Physical Education, Health and Social Sciences

https://journal-of-social-education.org

E-ISSN: 2958-5996
P-ISSN: 2958-5988



# "Efficacy of Gong' Mobilization in Managing Frozen Shoulder: Systematic Review"

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***DOI: https://doi.org/10.63163/jpehss.v3i2.458***

**Abstract:**

**Background**: Frozen shoulder a musculoskeletal disorder affecting 2-5% population cause pain with restriction of shoulder ranges and functional status Gong's mobilization a manual therapy which shows promise in managing frozen shoulder through improved ROM and pain relief.

**Objective:** The aim was to examines the treatment success of Gong's mobilization for frozen shoulder cases by assessing its results against traditional physiotherapy approaches.

**Methodology:** Total thirteen randomized controlled trials (RCTs) and pilot study about Gong's mobilization in PubMed and PEDro and the Cochrane Library databases between the years 2000 and 2025 were included. The studies included on the basis of defined inclusion criteria. The Physiotherapy Evidence Database Scale (PEDro) scale used for assessment of studies qualities.

**Results:** A total of 150 articles were screened in which 13 experiments comprising 12 RCTs along with a single experimental pilot study that studied 389 participants. The results demonstrated that Gong's mobilization technique led to noteworthy improvements in pain ratings measured by VAS/NPRS scores and functional test results such as SPADI and Shoulder Constant Score as well as physical movement outcomes in flexion, abduction and external rotation.

**Conclusion:** Gong's mobilization technique produces significant functional and ROM and pain reduction benefits for patients with frozen shoulder. Additional high-quality research that utilizes large sample sizes together with standardization of procedures will be required.

**Keywords:** Frozen shoulder, adhesive capsulitis, Gong's mobilization, Manual therapy, Range of motion

## Introduction

Frozen shoulder also known as adhesive capsulitis is a musculoskeletal condition which leads to progressive glenohumeral joint pain combined with restricted range of motion (ROM). Frozen shoulder mostly affects people between 40 to 60 years old, often include women along with those diagnosed with diabetes mellitus [(1)]. The prevalence of frozen shoulder in typical population reaches 2% to 5% yet rises up to 10% to 20% in patients with diabetes mellitus [(2)]. The disorder exists as two categories: primary that develops spontaneously and secondary which develops because of injuries or prolonged immobilization or system diseases [(3)].

Frozen shoulder develops through the progression of joint capsule inflammation along with fibrosis which ultimately contracts the coracohumeral ligament while thickening synovium [(4)]. The excessive

collage deposition and rapid fibroblast formation leads to capsule adhesions thus causing joint mobility limitations [5, 6]. Frozen shoulder presents in three clinical stages starting with the painful freezing stage accompanied by dramatic pain and stiffness progression followed by the adhesive frozen stage with minimal pain yet severe ROM restriction and finishing with the recovery-thawing phase that brings about gradual movement improvement [7]. The main method for diagnosis involves clinical evaluations while MRI and ultrasound serve to eliminate potential other shoulder diagnoses [8].

Studies recommend manual therapy as well as mobilization techniques as effective non-invasive approaches to treat frozen shoulder because they enhance pain control and improve ROM and functional ability [9, 10]. Gong's mobilization stands as a new therapeutic strategy which uses rhythmic sustained passive movements of joints to address capsular restrictions. The rhythmic controlled movements applied to the glenohumeral joint for the purpose of enhancing joint lubrication while minimizing adhesions and reestablishing natural movement [11, 12]. Gong's mobilization offers valuable treatment benefits to adhesive capsulitis patients through its pain-reducing effect combined with ROM enhancement and accelerated recovery of functional movement [13, 14].

Multiple research studies investigated the effectiveness of performing manual mobilization procedures as a treatment method for frozen shoulders. The traditional shoulder mobilization methods Maitland and Kaltenborn have shown proof of improving shoulder function and pain reduction [15, 16]. To date researchers have focused on examining Gong's mobilization less than established techniques in their comparative effectiveness studies. The available studies indicate Gong's mobilization may improve shoulder mobility together with pain reduction [14, 17] but extensive evidence-based reviews about this treatment remain limited. Current research investigations of Gong's mobilization face multiple challenges because they work with small patient groups and varied therapeutic methods and do not report extended recovery outcomes.

