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Role Of Exercise In Frozen Shoulder: Brief Review

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Abstract

Frozen shoulder, also known as adhesive capsulitis, is a condition characterized by stiffness and pain in the shoulder joint, progressively restricting range of motion and affecting daily activities. It predominantly affects individuals aged 40–60 years and is more common in females. Exercise therapy is a cornerstone of conservative management and is aimed at restoring mobility and reducing pain. This article provides a concise review of the role of exercises in the management of frozen shoulder, highlighting the phases of the condition, types of therapeutic exercises, and the evidence supporting their use.

Keywords: Frozen shoulder, adhesive capsulitis, exercise therapy, physiotherapy, shoulder rehabilitation

Introduction

Adhesive capsulitis, another name for frozen shoulder, is a common but frequently misdiagnosed musculoskeletal condition marked by stiffness, increasing shoulder discomfort, and a marked restriction of both active and passive range of motion [(1)]. People between the ages of 40 and 60 are usually affected, and women and those with metabolic syndromes including diabetes mellitus, hypothyroidism, and cardiovascular disease are more likely to have it. [(2,3)] Frozen shoulder can have a significant influence on productivity and quality of life in India, where the prevalence of non-communicable diseases is on the rise, especially for working-age individuals and the elderly. [(4)]

Adhesive capsulitis affects functional independence and can last for months to years, even if it is self-limiting. [(5)] Freezing, freezing, and thawing are the three overlapping stages of the normal illness course, each of which calls for a distinct treatment strategy. [(6)] Conservative management of frozen shoulder is difficult due to its complicated etiology and varied clinical appearance. Exercise treatment has been demonstrated to be both necessary and effective among non-invasive interventions, especially when recommended in accordance with the disease's stage. [(7,8)]

Physiotherapy is becoming a popular and affordable treatment option in India, where access to healthcare is frequently restricted in rural and peri-urban areas. [(9,10)] Using structured exercise regimens to treat musculoskeletal disorders like frozen shoulder is consistent with larger public health campaigns that support community-based rehabilitation (CBR). [(11)] Nevertheless, there is still a dearth of data supporting the application of stage-specific exercise treatment in India, especially in basic healthcare settings. [(12,13)]

Furthermore, while having the skills to provide successful therapies for musculoskeletal problems, physiotherapists are underutilized in community health programs. [14]

For frozen shoulder, community-based physical therapy can lessen the need for pharmaceutical and surgical treatments, which are sometimes prohibitively expensive or unavailable in places with limited resources. [15] Especially for chronic conditions like adhesive capsulitis, integrating physiotherapy services into primary and community healthcare models, like India's National Programme for Rehabilitation of Persons with Disabilities (NPRPD), can help close the gap between institutional care and home-based management. [16,17] Additionally, focused education and policy support are needed to raise patient and healthcare professional understanding of the role that therapeutic exercises play in addressing frozen shoulder. [18]

Therefore, this review aims to highlight the role of exercise therapy in the management of frozen shoulder, focusing on stage-specific protocols and their clinical effectiveness. It also seeks to provide insight into how physiotherapists can integrate exercise therapy into both institutional and community-based settings for the holistic rehabilitation of individuals affected by this condition.

Method

In order to describe and emphasize the function of exercises in the treatment of frozen shoulder, this review was carried out using a narrative method. An electronic search of databases up to March 2025, including PubMed, Scopus, Google Scholar, and the Cochrane Library, yielded pertinent studies. "Frozen shoulder," "adhesive capsulitis," "exercise therapy," "physiotherapy," "shoulder rehabilitation," and "range of motion exercises" were among the search terms used. Only English-language publications that addressed exercise-based and non-surgical treatments for frozen shoulder were considered. Observational studies, systematic reviews, meta-analyses, clinical guidelines, and randomized controlled trials were taken into account. Excluded were case reports without organized workout regimens or studies discussing surgical procedures.Data on the types of exercises utilized, their use in various stages of frozen shoulder, the outcome measures used (such as pain reduction, range of motion, and functional improvement), and the length of the intervention were extracted from the selected papers. The clinical efficacy of stage-specific exercise regimens in both institutional and community-based settings was given special attention.

