

Effect of Yoga Therapy on Neck Pain Among Prolonged Computer Users: An Observational Pre-Post Study

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Abstract: Neck pain is a highly prevalent musculoskeletal disorder affecting individuals engaged in prolonged computer work. The increased reliance on digital technology has led to longer periods of sitting and static postures, which significantly contribute to cervical spine strain. The present observational pre-post study evaluated the effectiveness of a structured yoga therapy program in reducing neck pain and disability among prolonged computer users.

Thirty-two participants aged between 20 and 40 years who reported chronic neck pain and daily computer use exceeding five hours were recruited for the study. Participants underwent a structured yoga therapy intervention for three weeks consisting of 45-minute sessions conducted five days per week. The yoga module included Sukshma Vyayama, Bhujangasana, Marjariasana, Shashankasana, Anulom Vilom, Bhramari, and Yoga Nidra.

Pain intensity and functional disability were assessed using the Visual Analog Scale (VAS) and the Neck Disability Index (NDI). Pre- and post-intervention comparisons were performed using paired *t*-tests. The results demonstrated a statistically significant reduction in both pain intensity and disability following the intervention ($p < .001$).

These findings suggest that yoga therapy can serve as a safe, cost-effective, and holistic intervention for managing neck pain among computer users. Incorporating yoga into occupational health programs may help reduce the burden of work-related musculoskeletal disorders.

Keywords: Yoga therapy, neck pain, computer users, cervical spine, observational study, VAS, NDI

I. INTRODUCTION

The rapid expansion of computer-based work has significantly altered occupational behavior across the world. Office workers, students, and professionals now spend prolonged periods interacting with computers and digital devices. Although technological advancement has improved efficiency and productivity, it has also contributed to a growing prevalence of work-related musculoskeletal disorders.

Among these conditions, neck pain has emerged as one of the most common complaints. Sustained static posture, forward head positioning, repetitive movements, and poor ergonomic design increase mechanical stress on the cervical spine. Over time, these factors can lead to muscular imbalance, reduced flexibility, and chronic pain.

The cervical spine is a highly mobile region responsible for supporting the weight of the head and facilitating movement. Prolonged flexion of the neck during computer work increases compressive forces on cervical vertebrae and surrounding musculature. This mechanical overload may contribute to muscle fatigue, ligament strain, and joint dysfunction.

Yoga therapy has gained increasing attention as a complementary approach to musculoskeletal rehabilitation. Yoga integrates physical postures, breathing regulation, and relaxation techniques, providing both physical and psychological



benefits. Previous research has indicated that yoga can improve flexibility, reduce stress, and enhance musculoskeletal function.

Despite increasing evidence supporting yoga for musculoskeletal conditions, limited studies have focused specifically on computer-related neck pain. Therefore, the present study aimed to evaluate the effectiveness of a short-term yoga therapy intervention among prolonged computer users.

II. REVIEW OF LITERATURE

Several studies have investigated the relationship between prolonged computer work and neck pain. Epidemiological research suggests that individuals who spend extended periods at computer workstations are at increased risk of developing musculoskeletal disorders.

Ariens et al. (2001) reported that prolonged neck flexion and static sitting posture are significant risk factors for neck pain among office workers. Similarly, Szeto et al. (2005) found that symptomatic computer users demonstrated greater muscle activity in the upper trapezius compared with asymptomatic individuals.

Exercise therapy has frequently been recommended for the management of neck pain. Gross et al. (2015) reported that therapeutic exercises can improve cervical mobility and reduce pain intensity. However, exercise interventions alone may not address psychosocial stress associated with chronic musculoskeletal conditions.

Yoga therapy offers a multidimensional approach that integrates physical, mental, and breathing components. Field (2011) suggested that yoga improves flexibility and reduces muscle tension while enhancing parasympathetic activity. Likewise, Büssing et al. (2012) observed that yoga interventions significantly reduced pain-related disability in individuals with chronic musculoskeletal disorders.

These findings suggest that yoga may serve as an effective intervention for managing neck pain among computer users.

III. METHODOLOGY

Study Design

A prospective observational pre–post intervention study design was used.

Participants

Thirty-two participants aged 20–40 years experiencing chronic neck pain were recruited through convenience sampling. All participants reported daily computer usage exceeding five hours.

Inclusion Criteria

- Age between 20 and 40 years
- Computer use \geq 5 hours per day
- Chronic neck pain lasting more than three months
- Willingness to participate

Exclusion Criteria

- Cervical spine surgery
- Neurological disorders
- Acute spinal injuries
- Ongoing physiotherapy or other interventions

Intervention Protocol

Participants attended yoga sessions five days per week for three weeks. Each session lasted approximately 45 minutes.

Session Components

Warm-up: Sukshma Vyayama

Asanas: Bhujangasana, Marjariasana, Shashankasana

Breathing Practices: Anulom Vilom, Bhramari

Relaxation: Yoga Nidra



Outcome Measures

Pain intensity was measured using the Visual Analog Scale (VAS), and functional disability was assessed using the Neck Disability Index (NDI). Assessments were conducted before and after the intervention.

Statistical Analysis

Data were analyzed using descriptive statistics and paired t-tests. A significance level of $p < .05$ was considered statistically significant.

IV. RESULTS

The analysis revealed significant improvements in pain intensity and disability following the yoga therapy intervention.

VAS Scores

Pre-intervention mean: 7.25 ± 0.85

Post-intervention mean: 3.10 ± 0.92

NDI Scores

Pre-intervention mean: 28.4 ± 3.5

Post-intervention mean: 14.2 ± 2.8

Paired t-test analysis demonstrated a statistically significant reduction in both VAS and NDI scores after the three-week yoga intervention ($p < .001$).

V. DISCUSSION

The findings of the present study demonstrate that a short-term yoga therapy intervention significantly reduced neck pain and disability among prolonged computer users. These results are consistent with previous research highlighting the benefits of yoga for musculoskeletal rehabilitation.

Yoga postures enhance muscular flexibility and strengthen cervical stabilizing muscles. This may improve spinal alignment and reduce mechanical stress on cervical structures. Additionally, breathing practices promote relaxation and activate the parasympathetic nervous system, which helps reduce stress-related muscle tension.

Another possible explanation for the observed improvement is increased body awareness. Yoga encourages mindful movement and posture correction, which may help individuals adopt healthier sitting positions during computer work.

The results of this study suggest that yoga therapy may serve as an effective adjunct to conventional physiotherapy interventions. However, further large-scale studies are required to confirm these findings.

VI. CONCLUSION

The present observational study indicates that yoga therapy significantly improves neck pain and functional disability among prolonged computer users. A structured three-week yoga program resulted in substantial reductions in pain intensity and disability scores.

Yoga therapy represents a safe, low-cost, and accessible intervention that can be incorporated into workplace health promotion programs. Future research should explore long-term outcomes and larger sample sizes to further establish the therapeutic benefits of yoga for occupational musculoskeletal disorders.

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