

# THE EFFECT OF YOGASANA AND NADI SHODHANA PRANAYAMA ON BACK PAIN AMONG MIDDLE-AGED HOUSEWIVES

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## Abstract

**Background:** Lower back pain (LBP) is a common issue among middle-aged housewives, often resulting from poor posture, weak back muscles, and stress. Non-pharmacological interventions such as yoga, including Yogasana and Nadi Shodhana Pranayama, have been explored for their therapeutic benefits in alleviating pain and improving quality of life. **Method:** The study included 50 middle-aged housewives with back pain. Participants were assessed for back pain severity using a Visual Analogue Scale (VAS) before and after a 1.5-month intervention involving daily practice of Yogasana and Nadi Shodhana Pranayama. Statistical analysis using paired t-tests was conducted to evaluate the impact of the intervention. **Results:** The results showed a significant reduction in mean back pain scores from 7.32 (SD = 1.78) pre-intervention to 4.55 (SD = 1.43) post-intervention ( $t = 29.37$ ,  $p < 0.0001$ ). This significant improvement highlights the effectiveness of the combined yogic practices in alleviating back pain. **Conclusions:** The study concludes that Yogasana and Nadi Shodhana Pranayama are effective non-pharmacological interventions for reducing back pain among middle-aged housewives. These practices improve physical flexibility, strengthen back muscles, and promote relaxation, addressing both the physical and psychological dimensions of pain. The findings underscore the importance of incorporating yoga into daily routines for sustainable health benefits and encourage further research on long-term effects and broader demographic applications.

**Keywords:** Back pain, Yogasana, Nadi Shodhana Pranayama, middle-aged women.

## INTRODUCTION

### Introduction to Yoga and Its Benefits

Yoga, an ancient practice developed over 5,000 years ago in India, is an integrated system for nurturing the body, mind, and spirit. It is a practical aid rather than a religion, and its techniques can be practiced by individuals from all faiths or philosophical beliefs. Yoga harmonizes the body, mind, emotions, and intellect, providing both curative and preventive benefits. Sage Patanjali encapsulated the essence of yoga in the Yoga Sutras, where it is described as a discipline for achieving balance and union between the self and the transcendental (Singh, 2018). Recent lifestyles characterized by physical inactivity and poor dietary habits have increased the prevalence of musculoskeletal problems and metabolic disorders, particularly among middle-aged individuals. Back pain is a common ailment, especially among women, due to factors such as poor posture, pregnancy, and menstrual cycles. Yoga, through physical postures (asanas), breathing exercises (pranayama), and relaxation techniques, helps relieve these conditions by improving flexibility, strengthening muscles, and boosting circulation.

### Yoga for Back Pain Management

By increasing awareness of posture and body mechanics, yoga reduces the risk of disability and builds muscle mass, protecting against future back pain. Studies have shown that regular yoga practice positively impacts lower back pain by alleviating discomfort, reducing stiffness, and enhancing quality of life (Chang et al., 2016).

### The Role of Nadi Shodhana Pranayama

Nadi Shodhana Pranayama (also known as Anulom-Vilom) is a breathing practice designed to purify the nadis, or energy channels, through controlled alternations of inhalation, exhalation, and breath retention (kumbhaka). This practice balances the flow of energy between the Ida and Pingala nadis, promoting mental clarity, stress reduction, and physical rejuvenation (Sakiya & Panda, 2011). The practice involves breathing in through one nostril while keeping the other

closed, then exhaling through the opposite nostril. Scientific studies indicate that Nadi Shodhana improves oxygen utilization, purifies the blood, and alleviates stress and anxiety (Singh & Devi, 2018). In certain medical contexts, kumbhaka is omitted due to the risk of improper execution. As such, modern yoga literature often refers to Anulom-Vilom as a simplified form of Nadi Shodhana Pranayama. This technique has been shown to strengthen the respiratory system, enhance concentration, and provide an immediate sense of peace and relaxation.

### **Yoga's Contribution to Holistic Health**

Yoga's scientifically structured approach offers therapeutic benefits for a wide range of conditions, including back pain, acidity, diabetes, arthritis, depression, and hypertension. By creating balance within the nervous and endocrine systems, yoga influences other bodily systems, promoting overall health. Laboratory studies have confirmed its efficacy in regulating autonomic functions like heart rate and blood pressure (Singh, 2018). Back pain, often caused by poor posture, weak muscles, or muscle tension, can become chronic if untreated. Yoga alleviates these issues by strengthening the back and abdominal muscles, improving flexibility, and promoting better posture. For women, yoga provides significant relief from back pain associated with menstruation and pregnancy. With its incredible healing power, yoga emerges as a holistic and effective tool for managing lower back pain and other physical ailments.

