International
Journal of Medical and Exercise Science
(Multidisciplinary, Peer Reviewed and Indexed Journal)

ORIGINAL ARTICLE

A COMPARATIVE STUDY BETWEEN GONG'S MOBILIZATION VERSUS SPENCER'S TECHNIQUES ALONG WITH CONVENTIONAL THERAPY FOR ADHESIVE CAPSULITES

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R. Dinesh[*1], R. Ferdinand[1], D. Kannan[2], M.P. Thenmozhi[3], S.Kohilavani[4], K Anantharaj[5], R. Vishnupriya[6], S. Sathyapriya[7]

Corresponding Author:

[*1]MPT Student, JKK. Munirajah Medical Research Foundation, College of Physiotherapy, Komarapalayam, The Tamilnadu Dr. M.G.R Medical University, Chennai, India E-Mail: dineshramesh3595@gmail.com

Authors:

[1]Principal, JKK Munirajah Medical Research Foundation, College of Physiotherapy, Komarapalayam, The Tamilnadu Dr. M.G.R Medical University, Chennai, Tamil Nadu, India

[2,,3,4,5,6,7]Professors, JKK Munirajah Medical Research Foundation, College of Physiotherapy, Komarapalayam, The Tamilnadu Dr. M.G.R Medical University, Chennai ,Tamil Nadu, India

ABSTRACT

Background: Adhesive capsulitis, commonly known as frozen shoulder, is characterized by progressive pain, stiffness, and significant restriction of range of motion (ROM) in the glenohumeral joint, resulting in substantial functional disability. Objectives of the study was to compare the effectiveness of Gong's mobilization and Spencer's technique, each supplemented with conventional therapy, in improving pain, range of motion, and functional disability in individuals with adhesive capsulitis. **Methods:** A randomized clinical trial was conducted on patients diagnosed with adhesive capsulitis. Participants were randomly assigned to receive Gong's mobilization or Spencer's technique, both groups additionally undergoing standard conventional therapy. Interventions were administered over several weeks. The study utilized certain tools for measuring outcomes Pain Evaluation: Numerical Pain Rating Scale for assessing pain levels. Range of Motion (ROM) Evaluation: Goniometry for measuring joint mobility. **Results:** Both Gong's mobilization and Spencer's technique, when combined with conventional therapy, produced significant improvements in shoulder ROM and reduction in functional disability scores. However, Gong's mobilization demonstrated superior outcomes, with greater decreases in NPRS scores and larger mean improvements in shoulder movement compared to the Spencer's technique. **Conclusion:** While both Gong's mobilization and the Spencer's technique, when paired with conventional Therapy, The Study Concluded that Gong's mobilization (Group A) effectively enhance shoulder mobility and decreases pain and The comparison suggests that a particular method (Group A) may be more effective than Spencer's technique (Group B) Reducing Disability: Decreasing disability in patients with adhesive capsulitis. Improving Outcomes: Possibly leading to better outcomes for patients with this condition.

Keywords: Frozen shoulder, Gong's mobilization, Spencer's techniques, conventional therapy, Gonio meter, NPRS

Received on 27th October 2025; Revised on 18th November 2025; Accepted on 24th November 2025
DOI:10.36678/IJMAES.2025.V11I04.010

INTRODUCTION

Frozen shoulder is also known as adhesive capsulitis. It is a complex and debilitating condition characterized by pain, stiffness, and progressive loss of mobility in the shoulder joint. The shoulder joint capsule becomes inflamed, thickened, and stiff, leading to restricted movement and pain. The condition progresses through three stages[1].

The painful "freezing" phase, the "frozen" stage, and the "thawing" phase. During the freezing phase, pain and stiffness gradually intensify, making it difficult to perform everyday activities. The frozen stage is characterized by a significant reduction in shoulder mobility, while the thawing phase is marked by a gradual improvement in range of motion[2].

Treatment options for frozen shoulder include oral medication, corticosteroid injections, exercises, joint mobilization, acupuncture, and surgery. Physiotherapy interventions, such as thermal therapy, therapeutic exercises, and mobilization techniques, play a crucial role in managing frozen shoulder.

Among these techniques, Gong's mobilization and Spencer's technique have shown promise in improving range of motion and reducing pain.

Gong's mobilization is a manual therapy technique that involves the application of specific forces to the affected joint, aiming to improve joint mobility and reduce stiffness. This technique has been shown to be effective in improving shoulder mobility and reducing pain[3].

Spencer's technique is a standardized sequence of shoulder treatments that can be used for diagnosis, treatment, and prognosis. This technique involves a series of passive, smooth, and rhythmic movements that aim to improve joint mobility and reduce stiffness[4].

METHODOLOGY

Study setting and Procedure: The study was conducted at JKKMMRF College of Physiotherapy- Outpatient Department and in MMCH erodes. The patient was informed about the whole procedure and treatment method. A written consent was obtained from their voluntary participation in this study. Totally 30 patients with Frozen shoulder were selected based on the inclusion and exclusion criteria and they were divided into 2 Groups, Group A and Group B with 15 subjects in each group.