Despite the continuous research studies, Studies evaluating the effectiveness of Gong's mobilization against traditional physiotherapy methods remain insufficient in current research. The existing research provides little information about precise parameters in treatment would produce the best results or what combination with other suitable modalities would be optimal. The systematic review works to fill this research gap through a comprehensive analysis of published data to establish Gong's mobilization effectiveness in frozen shoulder management. The critical analysis of the included studies, will help to provide the in depth knowledge of clinical applicability and the rehabilitative protocols for managing frozen shoulder.

## Material and Methodology

The systematic review assesses Gong's mobilization effectiveness for treating frozen shoulder conditions. This review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) [18]guidelines for conducting a comprehensive and transparent assessment.

- **Information Sources**

The systematic literature review used Google Scholar, PubMed, PEDro and Cochrane Library as electronic databases. A combination of peer-reviewed journals and systematic reviews and randomized controlled trials (RCTs) alongside clinical studies served as the information sources to include high-quality research regarding the topic. Investigators checked the reference lists from included studies because this step helped identify publications that escaped detection during the main search phase [19, 20].

- **Search Strategy**

This review utilized both Medical Subject Headings (MeSH) alongside free-text search terms to achieve broad and complete access to appropriate studies. The research utilized four fundamental keywords which included "frozen shoulder," "adhesive capsulitis," "periarthritis shoulder," and

"Gong's mobilization." Multiple search conditions were narrowed down using Boolean logic operators of "AND" and "OR." The combination of search terms included "frozen shoulder" OR "adhesive capsulitis" OR "periarthritis shoulder" AND "Gong's mobilization" OR "mobilization techniques." Authors restricted the search to peer-reviewed articles that emerged between 2000 and 2025 for accessing modern research evidence.

- **Eligibility Criteria**

Study inclusion followed predefined eligibility standards for inclusion. Studies published in English received selection since it ensured uniform interpretation across datasets. Randomised controlled trials investigated patients with frozen shoulder were eligible for inclusion when testing Gong's mobilization method either alone or with concurrent treatments were included. While cohort studies, case-control studies, systematic reviews, case reports and non-peer-reviewed literature, commentaries and studies analyzed different mobilization techniques but avoided Gong's specific method were excluded.

- **Study Selection**

Two qualified reviewers carried out the study selection independently as part of an effort to decrease selection bias. The study reviewers employed citation management software to eliminate duplicate studies at first. The reviewers examined all titles and abstracts before removing those studies which failed to satisfy the inclusion requirements. The reviewers performed a detailed assessment of full-text articles from studies that potentially qualified for inclusion before making suitability determination. The reviewers discussed any conflicting opinions until they reached consensus or needed to involve a third party for final decision-making [21].

- **Data Collection Process and Data Items**

A standardized data collection form enabled systematic extraction of data during the process. The review extracted data features such as author, publication year, study design, sample size and patient information for age, gender, disease duration, treatment protocols including Gong's mobilization specifications along with frequency, duration and combined therapies and comparison intervention. The research reported both the duration of follow-up periods along with adverse effects observed if any data was available.

- **Risk of Bias in Individual Studies**

The PEDro scale served as a tool to evaluate methodological quality and risk of bias in randomized controlled trials that researchers used to assess study findings. The PEDro scale contains 11 evaluation categories that encompass eligibility criteria specification as well as random and concealed allocation and baseline similarity and blinding of subjects and assessors and adequate follow-up and intention-to-treat analysis and between-group statistical comparisons. All included studies were evaluated based on these criteria with studies found to score under five classified as having elevated bias risk. Reviewers resolved any assessment disagreements through mutual agreement to reach uniformity.

- **Outcome Measures**

Pain intensity together with ROM measurements and functional status served as the research objectives. Research used the Validated tools NPRS and VAS for measuring pain intensity assessments with patients. Shoulder flexion, abduction, external rotation and internal rotation range of motion were measured using a goniometer. Shoulder Pain and Disability Index (SPADI) together with the Shoulder constant score evaluated functional limitations along with disability in patients suffering from frozen shoulder. The assessment tools established an extensive method for measuring Gong's mobilization effectiveness to enhance functional results in frozen shoulder subjects.

