extreme fear of pain with movement. In their 1995 study, Vlaeyen et al. introduced a cut-off of 37 for high scores, with scores below this value considered low (12). We compiled Pre and Post data and analyzed using Microsoft Excel’s data analysis tool. Yoga Nidra Pre and Post-study show some improvement in fear level (Kinesiophobia) and pain intensity. However, there is a scope for a future study to monitor the impacts of Yoga on Kinesiophobia and back pain, with different Yoga interventions such as Meditation techniques and Ashtanga practices to study the broader aspect of Yoga.

The post analysis showed the efficiency of Yoga Nidra in reducing fear and anxiety, which in turn had a positive impact on lower back pain. The results of this study on kinesiophobia established weak to moderate correlations. But the findings were significant,  $P = 0.02$  and  $t = 2.91$  (Mean and variance was calculated for Pre (Mean  $\pm$  SD) as  $42 \pm 7.07$ , Post (Mean  $\pm$  SD) as  $20 \pm 1.41$  and used Welch’s t-test to arrive at a t value of 2.91). The results provide the needed scientific base for the health professionals to acknowledge the connection between fear and lumbago and how yoga can play a significant role in alleviating kinesiophobia.

**Table 1.** Characteristics of the participants

Variable	Pre		Post		% Change	P Value
	Mean	SD	Mean	SD		
TAMPA	42	7.07	20	1.41	-52.4	0.02

n = 2.



**Figure 1.** Pre-Post Intensity Graph

### Sample

Data were available for two employees with an average age of 34. Both the participants were working in a managerial role, which is more demanding, and they had to work 10–11 hours a day on average. The subjects underwent Yoga Nidra for four

weeks (5 days/week) for 45 minutes every day. The participants were practicing it in Shavasana in a very conducive environment, a closed and soundproof room. The gender of the sample studied was Indian female. The mean age of participants was 34 years.

**Inclusion criteria**

- Women who were interested in the study
- Women with an underlying back pain condition
- Women with the condition of Kinesiophobia.

**Exclusion criteria**

- Uninterested in the study
- Men
- Women who had undergone spinal fracture or any surgical procedure in the past six months.
- Women suffering from depression or any other neurological disorder

**Table 2.** Demographics of study sample compared with Pain Intensity Pre and Post

Factor	Total Sample	Mean ± Standard Deviation	Percentage
34-35	2	Age 34 ± 0	100.
n	2	Gender	
Male	0	-	0
Female	2	-	100
n	2	Race	
Indian	2	-	100

\*TSK-Tampa Scale of Kinesiophobia.

Yoga Nidra Pre and Post-study show some improvement in fear level (Kinesiophobia) and pain intensity, but further research on kinesiophobia and pain intensity can be done with different interventions to deduce the effect of yoga in kinesiophobia.

**Table 3.** t value: Welch's t

	Mean	Variance	Observations	t Value	P Value
Pre Test	42	50	2	2.91	0.02
Post Test	20	2	2		

**Table 4.** Pain Intensity Scale

	Pre-Pain Intensity	Post-Pain Intensity	Percentage Change
No pain	0	0	0
Mild pain	0	2	-
Moderate Pain	1	0	-100
Severe Pain	1	0	-100
Very severe pain	0	0	0

**Discussion**

The objective of the current study is to find the correlation between kinesiophobia and lower back pain intensity in women leaders. The results, however, demonstrated a weak but statistically significant correlation between fear (kinesiophobia) and pain intensity. In my opinion, the current study presents weak but confirmatory evidence regarding the role of yoga Nidra in kinesiophobia and its associated low back pain.

According to the Pancha Kosha concept, any psychosomatic condition or ailment originates in manomaya kosha, which is the mind and percolates into other layers. So, to treat any underlying condition from its roots, mental health and afflictions should have the utmost consideration. Yoga Nidra connects the body with the mind, unleashes the healing powers, balances breathing, and thus balancing the emotions and minimizing the influence of fear and anxiety on lower back pain.

When beliefs and fear of movement are present in patients with lumbago, kinesiophobia must be considered within the management of patients with LBP. Patients got to remember that pain could also be misinterpreted as more severe than it is, causing them to be excessively cautious in their actions, thereby causing disability. Consistent with the biopsychosocial model, some individuals with musculoskeletal pain develop a chronic pain syndrome, the cognitive model of fear of movement/(re) injury, suggested by Vlaeyen, which is based on the fear of pain, or more specifically, the fear that physical activity may cause pain and/or recurrence of injury.

Two opposing behavioral responses are postulated: 1) individuals like better to face pain to reinforce, believing that the presence of pain doesn't justify the limitation of their functional activities, or 2) people maintain a fear of movement and believe that the activity is directly related to the presence of pain.

Previous studies had found a significant correlation between kinesiophobia and pain intensity in older persons with LBP. A recent study on Kinesiophobia demonstrated the effectiveness of yoga combined with back school intervention in people affected by Lower Back Pain by lowering anxiety, Kinesiophobia and disability. It also resulted in an improved Quality of life (12).

**Limitations**

In the present study, the participants underwent yoga Nidra for four weeks. The participants felt less anxious and calmer towards the end of the intervention period. Yoga Nidra had a positive effect on fear and pain intensity to a certain degree.

The design of this study stands as a limitation since we have calculated pre and post data only with the experiment group, thus scope for future studies with the control group. The current study was limited to women leaders who constitute a narrow percentage of the population. The possible limitation of this study is that it was catered only to women leaders working in the software industry. However, there is a

scope for a future intervention to monitor the impacts of Yoga on Kinesiophobia and back pain, with different Yoga interventions such as Meditation techniques and Ashtanga practices to study the broader aspect of Yoga.

### Future implications

We had positive changes in four weeks of Yoga Nidra intervention. However, there is a scope for cross-sectional studies as a cohort study with a larger sample size. Our study involved a more streamlined investigation of the impact of Yoga Nidra on Pain intensity and Kinesiophobia. Also, the study focuses on women leaders within the software. The participants had moderate levels of kinesiophobia and pain. Alongside, age is also a deciding factor in fear and movement. Hence, throwing more light on the assessment of age and its related entities might be considered for future studies.

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### Author contribution

The author has accepted responsibility for the entire content of this submitted manuscript and approved submission, and there is no co-author associated with this study.

### Informed consent

Yes.

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### Conflict of interest

None.

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