## **LITERATURE REVIEW**

Back pain, recognized as a common lifestyle disorder, is referred to as Kati Shoola in Ayurveda. Lower back pain (LBP) is defined as pain, muscle stiffness, or tension occurring between the costal margin and the inferior gluteal folds, with or without radiating leg pain or sciatica. It is one of the most prevalent conditions in modern society, often stemming from defects in the spinal column, intervertebral discs, or muscles. Yoga, an ancient Indian practice with a heritage of over 5,000 years, offers a comprehensive approach to improving physical, mental, and spiritual well-being. Its core practices include asanas (postures), pranayama (controlled breathing), and meditation (dhyana), which harmonize the physical and mental systems and address diverse health issues (Nagar, 2017).

### **Yoga and Back Pain Management**

Back pain provides a unique intersection between yoga therapy and other movement therapies. Although general yoga can help ease stress-related back pain, it may worsen conditions linked to joint issues, such as prolapsed discs or advanced spondylosis. The spine, essential for postural balance and neural communication, is made up of seven cervical, twelve thoracic, five lumbar, five fused sacral, and three to four fused coccygeal vertebrae. Its natural curvatures allow flexibility and shock absorption while preserving structural stability. However, activities like jumping or weight lifting can increase disc load and result in damage (Ananthanarayanan & Srinivasan, 1993; Finneson, 1980). Yoga addresses these issues by strengthening muscles, reducing tension, and improving flexibility. Asanas and pranayama elicit a "relaxation response" through the neuroendocrine system, reducing metabolism, blood pressure, muscle tension, and heart rate, while promoting stable brainwave patterns. Beyond physical benefits, yoga improves mental, emotional, intellectual, and spiritual health, making it a holistic approach for managing LBP and other chronic conditions.

### **The Role of Pranayama in Stress and Back Pain**

Pranayama, the controlled regulation of breath, is rooted in the Indian philosophical concept of prana (life energy). Techniques like Nadi Shodhana or alternate nostril breathing enhance parasympathetic activity, reduce basal sympathetic tone, and promote relaxation. By improving pulmonary, cardiovascular, and mental functions, pranayama reduces stress and its impact on physical health (Shah & Kothari, 2019; Joshi et al., 2013). The practice also highlights the bidirectional relationship between emotions and breathing, where controlled breathing positively influences emotional regulation.

### **Yoga Therapy as a Tailored Approach**

Yoga therapy modifies traditional yoga practices to address the unique needs of individuals with health concerns. Unlike general yoga classes, which may be unsuitable or even harmful for serious conditions, yoga therapy customizes its approach based on a person's medical condition, body constitution, and overall life circumstances. Stress and back pain, two primary contributors to sickness-related work absences, can be effectively managed with yoga therapy, which addresses not only physical symptoms but also psychological well-being. Although many seek yoga therapy to address specific health issues, they often experience broader benefits, as the approach emphasizes a holistic integration of body and mind. Sessions include balanced practices that both calm and vitalize the individual while targeting specific health concerns. This holistic method underscores yoga therapy's core principles and broader aims (Monro, 1997).

### Modern Relevance and Research

Yoga has been extensively studied in recent decades for its therapeutic applications in managing conditions such as psychological stress, joint pain, obesity, diabetes, and cardiovascular disorders. These studies demonstrate that yoga, whether used as a primary intervention or complementary to pharmacological therapy, offers significant physical and psychological benefits. The ultimate aim of yoga, however, extends beyond physical health to self-realization, aligning with its ancient roots in fostering a balanced and harmonious life (Jaiswal, 2009).

## OBJECTIVE OF THE STUDY

The aim of the study was to evaluate the effect of yogasanas and nadi shodhana pranayama on back pain among middle-aged housewives.

## RESEARCH METHODOLOGY

### Sample

- In present research 50 participants have been taken from Various society & hospitals located in Ahmedabad.
- Present study convenient sampling methods have been used.

### Inclusion criteria

- The person who has back pain of any age & gender has been considered for the study.
- The patients who have had back pain persisting from the last six months up to 10 years..

### Exclusion criteria

- Healthy individuals or individuals with other medical conditions have not been considered.
- The patients who have had back pain for the last 10 years have not been considered.

### Variables:

- In present research yogasana and nadi shodhana pranayama has been taken as an independent variable.
- Dependent variables are back pain.

