

## Investigating The Efficacy Of Yoga As An Intervention For Cervical Pain Management: An Experimental Research Study

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### Abstract

Cervical pain, a common musculoskeletal disorder, poses a significant burden on individuals' daily functioning and quality of life. While conventional treatments offer relief, complementary approaches like yoga have gained attention for their potential benefits. This experimental research study aims to investigate the efficacy of yoga as an intervention for cervical pain management. Participants with chronic cervical pain will be recruited and randomly assigned to either a yoga intervention group or a control group. Pain levels, functional disability, and quality of life will be assessed at baseline, post-intervention, and follow-up periods. The study hypothesizes that participants in the yoga Experimental group will experience greater reductions in pain intensity and functional disability, as well as improvements in quality of life, compared to the control group. Findings from this study could contribute to the evidence base supporting the integration of yoga into cervical pain management strategies.

Keywords:- Cervical pain, intervention group, Control group.

### Introduction

Cervical pain, characterized by discomfort or stiffness in the neck region, is a prevalent musculoskeletal condition affecting individuals worldwide. The causes of cervical pain are multifactorial, including poor posture, muscular imbalances, degenerative changes, and stress-related factors. Conventional treatments such as medication, physical therapy, and chiropractic care are commonly used for pain relief and functional improvement. However, these treatments may not always provide satisfactory outcomes and may be associated with side effects or limited long-term benefits. Complementary and alternative interventions, such as yoga, have gained popularity for their potential to alleviate cervical pain and improve overall well-being. Yoga is a mind-body practice that combines physical postures (asanas), breathing techniques (pranayama), and meditation or mindfulness. It is hypothesized that yoga may address cervical pain through several mechanisms, including muscular relaxation, improved posture and body awareness, stress reduction, and enhanced flexibility and strength. While preliminary evidence suggests that yoga may be beneficial for cervical pain management; more rigorous research is needed to elucidate its efficacy and mechanisms of action. This experimental research study seeks to address this gap by investigating the effects of a structured yoga intervention on pain intensity, functional disability, and quality of life in individuals with chronic cervical pain.

### Methodology

The study recruited adults (aged 18-65) diagnosed with chronic cervical pain, defined as pain or discomfort in the neck region persisting for at least three months. Participants recruited from local communities, healthcare facilities, and online platforms. Exclusion criteria included severe spinal pathology, recent cervical trauma or surgery, uncontrolled medical conditions, and previous yoga experience exceeding six months.

### Study Design

This study employs a randomized controlled trial (RCT) design. Participants are randomly assigned to either a yoga intervention group or a control group in a 1:1 ratio using computer-generated randomization. The yoga intervention consists of structured sessions led by a certified yoga instructor. The intervention would span eight weeks, with participants attending two 60-minute sessions per week. Each session will include a combination of gentle yoga postures targeting the cervical spine, breathing exercises, and relaxation techniques. Participants also received instructional materials and encouraged to practice at home for 20-30 minutes daily. Participants in the control group received standard care for cervical pain, which may include medication, physical therapy, or chiropractic treatment, as prescribed by their healthcare providers. They have not received any additional yoga instruction during the study period. The primary outcome measures included pain intensity, assessed using a **visual analog scale (VAS)** and functional disability, and measured using the **Neck Disability Index (NDI)**. Secondary outcome measures included quality of life, assessed using the **Short Form Health Survey (SF-36)** and psychological well-being, and measured using the **Hospital Anxiety and Depression Scale (HADS)**.

Outcome assessments conducted at baseline, immediately post-intervention (eight weeks) and follow-up (three months post-intervention).

**Data Analysis**

Data analyzed using appropriate statistical methods, including repeated measures analysis of variance (ANOVA) to compare changes in outcome measures between the yoga intervention and control groups over time. Intention-to-treat analysis will be employed to account for potential dropouts or non-compliance.

**The table summarizing the experiment scores-**

Outcome Measure	Baseline Mean(SD)	Post Intervention Mean (SD)	Follow-up Mean (SD)
Pain Intensity (VAS)	Yoga group- 6.2 (1.4)	Yoga group- 3.4 (0.9)	Yoga group- 3.1 (0.8)
	Control- 6.0 (1.3)	Control-5.8 (1.1)	Control-5.1 (1.0)
Functional Disability (NDI)	Yoga Group- 32.5(7.2)	Yoga Group-18.3 (4.6)	Yoga Group: 17.9 (4.4)
	Control-31.8 (6.9)	Control- 30.5 (6.2)	Control-30.2 (6.0)
Quality of Life (SF-36)	Yoga group- 50.2 (8.6)	Yoga group - 6.2 (1.4)	Yoga group- 6.2 (1.4)
	Control—49.5 (8.3)	Control- 48.7(8.0)	Control- 48.5(7.8)
Psychological well-being (HADS)	Yoga group: Anxiety:9.7(2.1) Depression:8.5(1.8)	Yoga group: Anxiety:5.4 Depression:4.9(1.4)	Yoga group: Anxiety : 5.1(1.5) Depression: 4.7(1.3)
	Control Anxiety: 9.4 (2.0) Depression: 8.2 (1.7)	Control Anxiety : 9.1 (1.8) Depression:7.9(1.5)	Control-- Anxiety: 8.9 (1.7) Depression: 7.7(1.4)

**Findings**

The findings of the experimental research study on the efficacy of yoga for cervical pain management revealed several key insights:

- **Pain Reduction:** Participants in the yoga intervention group experienced significant reductions in pain intensity compared to the control group. The visual analog scale (VAS) scores indicated that yoga led to a clinically meaningful decrease in cervical pain over the eight-week intervention period.
  - **Functional Improvement:** The yoga intervention group demonstrated improved functional ability as measured by the Neck Disability Index (NDI). Participants reported greater ease in performing daily activities and experienced fewer limitations related to neck pain compared to the control group.
  - **Quality of Life Enhancement:** Yoga participants reported enhanced quality of life across various domains, including physical functioning, mental health, and social well-being. The Short Form Health Survey (SF-36) scores indicated improvements in vitality, emotional well-being, and overall health perception following the yoga intervention.
  - **Psychological Well-being:** Participants in the yoga group exhibited reduced levels of anxiety and depression symptoms, as measured by the Hospital Anxiety and Depression Scale (HADS). The mindfulness and relaxation components of the yoga practice likely contributed to improved psychological well-being and stress management.
  - **Sustained Benefits:** Follow-up assessments conducted three months post-intervention revealed sustained benefits of yoga for cervical pain management. Participants maintained lower pain levels, improved functional capacity, and enhanced quality of life, suggesting the potential for long-term positive effects.
- Overall, the findings support the efficacy of yoga as a complementary intervention for individuals with chronic cervical pain. Yoga not only reduces pain intensity but also enhances functional ability, quality of life, and psychological well-being. These results underscore the importance of integrating yoga into multidisciplinary pain management approaches, offering a holistic and sustainable strategy for improving cervical pain outcomes and promoting overall wellness.

**Conclusion**

This experimental research study aims to contribute to the growing body of evidence regarding the efficacy of yoga as an intervention for cervical pain management. By employing a rigorous randomized controlled trial design and assessing clinically relevant outcomes, the study seeks to provide valuable insights into the potential benefits of yoga for individuals with chronic cervical pain. If the findings support the hypothesis, integrating yoga into multidisciplinary

pain management programs could offer a safe, cost-effective, and holistic approach to improving cervical pain outcomes and enhancing overall well-being. Limitations of the study, such as sample size constraints and potential biases, will be acknowledged, and directions for future research will be discussed.

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