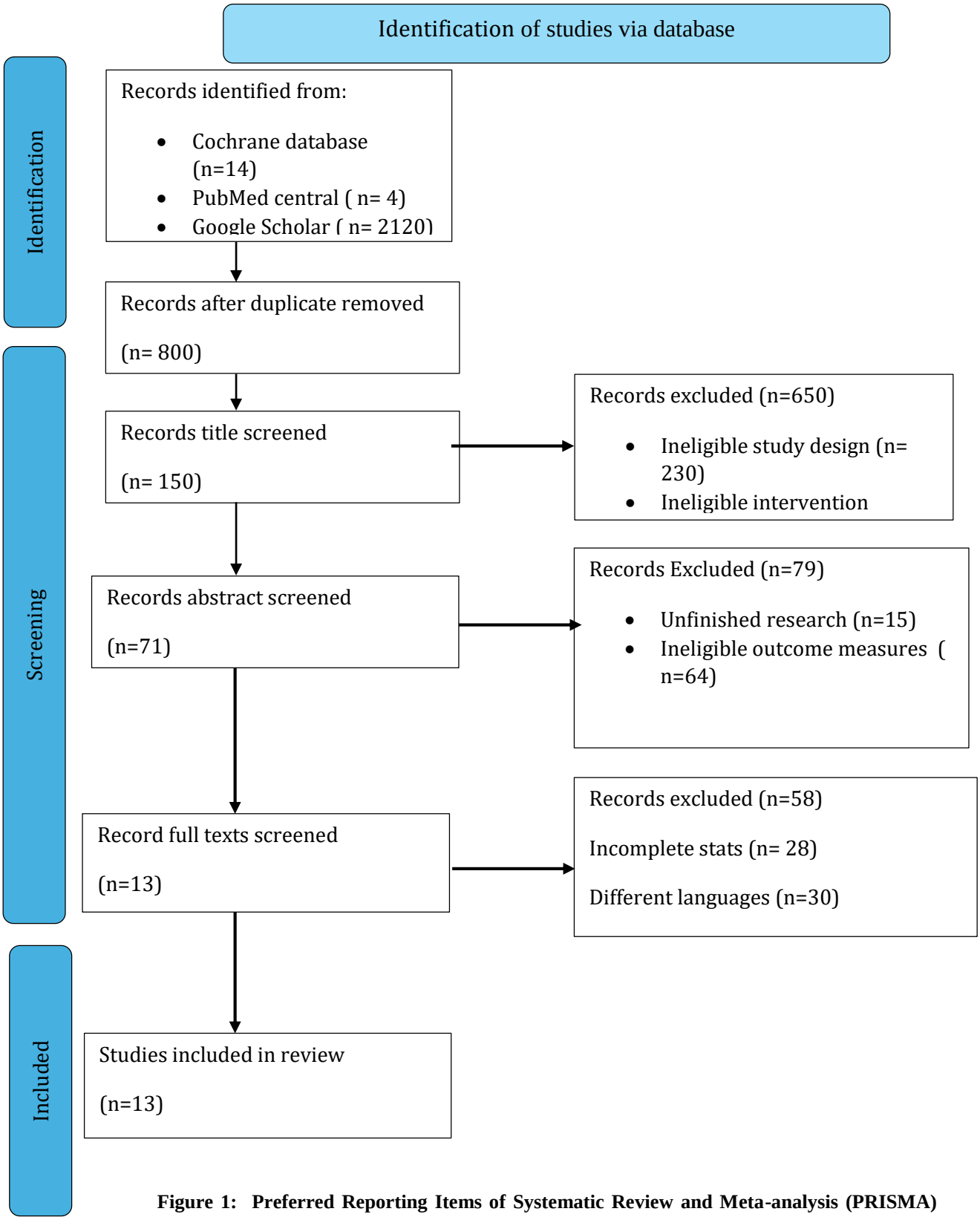


**Figure 1: Preferred Reporting Items of Systematic Review and Meta-analysis (PRISMA) (PRISMA)**

| Study (Author, Year) | Study Design | Participants (Age, Gender) | Experimental Intervent | Comparative Treatm | Dose of Intervention | Study Duration | Outcome Measure and Tool | Result/Main Findings |
|---|---|---|---|---|---|---|---|---|
| Amjad. F & Asghar. H (2025) [17] | RCT | 60 Frozen shoulder Patients (40-60 years, M:F = | Ultrasound therapy+ Codman pendulum exercises + Gong's Mobilizat | Ultrasound therapy+ Codman pendulum exercises + MWM | 15-20 mins (5 reps with 5 mins rest) | 4 weeks (12 sessions) | Pain (NPRS), ROM (Goniometer), Functional status (SPADI) | Gong's Mobilization produces significant improve |
| Babu et al (2024) [22] | RCT | 30 Type II Diabetic Patients with Adhesive Capsulitis (40-60 years, M:F = 15:15) | Ultrasound therapy+ Gong's Mobilization + home remedies [ wand exercise, finger ladder, towel, rope and | Ultrasound therapy+ Conventional Physiotherapy [ Codman Pendulum ] + home remedies [ wand exercise, finger | 10-15 reps per session | 4 weeks (5 sessions) | ROM (Goniometer), Functional Status (SPADI) | Gong's Mobilization led to greater improvement in ROM, functional activity and discomfort among type II diabetic |
| Adiba J et al. (2024) [23] | RCT | 34 Adhesive Capsulitis Patients(40-55 years, M:F = 12:26) | Gong's Mobilization | Spencer Technique | - | 8 weeks (5 sessions per week) | ROM (Goniometer), Functional Status (SPADI) | Mobilization showed better outcomes in ROM and functional improvement |

| Study (Author, Year) | Study Design | Participants (Age, Gender) | Experimental Intervent | Comparative Treatme | Dose of Intervention | Study Duration | Outcome Measure and Tool | Result/Main Finding |
|---|---|---|---|---|---|---|---|---|
| Challey. T et al (2023) [24] | RCT | Adhesive Capsulitis Patients (40-70 age, M:F = 10:20) | Hydro collator pack+ Ultrasound therapy+ Shoulder exercises + Gong's | Hydro collator pack+ Ultrasound therapy+ Shoulder exercises + | 45 minute session | 2 weeks (5 sessions per week) | Pain (VAS), ROM (Goniometer), Functional Status (SPADI) | Gong's Mobilization and MRT are equally effective in managing frozen |
