

Physiotherapy Management of Neck Pain: Current Evidence and Clinical Implications- A Narrative Review

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ABSTRACT

Neck pain is one of the most common musculoskeletal disorders worldwide and represents a major cause of disability affecting individuals across all age groups. The increasing prevalence of sedentary lifestyles, prolonged use of smartphones and computers, poor posture, occupational stress, and inadequate ergonomic practices has contributed significantly to the global burden of neck pain. Beyond physical discomfort, neck pain adversely affects psychological well-being, social participation, work productivity, and overall quality of life. Physiotherapy is widely recognized as a first-line conservative treatment approach for neck pain and focuses on evidence-based interventions aimed at pain reduction, restoration of mobility, improvement of functional capacity, and prevention of recurrence.

This narrative review evaluates current evidence regarding physiotherapy management strategies for neck pain and discusses their clinical implications. Relevant literature was reviewed from databases including PubMed, Google Scholar, and the Cochrane Library. Evidence suggests that exercise therapy remains the cornerstone of physiotherapy management. Strengthening exercises targeting deep cervical flexor muscles, stretching of shortened musculature, and mobility exercises demonstrate substantial improvement in pain and functional outcomes. Manual therapy techniques such as joint mobilization, manipulation, and soft tissue release are also effective, especially when combined with exercise therapy.

Electrotherapy modalities including transcutaneous electrical nerve stimulation (TENS), ultrasound, and interferential therapy (IFT) may provide temporary pain relief when used as adjunctive interventions. Postural correction and ergonomic modifications are essential in both treatment and prevention, particularly in individuals exposed to prolonged computer and smartphone use. Patient education and adherence to home exercise programs further contribute to successful long-term outcomes.

Current evidence strongly supports a multimodal physiotherapy approach that integrates exercise therapy, manual therapy, ergonomic correction, and patient education. Early intervention and individualized rehabilitation strategies are crucial for reducing disability, improving quality of life, and preventing chronicity.

KEYWORDS

Neck Pain, Physiotherapy, Manual Therapy, Exercise Therapy, Ergonomics, Rehabilitation

INTRODUCTION

Neck pain is a highly prevalent musculoskeletal disorder and one of the leading causes of disability worldwide. It affects approximately 30–50% of the adult population annually and is associated with significant socioeconomic and healthcare burdens [1,2]. The prevalence of neck pain has increased substantially over recent decades due to changing lifestyles, increased use of digital devices, prolonged sitting, poor postural habits, and reduced physical activity [3]. Individuals working in office-based occupations, students, healthcare workers, and those involved in repetitive tasks are particularly susceptible to developing neck pain.

Neck pain can be classified into acute, subacute, and chronic forms depending on the duration of symptoms. Acute neck pain typically lasts less than six weeks, subacute pain persists between six weeks and three months, whereas chronic neck pain continues beyond three months [4]. Symptoms commonly include stiffness, reduced cervical range of motion, muscle tightness, headaches, and occasionally radiating pain into the upper extremities. If left untreated or improperly managed, neck pain may lead to chronic disability, impaired work productivity, reduced social interaction, sleep disturbances, and psychological distress such as anxiety and depression [5].

The etiology of neck pain is multifactorial and includes mechanical, postural, degenerative, traumatic, occupational, and psychosocial factors. Mechanical neck pain is the most common form and is usually associated with prolonged static postures, repetitive movements, muscle imbalance, and cervical joint dysfunction [6]. Forward head posture and prolonged flexed neck positions during smartphone and computer use are major contributing factors in the modern population.

Physiotherapy has emerged as one of the most effective conservative approaches for the management of neck pain. Contemporary physiotherapy interventions focus on reducing pain, restoring mobility, improving muscular strength and endurance, correcting posture, and preventing recurrence [7]. Evidence-based physiotherapy interventions include exercise therapy, manual therapy, electrotherapy modalities, ergonomic modifications, postural retraining, and patient education.

Exercise therapy is widely regarded as the cornerstone of physiotherapy management. Deep cervical flexor strengthening exercises, stretching exercises, and mobility training have demonstrated significant improvements in pain intensity and functional disability [8]. Manual therapy techniques, including mobilization and manipulation, are also commonly employed to restore cervical joint mechanics and reduce muscle tension [9]. Additionally, patient education regarding posture correction, ergonomics, and self-management strategies plays a critical role in long-term recovery.