### Tools:

Following tools have be used for data collection

- Numerical pain rating scale (NPRS)

## PROCEDURE

For data collection, prior approval was obtained from different societies and hospitals, and informed consent was secured from all participants. Participation was voluntary and solely for research purposes. After establishing the report with participants in a small manageable group, questionnaires, such as the Numerical pain rating scale (NPRS) were measured. After collecting data for questionnaires from the participants of the study, scoring of questionnaires was done as per the scoring key in manuals. After completion of the pre-test, each participant was given Yogic intervention for 1 and half months as per the Yogasana and nadi shodhana pranayama. After completing the yogic intervention for 1 and half months, as per the Yogasana And nadi shodhana pranayama against back pain, the same questionnaire was administered. After the post-test, data were arranged in an Excel sheet variable-wise.

### Intervention module:

<b>Yogasana practice</b>	<b>Duration</b>
<b>Prayer: 3 Om chanting, ॐ भूर्भुवः स्वः तत्सवितुर्वरेण्यं भर्गो देवस्य धीमहि धियो यो नः प्रचोदयात् ॥</b>	<b>3 mins</b>
<b>Hands - stretch breathing 3 stages each (5 times)</b>	<b>5 mins</b>
<b>Hands in and out breathing ( 3 to 5 times)</b>	<b>2 mins</b>
<b>Ardha Chakrasana</b>	<b>1 min</b>
<b>Ardhakati Chakrasana</b>	<b>1 min</b>
<b>Tiriyak asana</b>	<b>1 min</b>
<b>Simple trikonasana</b>	<b>1 min</b>
<b>Veer bhadrasana</b>	<b>1 min</b>
<b>Instant Relaxation Techniques (IRT)</b>	<b>1 min</b>

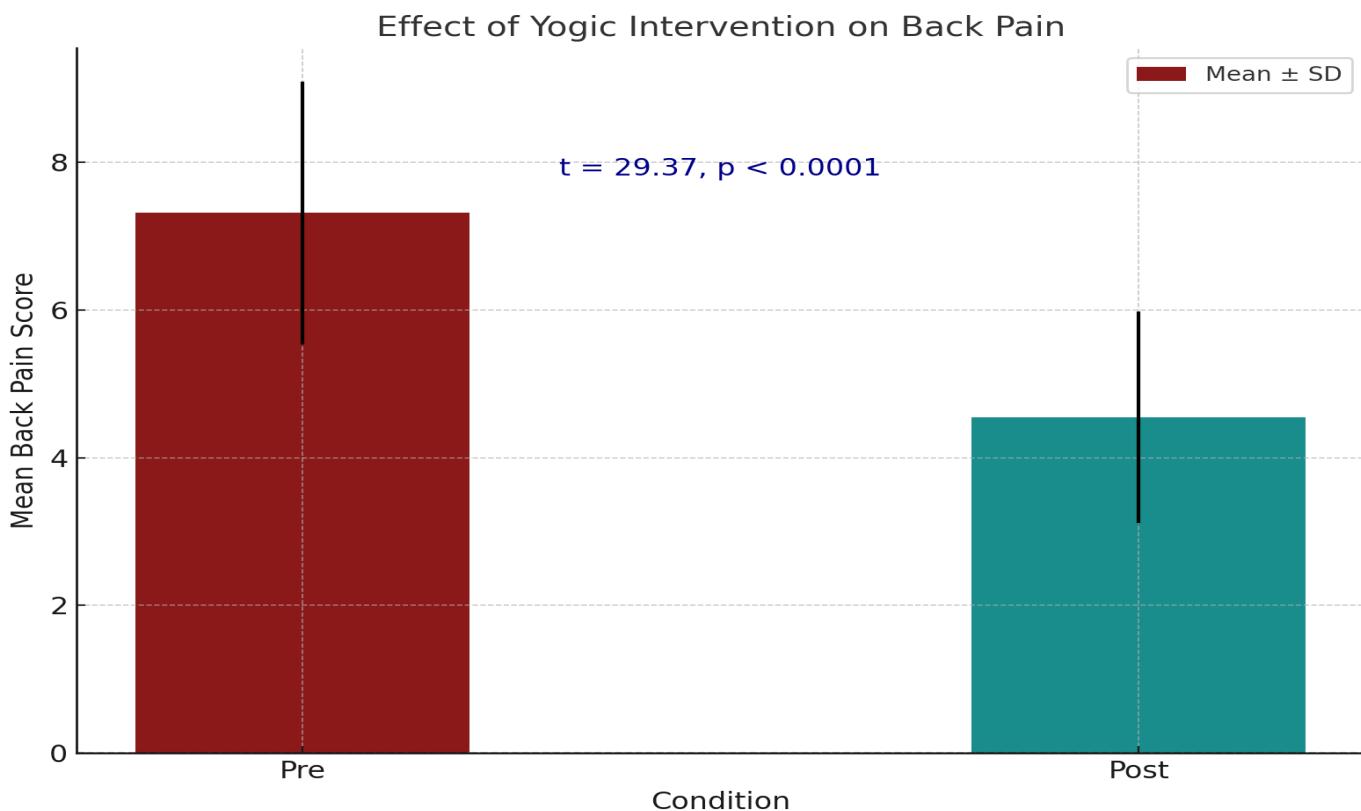
<b>Simple Ustrasana</b>	1 min
<b>shashankasana</b>	1 min
<b>Viprit Janu Sirsasana</b>	1 min
<b>Marjari asana</b>	1 min
<b>Makarasana</b>	1 min
<b>Bhujangasana</b>	1 min
<b>Simple Eka-pada salabhasana (alternate leg)</b>	2 mins
<b>Pawanmuktasana</b>	1 min
<b>Setubandhasana</b>	1 min
<b>Markatasana</b>	1 min
<b>Relaxation in Savasana</b>	2 mins
<b>Quick Relaxation Techniques (QRT)</b>	3 mins
<b>Pranayama:</b>	
<b>Nadi shodhana pranayama</b>	7 mins
<b>Ending Prayer: ॐ सर्वे भवन्तु सुखिनः सर्वे सन्तु निरामयाः ।</b> सर्वे भद्राणि पश्यन्तु मा कश्चिद्दुःखभाग्भवेत् । ॐ शान्तिः शान्तिः शान्तिः ॥	1 min
<b>Total</b>	<b>40 mins</b>