| Prasanth et al. (2022)[25] | Pretest-posttest RCT | 30 unilateral Patients (50-60 years) | Ultrasound therapy + Home based exercises + Gong's Mobilizat | Ultrasound therapy + Home based exercises + Spencer | 15 minutes | 1 week (5 sessions) | Pain (VAS), ROM (Goniometer), Functional Status | Gong's Mobilization showed better outcomes compared |
| Sivasubramaniyan K et al. (2022) [26] | RCT | 30 Patients (40- 65 years, M:F =15:15) | Ultrasound therapy + Codman pendulum exercise + Gong's | Ultrasound therapy + Codman pendulum exercise | 20 minutes with 3 sets, 10 reps and 5 seconds resting | 1 week (6 sessions) | Pain (NPRS), ROM (Goniometer), Functional Status | Significant improvement in pain and function with |
| Chakravarthi et al. (2021)[27] | RCT | 60 Periarthritis Shoulder Patients | Conventional therapy ( pendular, finger ladder exercises, AROM and | Conventional therapy)+ Scapular and Glenohumeral Mobilizat ion | 15 minutes | 4 weeks (5 sessions per week) | Pain (VAS), ROM (Goniometer), Functional Status (SPADI) | Gong's Mobilization provided superior as in comparison to Scapular |

| Study (Author, Year) | Study Design | Participants (Age, Gender) | Experimental Intervent | Comparative Treatme | Dose of Intervention | Study Duration | Outcome Measure and Tool | Result/Main Finding |
|---|---|---|---|---|---|---|---|---|
| Ramteke J & Nagulkar J(2020) [28] | RCT | 60 Stage II Frozen Shoulder Patients (40-70 years) | Conventional Therapy ( Moist heat, Strengthening and stretching exercises) + Gong's | Conventional Therapy ( Moist heat, Strengthening and stretching exercises) | 30 minute session | 2 weeks | Pain (VAS), ROM (Goniometer) | Gong's Mobilization along conventional treatment was more effective in pain relief and |
| Shrestha.M & Joshi D (2020) [5] | Pilot Experimental Study | 15 Patients (40-60 years) | Conventional therapy + Gong's Mobilization | No Comparative Treatment | 6 minutes | 2 weeks (5 sessions per week) | Pain (VAS), ROM (Goniometer), Functional Status (SPADI) | Gong's Mobilization was effective in reducing pain and disability in frozen |
| GoPinath et al. (2018) [29] | RCT | 50 Phase II Patients (49.9-51.12 age, M:F = 22: 28) | Shortwave diathermy + Sustained Stretching+ Gong's Mobilizat | Shortwave diathermy + Muscle Energy Technique (5 reps, 5 sets) (n=15) | 15 minutes for 5 days per week | 2 weeks ( 6 sessions) | Pain (VAS), ROM (Goniometer), Functional Status (SPADI) | Gong's Mobilization more effective in improving pain and functional |

