EFFECTIVENESS OF MOVEMENT WITH MOBILIZATION AND SCAPULAR STABILIZATION AMONG SUBJECTS WITH SHOULDER IMPINGEMENT SYNDROME

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ABSRACT:

BACKGROUND AND AIM:

In shoulder impingement syndrome, the supraspinatus tendon and subacromial bursa are persistently entrapped between the humeral head inferiorly and the anterior acromion itself, spurs of the anterior acromion or acromioclavicular joint, or the coracoacromial ligament superiorly, the most common clinical features is pain and pain is increased with arm elevationand restricted range of motion of shoulder joint. So the purpose of this study is to find the effectiveness of movement with mobilization and scapular stabilization in shoulder impingement syndrome.

OBJECTIVE:

1. To determine the effectiveness of movement with mobilization and scapular stabilization in reducing pain among subjects with shoulder impingement syndrome using SPADI.

2. To determine the effectiveness of movement with mobilization and scapular stabilization inincreasing range of motion among subjects with shoulder impingement syndrome using goniometer.

METHOD:

STUDY DESIGN: Experimental study.

SAMPLING TECHNIQUE: Convenient Sampling technique.

SAMPLE SIZE: 40 subjects.

RESULT: The statistical analysis shows that there is an significant improvement in shoulder range of motion and reduction in pain with movement with mobilization among subjects with shoulder impingement syndrome when compared with scapular stabilization.

CONCLUSION: From this result, it has been concluded that movement with mobilization showed improvement in reducing pain and improving ROM when compared to the scapular stabilization among patients with shoulder impingement syndrome.

KEYWORDS:

Shoulder impingement syndrome, movement with mobilization, scapular stabilization,shoulder pain and disability index, goniometry.

INTRODUCTION:

Impingement syndrome is an ill-defined phrase that refers to a number of shoulder illnesses that cause anterior shoulder pain, particularly during overhead tasks. These conditions share apathologic history that involves rotator cuff tendinitis (RCT) and, if left untreated, cuff rupture. In overhead athletes the common cause of shoulder pain is internal impingement. (1) When the arm is in extreme abduction and external rotation ranges, the larger tuberosity of the humeral head makes excessive or recurrent contact with the posterior- superior portion of the glenoid border. (2) This finally results in impingement of the glenoid labrum and the supraspinatus/infraspinatus rotator cuff tendons. (3)

Due to the wide range of associated pathologic abnormalities and the difficulties in diagnosing internal impingement, the incidence of the condition is unknown. (4) When a patientwith SIS has their shoulder elevated, it causes pain and dysfunction. This is typical during many sporting events and everyday activities. The majority of individuals with internal impingement have been recognized as overhead athletes or throwers (tennis, volleyball players, swimmers, or baseball players. (5) Shoulder issues are reported to affect 7% to 34% ofpeople, with shoulder impingement syndrome being the most common cause. (6)

Patients with this condition typically have chronic pain without any prior trauma. They complain of pain when raising their arm, forcing movement above their heads, and sleeping on the affected side, causes limited range of motion, patients with shoulder impingement syndrome commonly have forward head posture and slouching shoulder. (7) When the scapular musculature is weak or dysfunctional, normal scapular posture and mechanics can be disrupted, leading to aberrant pressures on the capsular structures, rotator cuff compression, and decreased performance. A variety of internal disturbances include popping, clicking, catching, and sliding. (8)

History and physical examination are important for diagnosis of shoulder impingement syndrome.it

includes AROM, PROM, MMT, Tenderness. Special tests are the important components of physical examination these includes: Hawkin's test, neer sign, jobe test,
painful arc of motion. [9] Rotator cuff strengthening activities, stretching exercises, immobilization, passive, active, and active aided range of motion exercises (ROM), various mobilization procedures, modalities and home exercise regimens are all common treatments for SIS. With a variety of physical therapy techniques, including as heat, transcutaneous electrical nerve stimulation TENS and ultrasound. Exercises like the cross-body and sleeper stretches have been characterized as stretching methods to improve posterior shoulder soft tissue flexibility and to increase the range of motion in the glenohumeral joint and the overhead athlete's horizontal adduction and internal rotation. [10] To increase strength, endurance, and motor control, exercises should emphasize the recruitment patterns of the scapular and rotator cuff muscles. [11] High-level tennis players who regularly performed "sleeper stretch" exercises showed considerable improvements in internal and total rotation, as well as a 38% drop in the prevalence of shoulder issues. [12]