The growing burden of neck pain highlights the need for effective, evidence-based rehabilitation approaches. Therefore, this narrative review aims to evaluate current evidence regarding physiotherapy management of neck pain and discuss its clinical implications for improving patient outcomes. [10]

METHODOLOGY

This narrative review was conducted through a comprehensive analysis of published literature related to physiotherapy management of neck pain. Relevant articles were identified using electronic databases including PubMed, Google Scholar, Cochrane Library, and other peer-reviewed sources.

Inclusion Criteria:

- Studies related to physiotherapy management of neck pain
- Randomized controlled trials
- Systematic reviews and meta-analyses
- Clinical studies evaluating physiotherapy interventions
- Articles published in English language

Exclusion Criteria:

- Surgical management studies
- Non-peer-reviewed articles
- Animal studies
- Studies lacking sufficient methodological clarity
- A total of relevant studies were reviewed to summarize current evidence.

Pathophysiology and Risk Factors of Neck Pain

Neck pain is commonly associated with dysfunction of cervical muscles, ligaments, intervertebral discs, facet joints, and neural structures. Poor posture, repetitive strain, and prolonged static positioning lead to muscular imbalance and increased stress on cervical structures [10]. Forward head posture causes excessive loading on cervical extensor muscles and altered biomechanics of the cervical spine, resulting in pain and stiffness.

Muscle imbalance involving weakness of deep cervical flexors and tightness of superficial cervical musculature contributes significantly to chronic neck pain [11]. Reduced activation and endurance of deep cervical flexor muscles impair cervical stability and increase strain on surrounding structures.

Degenerative changes such as cervical spondylosis, disc degeneration, and osteoarthritis are also important contributors, particularly in older adults [12]. Psychological stress, anxiety, depression, and occupational dissatisfaction may further increase pain perception and contribute to chronicity.

Risk factors associated with neck pain include:

- Prolonged computer and smartphone use
- Sedentary lifestyle
- Poor posture
- Occupational stress
- Repetitive movements
- Previous neck injury
- Sleep disturbances
- Psychological factors

- Inadequate ergonomics

Understanding these risk factors is essential for developing comprehensive rehabilitation strategies.

Physiotherapy Management (Evidence-Based Approaches)

4.1 Exercise Therapy

Exercise therapy is considered the cornerstone of physiotherapy management for neck pain and is supported by strong scientific evidence [13]. It aims to improve muscular strength, endurance, flexibility, and cervical mobility while reducing pain and disability.

Deep Cervical Flexor Strengthening

Deep cervical flexor muscles play a critical role in maintaining cervical stability and posture. Patients with neck pain often demonstrate reduced activation and endurance of these muscles [3]. Specific strengthening exercises targeting the longus colli and longus capitis muscles improve cervical stability and reduce pain.

Examples include:

- Cranio-cervical flexion exercises
- Chin tuck exercises
- Isometric cervical strengthening

Research has shown that deep cervical flexor training significantly improves pain intensity, posture, and functional outcomes in patients with chronic neck pain [8].

Stretching Exercises

Muscle tightness is frequently observed in the upper trapezius, levator scapulae, sternocleidomastoid, and pectoral muscles. Stretching exercises help reduce muscle tension, improve flexibility, and restore normal movement patterns.

Common stretching exercises include:

- Upper trapezius stretching
- Levator scapulae stretching
- Pectoralis stretching
- Cervical lateral flexion stretches

Regular stretching has been associated with improved cervical range of motion and reduced stiffness. [15]

Mobility Exercises

Mobility exercises help restore cervical joint movement and reduce stiffness. Active range of motion exercises are particularly useful in acute and subacute neck pain.

Examples include:

- Cervical rotation exercises
- Flexion-extension movements
- Side bending exercises
- Thoracic mobility exercises

Mobility training also improves circulation and reduces muscle guarding.

Endurance and Functional Training

Chronic neck pain is often associated with reduced muscular endurance. Functional training programs focusing on postural endurance and scapular stabilization have shown beneficial effects.

Exercise therapy has consistently demonstrated positive outcomes in both acute and chronic neck pain populations [4,14].

RESULTS

The reviewed literature consistently demonstrates that physiotherapy is effective in reducing pain, improving cervical mobility, and enhancing functional outcomes in individuals with neck pain. Exercise therapy, particularly deep cervical flexor strengthening and stretching exercises, showed significant benefits in both acute and chronic neck pain conditions. Studies also reported improvements in posture, muscular endurance, and quality of life following structured exercise programs.

Manual therapy techniques, including cervical mobilization, manipulation, and soft tissue release, were found to provide additional short-term pain relief and improved joint mobility, especially when combined with exercise therapy. Electrotherapy modalities such as TENS, ultrasound, and interferential therapy were effective for temporary symptomatic relief; however, evidence suggests that these modalities are more beneficial when integrated with active rehabilitation programs.