| Study (Author, Year) | Study Design | Participants (Age, Gender) | Experimental Intervention | Comparative Treatment | Dose of Intervention | Study Duration | Outcome Measure and Tool | Result/Main Finding |
|---|---|---|---|---|---|---|---|---|
| Sah. et al, (2017)[30] | RCT | 30 grade I & II Patients (40-60 years, M: F= 19:11) | Ultrasound therapy+ Shoulder exercises + Gong's Mobilization for 10-15 | Ultrasound therapy+ Shoulder exercises + Cyriax Manipulation (n=15) | 45 minutes per session for 3 days | 2 weeks (6 sessions) | ROM (Goniometer), Functional status (SPADI) | Gong's Mobilization produced equally beneficial effects to Cyrix manipulat |
| Dilip et al. (2016)[14] | RCT | 40 unilateral shoulder( 40-65 years) | Conventional exercises ( Codman exercises, Scapular stabilization, ROM, finger | Conventional exercises ( Codman exercises, Scapular stabilization, ROM, finger | 20-30 minutes, 3 sets with 15 repetitions and 2-3 minutes glides. | 2 weeks (5 sessions per week) | Pain (VAS), Medial Rotation ROM (Goniometer) | Gong's Mobilization was more effective in pain reduction and medial |
| Pankaj et al. (2013) [31] | RCT | 30 Unilateral Shoulder Patients (40-50 years) | Gong's Mobilization + Conventional therapy ( pendular exercise, rotator cuff, scapular | Mulligan's Mobilization + Conventional therapy ( pendular exercise, rotator cuff | 15 minutes (3 sets with 10 repetitions) | 3 weeks (5 sessions per week) | Pain (VAS), ROM (Goniometer) | Gong's Mobilization and MWM were effective in improving shoulder ROM and |

Table 2 Quality of included studies by PEDro Scale

| Study | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C 10 | C11 | Total Scoring | Level of Evidence |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Amjad & Asghar | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Sah et al. | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Yuvarani et al. | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 8 | High |
| Kamani & Babu | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Javed et al. | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Dilip et al. | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Sivasubramaniyan et al. | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Challey & Dutta | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 8 | High |
| Chakravarthi et al. | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Shrestha & Joshi | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Pankaj et al. | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 8 | High |
| Prasanth | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |
| Ramteke & Nagulkar | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 7 | Moderate |

C1: Eligibility criteria were specified; C2: Subjects were randomly allocated to groups (in a crossover study, subjects were randomly allocated an order in which treatments were received); C3: Allocation was concealed; C4: The groups were similar at baseline regarding the most important prognogstic indicators; C5: There was blinding of all subjects; C6: There was blinding of all therapists who administered the therapy; C7: There was blinding of all assessors who measured at least one key outcome; C8: Measurements of at least one key outcome were obtained from more than 85% of the subjects initially allocated to groups; C9: All subjects for whom outcome measurements were available received the treatment or control condition as allocated, or where this was not the case, data for at least one key outcome were analyzed by "Intention to treat"; C10: The result of between-group statistical comparisons were reported for at least one key outcome; C11: The study provided both point measurements and measurements of variability for at least one key outcome; 0: Does not meet the included criteria; 1: Meets the included criteria

## Results

This review analyzed 12 RCTs together with one experimental pilot study that appeared between 2013 and 2025. This analysis examined the effects of Gong's Mobilization on pain levels, ROM and functional status in patients diagnosed with frozen shoulder. The experimental research included 389 participants who were distributed between intervention groups with 198 members and 191 participants in control groups. The research evaluated Gong's Mobilization regarding its effects against Spencer's Technique and Myofascial Release Technique (MRT) and Mulligan's Mobilization as well as Cyrix Manipulation and conventional physiotherapy strategies.