Results

To date, since 2005, fewer than 15 clinical trials and observational studies have specifically investigated the exclusive role of exercise therapy in the conservative management of frozen shoulder across different populations. These studies have primarily focused on range of motion recovery, pain reduction, and functional improvement using structured physiotherapy protocols. While exercises have consistently shown positive outcomes in both institutional and outpatient settings, there is limited documentation on their standardized use in primary care and community rehabilitation setups (see Table 1).Therapeutic exercises have proven beneficial in improving joint mobility, especially during the frozen and thawing phases of adhesive capsulitis. However, the preventive and early-intervention aspects of exercise therapy in the pre-frozen stage are still underexplored. Most interventions are initiated once pain and stiffness become prominent, thereby delaying optimal recovery.

Discussion

An established part of musculoskeletal rehabilitation, exercise-based physiotherapy has drawn more attention in the past 20 years for its potential to treat frozen shoulder. It is clear that planned exercise programs are beneficial to patients, especially when they are overseen or customized by qualified physiotherapists. However, there is little clinical focus on community-based, early-stage treatments.

Due to aging populations, sedentary lifestyles, and the rising frequency of metabolic syndromes and diabetes mellitus, frozen shoulder is becoming more common worldwide, including in low- and middle-income nations like India. Despite this, the majority of exercise therapy for frozen shoulder is still provided in institutions, with little outreach to outlying health facilities or home-based rehabilitation techniques.

According to Kelley et al. and other specialists, long-term results are enhanced by a multidisciplinary, early-intervention approach that incorporates exercise, patient education, and follow-up.

A stage-wise, exercise-centered rehabilitation approach is suggested (Figure 1) based on clinical observations and existing literature. In this model, physiotherapists can interact with patients during outpatient visits and provide care at home or at work. This promotes compliance and guarantees continuity of care. Even while these integrative models may already be used informally, there is a dearth of thorough documentation and systematic assessment. Future studies should concentrate on evaluating the viability, scalability, and efficacy of such integrative, exercise-based frozen shoulder rehabilitation strategies in both urban and rural environments.

Limitations

The current review was brief. It was limited to studies focusing on exercise therapy for frozen shoulder, primarily within institutional and outpatient settings. Studies involving large-scale community-based or home rehabilitation programs were scarce and thus not extensively covered.

Recommendations

Future research could include systematic reviews and meta-analyses involving low- and middle-income countries to evaluate the broader applicability of exercise-based interventions. Additionally, studies exploring the feasibility and outcomes of community-integrated exercise programs for frozen shoulder are needed.

Conclusion

Exercise therapy has a pivotal role in the conservative management of frozen shoulder. A structured, stage-specific approach to exercises can effectively reduce pain, improve mobility, and restore function. Integration of physiotherapy into community and primary care systems could enhance early intervention and long-term outcomes in patients with adhesive capsulitis.

Table 1. Exercise-based physiotherapy interventions for frozen shoulder

Title	Health condition	Objective	Type of study	Sample size	Physiotherapy Intervention	outcome	Limitations
Effectiveness of stretching and strengthening in frozen shoulder patients	Frozen shoulder	To assess the effectiveness of stage-wise physiotherapy	Pre-post intervention study	n=3	Stretching and strengthening for 6 weeks with supervised sesssions	Increased shoulder ROM and reduced pain	Small sample size, no control group
Efficacy of Matiland mobilization in frozen shoulder	Frozen shoulder	To compare maitland mobilization with conventional therapy	Randomized controlled trial	n=60	Maitland mobilization + home - based exercises	Better functional outcomes and faster pain relief than conventional group	Limited to early-stage patient
Home based vs supervised physiotherapy in adhensive capsulitis	Frozen shoulder	To compare supervised therapy with home exercise	Multicentered comparative study	n-90	Supervised therapy vs guided home program	Supervised therapy showed better complicance and results	Adherence to home program was variable

Ultrasound therapy combined with exercise in frozen shoulder	Frozen shoulder	To assess combined effect of ultrasound and physiotherapy	Randomised controlled trial	n= 40	Ultrasound + active/passive ROM + isometric exercise	Improved pain relief and shoulder mobility	Small sample size and short duration

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