Group A was treated with Gong's Mobilization and Group B was treated with Spencer's techniques. Numerical Pain Rating Scale and Goniometer scalewas used as outcome. Each patient was given a Physiotherapy program for 5-weeks duration. The pre and post treatment values were measured before and after 5-weeks for comparison.

Inclusion Criteria: AGE: 40-60 years, Unilateral adhesive capsulitis of shoulder joint, Type II diabetes mellitus, Both dominant and non-dominant hand, Both males and females, Pain more than 3 months, Phase II and III of adhesive capsulitis of shoulder joint, Subjects having limited ROM of shoulder abduction limited beyond 120 degree or less, Subjects having limited ROM of shoulder external rotation limited beyond 50 or less.

Exclusion Criteria: Patients suffering from thoracic outlet syndrome, Peripheral nerve injuries, Rheumatoid arthritis, Acute inflammation, Recent fractures in and around the shoulder, Recent shoulder dislocations, History of any surgery on the affected side, Rotator cuff rupture, Tendon calcification, Patients who are all taking corticosteroids medications.

Intervention for Group A

Group A Patients were treated with GONG'S MOBILIZATION With Ultrasound therapy for adhesive capsulitis.

GONG'S Mobilization Technique:

The subject was placed in a side-lying position with the affected shoulder joint facing upward. The patient's shoulder was abducted at 90° to maintain the humerus vertical position and the flexed elbow joint in a 90° position. The therapist used one hand to keep the subject's elbow joint at 90°, with own elbow below the patient's elbow joint, and the other hand to press the humerus head from anterior to posterior.

The therapist next elevated their own body, while slightly pulling on the articular capsule of the shoulder joint, keeping the vertical axis of the humerus constant by maintaining shoulder abduction and elbow at 90º This gentle pushing of the articular capsule was sustained for 10-15 seconds before relaxing for 5 seconds; the whole manoeuvre lasted roughly for 2-3 minutes. The therapist used one hand to press the shoulder joint from anterior to posterior after slightly extending the articular capsule. This prevented vertical pulling of the slightly extended articular capsule and the humerus[5]. The therapist used the other hand to hold the elbow while performing shoulder me-dial rotation. Then, to enhance range of motion, oscillation at Maitland's grades 3 and 4 was performed, followed by 7 seconds of prolonged stretching at the grade 4 techniques.

Intervention of Group B

Group B Patient were treatment with SPENCER'S TECHNIQUE with ultra sound therapy protocol on adhesive capsulitis

SPENCER'S Technique:

The patient was resting on their side, with the affected shoulder raised. in 7 separate movements, the therapist used the proximal hand to stabilize the shoulder girdle, while the distal hand applied force to the restrictive barrier of the shoulder. Shoulder extension, circumduction with compression, shoulder flexion, circumduction with distraction, abduction, adduction with internal rotation, and glenohumeral pump were the exercises performed.

The patients were advised to employ their muscle energy technique against the small resistance provided by the therapist for 3-5 seconds throughout each movement. Over the course of 5 days, the exercise was repeated 3-5 times per session, with rest breaks.

RESULTS

Goniometer [Abduction]	Mean	Mean difference	Standard deviation	Unpaired 't' value
Group A	161.67	28.4	5.49	5.17
Group B	133.27			

Table 1: Descriptive statistics for Goniometer (Abduction) Scale-Group A and Group B

The un paired 't' value of 5.17 was greater than the tabulated 't' value, which shows that there was statistically significant difference between Group A and Group B. the pre Vs post – test mean of Group A was 161.67 and the pre Vs post test mean of Group B was 133.27 and the mean difference of Group A and Group B was 28.4 which shows that there was statistically significant improvement in Group A than Group B

NPRS	Mean	Mean difference	Standard deviation	Unpaired 't' value
Group A	2.8	0.8	0.30	2.04
Group B	3.6			

Table 2: Descriptive statistics for Numerical pain rating scale-Group A and Group B

The unpaired 't' value of 2.04 was greater than the tabulated 't' value which shows that there was statistically significant difference between Group A and Group B. The pre Vs post test mean of Group A was 2.8 and the pre Vspost test mean of Group B was 3.6 and mean difference of Group A and Group B was 0.8 which showed that there was statistically significant reduction in Group A than Group B .

DISCUSSION

The aim of the study was to compare the effectiveness of Gong's Mobilization with Spencer's Techniques in patients with frozen shoulder. The Goniometer and Numerical Pain Rating Scale was taken as the parameters to compare the effectiveness of gong's mobilization with spencer's techniques in patients with frozen shoulder. The study sample comprised of 30 patients and divided into group A and group B, the age of the subject was 40-60 years. Among the 30 subjects 15 were treated with gong's mobilization and 15 were treated with spencer's techniques.