## DATA ANALYSIS & INTERPRETATION

Showing Mean SD and and T of Pre and Post of yogasana and nadi shodhana pranayama on back pain among middle aged housewives..

Table no.1

Data	N	Mean	SD	t	Level of significance
Pre	50	7.32	1.78	29.37	0.0001
Post	50	4.55	1.43		



## INTERPRETATION

Table 1 shows a t-value of 29.37 for the pre- and post-intervention back pain scores, which is statistically significant at the 0.0001 level. This finding leads to the rejection of the null hypothesis, which stated that Yogasana and Nadi Shodhana Pranayama have no significant effect on back pain among middle-aged housewives. The mean back pain score declined notably from 7.32 (pre-intervention) to 4.55 (post-intervention), with standard deviations of 1.78 and 1.43, respectively. These results confirm that the yogic practices effectively reduced back pain in the study group. Thus, Yogasana and Nadi Shodhana Pranayama can be considered promising non-pharmacological interventions for managing back pain in middle-aged housewives.

## DISCUSSION

The findings of this study demonstrate that the combined practice of Yogasana and Nadi Shodhana Pranayama significantly alleviates back pain among middle-aged housewives. The physical postures in Yogasana strengthen the back muscles, improve posture, and enhance spinal flexibility, collectively contributing to pain relief. Additionally, Nadi Shodhana Pranayama facilitates relaxation, reduces stress levels, and enhances oxygenation, which further aids in managing pain and promoting overall well-being. The integration of these practices offers a holistic, non-invasive approach to addressing back pain. This study highlights the potential for yoga to serve as an effective therapeutic intervention for managing musculoskeletal pain, particularly for individuals prone to stress-related or lifestyle-induced conditions. Future studies should investigate the long-term impact of Yogasana and Nadi Shodhana Pranayama on back pain and assess their effectiveness across various age groups, genders, and occupational backgrounds. Such studies could provide valuable insights into the broader implications of yoga as a sustainable health management tool.

## CONCLUSION

This study concludes that the combined practice of Yogasana and Nadi Shodhana Pranayama significantly reduces back pain among middle-aged housewives. These yoga practices enhance physical flexibility, strengthen back muscles, and promote mental relaxation, effectively addressing stress-induced pain. The findings underscore the value of incorporating simple, cost-effective yoga techniques into daily routines as a preventive and therapeutic approach for managing chronic back pain. Regular practice of Yogasana and Nadi Shodhana Pranayama not only alleviates pain but also contributes to overall well-being, emphasizing yoga's holistic benefits. Future research should focus on exploring the long-term effects of these practices and assessing their applicability across diverse populations to broaden their therapeutic potential.

## CONFLICT OF INTEREST

The study was carried out independently, without any external funding, sponsorship, or influence on its design, execution, analysis, or reporting. Its sole purpose was to examine the effects of yogasanas and nadi shodhana pranayama on back pain among middle-aged housewives. All ethical guidelines were strictly followed throughout the research process.

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