If improvements are not apparent after a prolonged rehab plan created to address any impairments, imbalances, inadequacies, and/or pathologic findings, surgery for internal impingement may be recommended. [13] For arthroscopy interventions, there are various methods, Debridement of the rotator cuff tear, subacromial decompression, and arthroscopic repair to complete the rotator cuff tear. [14]

The recent treatment described by Brian Mulligan is mobilization with movement, which uses manual therapy to treat shoulder impingement. Mobilization with movement is a manualtherapy approach in which the physical therapist uses active movement while applying an accessory force to align the joint's positional defect. The effect of mobilization with movement in shoulder impingement syndrome has shown greater outcomes in pain intensity and shoulder ROM. [15]

METHODOLOGY:

This study was conducted as a experimental study, randomly selected based on inclusion and exclusion criteria. Subjects with shoulder pain and reduced range of motion were included in this study, which included both male and female volunteers aged 20 -45 years. The Shoulder pain and disability index was used to include subjects with shoulder pain and reduced range of motion. Subjects who were not interested in the study, subjects with any other neurological illnesses or any other recent injuries were excluded. The study setup was Saveetha physiotherapy OPD, Saveetha medical college, and hospital, Thandalam, Chennai. Subjects with shoulder impingement syndrome who were more than one-month post-injury and getting rehabilitation in our Physiotherapy department between september and november 2022 were prospectively enrolled in the study. Before and after the intervention, the questionnaire was provided and completed. Each

individual's heart rate (HR) and blood pressure (BP) were measured. The subjects blood pressure (BP) was recorded during each treatment session. The informed consent was given to the individual before the treatment begins and explained about the procedure.

Procedure:

All the 40 subjects were assessed with the Shoulder pain and disability index and Goniometer before the initiation of the treatment and were treated with movement with mobilization and scapular stabilization. Group A (experimental) individuals received movement with mobilization and Group B (conventional) individuals received scapular stabilization and it was given for 5 days per week for 4 weeks with duration around 20 minutes in 3 sequences of 10 repetitions with a rest interval of 30 seconds between each sequence. The Shoulder pain and disability index and Goniometer were used to assess all subjects at the beginning of the study (pre-test) and the end of the study (post-test). The result and the collected data were tabulated and analyzed.

INCLUSION CRITERIA:

1. History of shoulder pain for more than 3 months.
2. Both the genders.
3. Positive results for Neer sign.

EXCLUSION CRITERIA:

1. Recent history of shoulder, cervical or thoracic surgery.
2. Subjects with numbness or tingling sensation in upper extremity.
3. Diagnosis of fibromyalgia.

RESULT:

The statistical study revealed that among 40 shoulder impingement syndrome individuals aged between 20-45 years there is an improvement in shoulder range of motion and reduction in pain.

Table 1: Comparison of pre-test and post- test values of SPADI for Experimental GroupA & Conventional Group B

SPADI		Mean	Standard deviation	t value	p value
Experimental Group	Pre test	97.30	19.25	11.76	<0.0001
	Post test	35.05	12.26		
Conventional Group	Pre test	97.30	19.25	5.011	<0.0001
	Post test	72.25	9.72		

Graph 1: Comparison of pre test and post test values of SPADI for Experimental group A & Conventional group B