The study aimed to compare the effectiveness of gong's mobilization and spencer technique in reducing pain and functional disability and improving shoulder ROM in patients with frozen shoulder. A pre-test –post-test experimental study design was adopted. 30 patients diagnosed with frozen shoulder were selected randomized into 2 groups. Group A

received spencer's technique and US therapy with CPE (codman's Pendulum exercise), Group B received a treatment of Gong's mobilization and US with CPE. The outcome measures are Goniometer, VAS, SPADI scales are used in this study. Finally the study concluded that Gong's mobilization was found to be more effective than Spencer technique with US and CPE In treating patients with FS[5].

The study aimed to compare the effectiveness of Gongs mobilization and Spencer techniques in reducing pain, functional disability and improving shoulder ROM in Frozen shoulder patients. A pre-test and post-test were conducted. An experimental study design was adopted for 30 patients diagnosed with unilateral FS were selected and randomized into 2 groups as 15 with each group. It was a simple random technique. Group-A received Spencer techniques and ultra sound therapy with Codman's Pendulum Exercise [CPE]. Group – B received Gongs mobilization techniques and ultrasound therapy with CPE. The intervention lasted for 5 days and consisted of 1 session every day three scales were used for measuring they were VAS, Goniometer and SPADI. Gongs mobilization was found to be more effective than Spencer technique with US therapy with CPE[6].

Gong's mobilization technique, a manual therapy method, has shown potential in improving shoulder mobility and reducing pain in individuals with adhesive capsulitis. This technique primarily works by stretching the joint capsule, which becomes thickened and contracted in frozen shoulder. The rhythmic oscillatory movements help enhance synovial fluid circulation within the joint, promoting lubrication and reducing stiffness. Additionally, the mechanical stimulus from mobilization may influence the nervous system by decreasing pain perception through the activation of mechanoreceptors. Over time, repeated sessions can lead to improved tissue extensibility, increased range of motion, and reduced muscle guarding around the shoulder, contributing to recovery[7].

The Spencer technique is a manual therapy approach that aims to restore normal joint motion in the shoulder by stretching the capsule and surrounding soft tissues. This method increases pain-free range of motion and enhances lymphatic flow, which helps to reduce swelling and promote healing[8]. By resetting neural reflexes, the Spencer technique restores normal joint movement patterns, allowing for improved lubrication, nourishment, and circulation within the joint[9]. The technique involves passive movements, including translation, traction, and gliding, which help to restore normal joint mechanics .As a result, the Spencer technique can improve shoulder mobility by restoring normal rotation and movement patterns[10]. By addressing joint restrictions and promoting normal Arthrokinematic and Osteokinematic movement, this technique can help to alleviate pain, improve function, and enhance overall joint health.

The paired 't' value of 22.93 was greater than the tabulated 't' value, which shows statistically significant difference between the pre and post-test result. The pre-test mean was 99.8 the post-test mean was 161.67 and mean difference was 61.87 which showed that there was statistically significant improvement in post-test values in response to the effect of gong's mobilization.

The paired 't' value of 8.39 was greater than the tabulated 't' value, which shows statistically significant difference between the pre and post-test result. The pre-test mean was 100.8 the post-test mean was 133.27 and mean difference was 32.47 which showed that there was statistically significant improvement in post-test values in response to the effect of spencer's techniques.

The paired 't' value of 23.1 was greater than the tabulated 't' value, which shows statistically significant difference between the pre and post-test result. The pre-test mean was 8.53 the post-test mean was 2.8 and mean difference was 5.73 which showed that there was statistically significant reduction in post test values in response to the effect of gong's mobilization.

The paired 't' value of 10.3 was greater than the tabulated 't' value, which shows statistically significant difference between the pre and post-test result. The pre-test mean was 8.2 the post-test mean was 3.6 and mean difference was 4.6 which showed that there was statistically significant reduction in test values in post response to the effect of spencer's techniques.

The unpaired 't' value of 5.17 was greater than the tabulated 't' value, which shows that there was statistically significant difference level between Group A and Group B. The pre Vs post-test mean of Group A was 161.67 and the pre Vs post-test mean of Group B was 133.27 and mean difference of Group A and Group B was 28.4 which showed that there was statistically significant improvement in Group A than Group B.

The unpaired 't' value of 2.04 was greater than the tabulated 't' value, which shows that there was statistically significant difference between Group A and Group B. The pre Vs post-test mean of Group A was 2.8 and the pre Vs post-test mean of Group B was 3.6 and mean difference of Group A and Group B was 0.8 which showed that there was statistically significant reduction in Group B than Group A.

CONCLUSION

Both Gong's mobilization and Spencer's techniques were effective treatment techniques. So both can be preferred for treatment of Frozen shoulder. The Study concluded that Gong's mobilization is more effective in reducing pain, increasing range of motion and improving function in patients with Frozen shoulder than spencer's techniques.

Acknowledgement: We are thankful close to all candidates who were given more Support engaged in this study

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