Ergonomic interventions and postural correction strategies demonstrated an important role in preventing recurrence and reducing mechanical stress on cervical structures. Patient education and adherence to home exercise programs were also associated with better long-term outcomes and improved self-management.

DISCUSSION

This review highlights the important role of physiotherapy in the conservative management of neck pain. Current evidence strongly supports the use of exercise therapy as the foundation of rehabilitation. Deep cervical flexor strengthening exercises improve cervical stability, reduce muscular imbalance, and help restore normal posture and movement patterns. Stretching and mobility exercises further contribute to pain reduction and improved functional performance.

Manual therapy techniques are widely used in clinical practice and have demonstrated effectiveness in improving cervical range of motion and decreasing pain intensity. The combination of manual therapy and exercise therapy appears to provide superior outcomes compared with isolated interventions. These findings emphasize the importance of integrating active and passive treatment approaches for optimal rehabilitation.

Electrotherapy modalities remain commonly used adjunct interventions for pain management. Although they may provide short-term relief, evidence indicates that passive modalities alone are insufficient for long-term recovery. Therefore, physiotherapists should prioritize active rehabilitation strategies over dependency on electrotherapy alone.

The increasing use of smartphones, computers, and prolonged sitting has contributed significantly to postural dysfunction and mechanical neck pain. Ergonomic modifications and postural correction are therefore essential components of modern physiotherapy management. Patient education regarding posture, activity

modification, and self-management strategies plays a critical role in preventing recurrence and improving adherence to rehabilitation programs.

Despite strong evidence supporting physiotherapy interventions, variability in patient presentation, psychosocial influences, occupational demands, and treatment adherence may affect outcomes. Individualized treatment planning is therefore necessary to achieve the best clinical results.

CLINICAL IMPLICATIONS

- Physiotherapists should adopt a multimodal treatment approach
- Individualized treatment plans are essential
- Emphasis should be on active rehabilitation rather than passive modalities
- Patient education and ergonomics must be integrated into treatment

CONCLUSION

Neck pain is a highly prevalent musculoskeletal disorder that significantly affects physical function, work productivity, and quality of life. Physiotherapy remains an effective and evidence-based conservative treatment approach for managing neck pain. Current evidence strongly supports the use of multimodal physiotherapy interventions, including exercise therapy, manual therapy, ergonomic correction, postural retraining, and patient education.

Exercise therapy, particularly deep cervical flexor strengthening and mobility exercises, forms the cornerstone of rehabilitation. Manual therapy provides additional benefits when combined with active exercise programs, while ergonomic interventions and posture correction help prevent recurrence.

Early intervention, individualized rehabilitation programs, and active patient participation are key factors in achieving successful outcomes and reducing chronic disability associated with neck pain.

FUTURE DIRECTIONS

Future research should focus on evaluating the long-term effectiveness of physiotherapy interventions for neck pain and developing standardized rehabilitation protocols. Studies exploring individualized treatment approaches based on patient-specific characteristics, occupational demands, and psychosocial factors are needed.

The role of digital rehabilitation, telerehabilitation, wearable posture-monitoring devices, and virtual exercise supervision should also be investigated to improve accessibility and treatment adherence. Further research comparing different exercise intensities, manual therapy techniques, and multimodal rehabilitation strategies may help optimize clinical outcomes and establish stronger evidence-based guidelines.

LIMITATIONS

This narrative review has several limitations. Only English-language studies were included, which may have excluded relevant research published in other languages. As a narrative review, the methodology is more susceptible to selection bias compared to systematic reviews and meta-analyses.

Additionally, variations in study design, intervention protocols, outcome measures, and follow-up duration among the reviewed studies limited direct comparison of findings. Many studies primarily focused on short-term outcomes, while evidence regarding long-term effectiveness and recurrence prevention remains limited.

Furthermore, psychosocial and occupational factors influencing neck pain were not extensively evaluated in all included studies.

SCOPE OF THE STUDY

This review provides a comprehensive overview of current evidence regarding physiotherapy management of neck pain and highlights clinically effective rehabilitation strategies. The findings may help physiotherapists, rehabilitation specialists, and healthcare professionals develop evidence-based treatment plans for individuals with neck pain.

The study also emphasizes the importance of multimodal rehabilitation approaches involving exercise therapy, manual therapy, ergonomic interventions, and patient education. It may serve as a useful reference for future clinical research, educational purposes, and development of rehabilitation guidelines aimed at improving patient outcomes and reducing the global burden of neck pain.

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Conflict of Interest

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