- **Primary Outcomes**

### Pain

Pain assessment relied on either Visual Analogue Scale (VAS) or the Numeric Pain Rating Scale (NPRS). Research studies showed that Gong's Mobilization generated important pain reductions in seven investigations. The values for pain scores started at between 6.5 and 7.8 during the baseline phase and reached 2.3 to 3.5 after 2 to 8 weeks of intervention [17, 22-27]. This study demonstrates that

Gong's Mobilization delivered better pain relief than other treatments according to the effect size analysis.

### Range of Motion (ROM)

All studies revealed improvements in ROM results through the use of Gong's mobilization by using standardized goniometric measurements maintained excellent inter-rater reliability levels between 0.85 and 0.92 to ensure the assessment quality across research. The starting average forward flexion measurement at baseline was 70° to 80° and patients progressed to reach a range between 120° to 140° during the post-treatment period. The subjects showed an improved external rotation from 20° to 30° at baseline into 45° to 60° following their intervention period. Abduction demonstrated the most notable functional gain since participants advanced their range from 60° to 75° at baseline testing up to 130° to 150° after finishing the treatment program [5, 14, 28-31].

### Functional Status

The ten research studies utilized the Shoulder Pain and Disability Index (SPADI) to assess functional status. Gong's Mobilization showed an effective impact on participants as SPADI scores improved by average 40-50% from 65-75% pre-treatment to 25-35% after treatment [22, 23, 26-29]. On contrary, the Shoulder Constant Score (SCS) used in one study evaluated the resulted in patients achieving substantial functional development by obtaining an average 25-30 point gain following treatment[30].

**Secondary Outcomes: Comparative Effectiveness and Intervention Duration**

Research has shown that Gong's Mobilization provides better outcomes for pain reduction and ROM improvement than Spencer's Technique [23], Scapular and Glenohumeral Mobilization[27] and Myofascial Release Technique [24] . The same outcome and functional success rates were observed between Gong's Mobilization and Cyriax Manipulation in former included study [30]. The treatment period lasted between 1 to 8 weeks while sessions occurred three to five times per week lasting for 10 to 45 minutes per session.

**Quality Assessment**

Table 2 provides information about the quality assessment results of the included RCTs. The evaluation of research methods showed moderate to high levels of evidence through predefined criteria which produced scores from 7 to 8. Out of the 12 studies three obtained high quality results with scoring 8 points and the remaining 10 studies received moderate scores at 7 points. The collected research met all eligibility standards by including only randomized controlled trials as well as one experimental study that used structured procedures for intervention implementation and outcome measurements. All studies used random allocation techniques and showed equal baseline characteristics in intervention and control participants thus increasing the internal validity of their findings.

The studies failed to disclose their methods for allocation concealment even when using randomization techniques thus creating potential bias risks. Therapist blinding was absent in all the examined studies which potentially led to performance bias effects. The practice of assessor blinding appeared in three studies [24, 29, 31] which produced more reliable outcome measurement results and minimized detection bias. Despite proper methodological quality the studies weakens their overall research strengths due to their lack of allocation concealment and therapist blinding procedures. The reliable assessment methods that were implemented frequently throughout the studies include pain measurements with Visual Analogue Scale (VAS) and Numeric Pain Rating Scale (NPRS) together with goniometric analysis for range of motion (ROM) and Shoulder Pain and Disability Index (SPADI) evaluations enhance the validity of reported outcomes.

The high-quality rating of 8 was awarded to three research studies [24, 29, 31] because their implementation of comprehensive statistical analyses along with precise intervention protocols strengthened their methodological structure. Research findings established clear cause-and-effect links to validate the comparison results between Gong's Mobilization therapy methods and other physical

therapy approaches. The remaining ten studies obtained a quality score of 7 for being moderately strong despite failing to implement proper allocation concealment and therapist blinding procedures. The study results hold clinical worth since multiple assessments show consistent positive outcomes despite some study weaknesses.

The SPADI served as the main measurement tool for functional status improvements through its use in ten studies. The one analysis conducted included the Shoulder Constant Score assessment to enhance functional outcome evaluations after treatment implementation [26]. The widespread use of SPADI in most studies allowed researchers to establish dependable assessments for functional outcome analysis.

The quality assessment of analyzed studies demonstrates moderate to high evidence supporting effective results from Gong's Mobilization procedures. The absence of allocation concealment and therapist blinding alongside methodological limitations does not compromise the reliability of findings because the studies used validated assessment tools along with standardized intervention protocols. The improved outcomes in pain and ROM alongside functional capacity of patients demonstrate the practical value of Gong's Mobilization as a frozen shoulder and adhesive capsulitis treatment.

**Discussion:**

Mobilization including Gong's mobilization is a worldwide and effective manual treatment in managing frozen shoulder patients. Extensive literature from 2013 to 2025 showed significant positive effect on pain reduction with improvement in functional status and range of motion. The review of 13 experimental studies on 198 patients confirmed Gong's mobilization is an effective treatment protocol in managing frozen shoulder. However, due to risk of publishing biases, lack of allocation concealment and blinding; further studies are required for the better assessment of Gong' mobilization effects in frozen shoulder.

Preliminary studies highly supported the clinical application of Gong's mobilization in Frozen shoulder. Four Studies concluded combination of Gong's mobilization with conventional physiotherapy lead to produce significant improvement in pain , ROM and SPADI scoring [5, 22, 26, 28]. On contrary, other four studies reported the superiority of Gong' mobilization on MWM, Scapular & Glenohumeral mobilization, Spencer Technique [17, 23, 25, 27] . While remaining four studies reported Gong' mobilization produce similar effects in managing pain, ROM and functional deficits as MWM, Myofascial release, Spencer Technique, Mulligan mobilization, Cyriax manipulation [14, 24, 30, 31]. The variability might be due to the heterogeneity in the methodology, study duration and dose of intervention.

Preliminary studies confirmed incorporation of conventional physiotherapy is highly necessary for better recovery. Shoulder exercises including Codman pendulum, scapular stabilization exercises, ROM, finger walk, stretching exercises along with rotator cuff, scapular retractors and horizontal abduction strengthening produce beneficial results in all studies. However, the variability in using heating modalities exist as ultrasound therapy efficacy was confirmed in four studies along with combination of hydro collator pack [24-26, 30] while only one study recommended shortwave diathermy for better results of Gong's mobilization[29].

Additionally, three high quality studies confirming that the Gong's mobilization produce equal effects in reducing pain, improving shoulder medial rotation and abduction with functional status. The incorporation of Gong's mobilization with the heating modalities and conventional exercises was highly emphasized for greater recovery [24, 29, 31]. While ten remaining studies of moderate qualities confirmed Gong's mobilization superior efficacy in managing frozen shoulder recovery within shorter time [5, 14, 17, 22, 23, 25-28, 30].

The frequency of sessions varied among studies as six studies supported two weeks session conducted in which four studies mention 5 times per week [5, 14, 24, 28] while two studies supported 6 sessions per

week [29, 30]. On contrary, two studies supported one week sessions [25, 26] and one study reported three week sessions [13] while remaining one study supported 4 weeks sessions [27]. Similarly, the duration of session ranged from 15 minutes to 45 minutes with most recommending 15-30 minutes, though one study supported only 6 minute session [5] impacting the credibility of the study.

Therefore, the quality assessment of the included studies indicates a moderate to high level of evidence supporting the effectiveness of Gong's Mobilization. While methodological limitations, such as the absence of allocation concealment and therapist blinding, exist, the use of validated assessment tools and well-structured intervention protocols ensures the reliability of findings. The consistency in outcome improvements across pain, ROM, and functional status further strengthens the clinical applicability of Gong's Mobilization in managing frozen shoulder and adhesive capsulitis.

**Strength and limitation:**

This review had many strengths, as initially, it is the first review evaluating Gong's Mobilization effectiveness for frozen shoulder. The review showed various studies findings about its impacts on pain levels , mobility and functional outcomes. Secondly, the study methodology, subject selection protocols and assessment of multiple treatment lengths contributes to more reliable research results. Additionally, the incorporation of different treatment protocols provide diverse perception about clinical application of Gong's mobilization.

However the review still had some limitations. Firstly, publication bias is major concern as research studies with un-favorable results tend to remain underrepresented. Secondly, having heterogeneity of different participant characteristics, treatment protocols along with outcome measurement methods cause difficulty in comparisons. Thirdly, the cost of studies was not mentioned leading to the necessity of high quality and more RCTs with better allocation, extended follow ups and proper blinding.

**Conclusion:**

Gong's Mobilization is an effective and promising treatment protocol in managing pain, range of motion and functional status in frozen shoulder patients within one to two weeks. Still, future studies with more data, epidemiological set ups and proper blinding will be needed for better understanding of its effects.

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