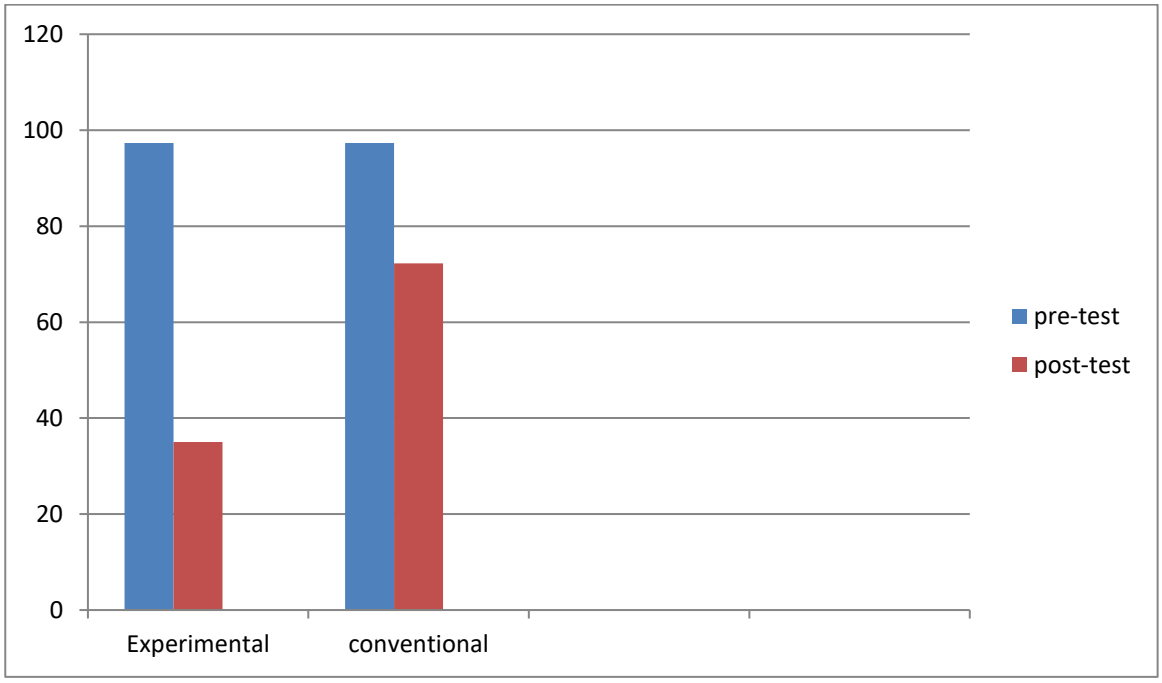
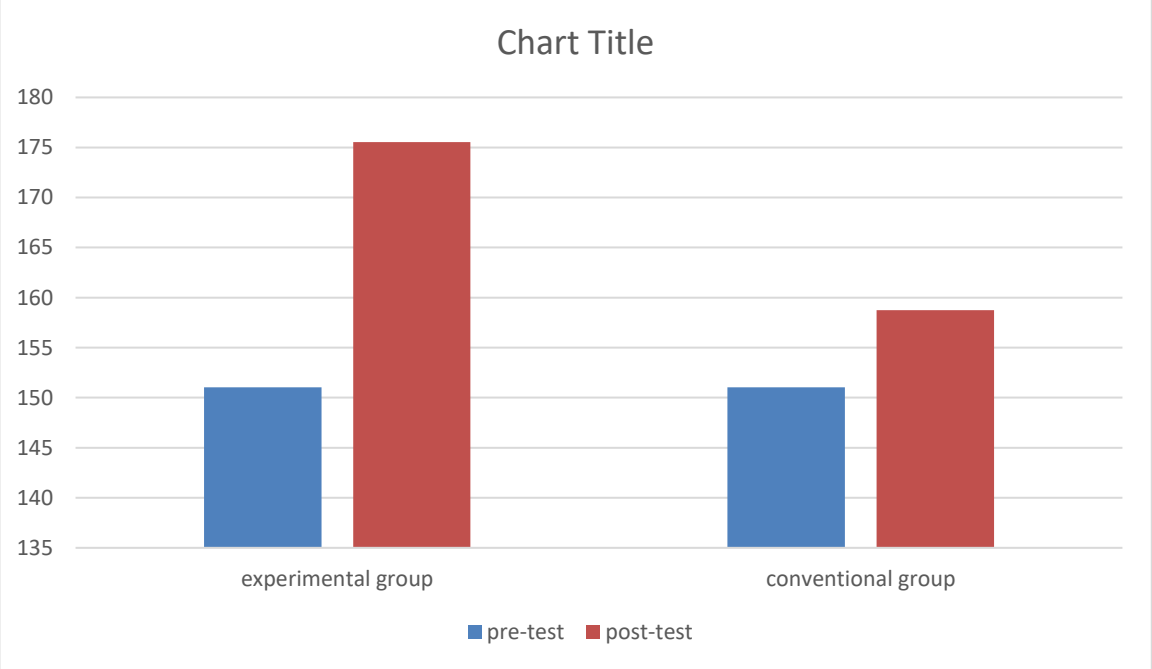


Table 2: Comparison of pre-test and post-test values of Goniometry for ExperimentalGroup A and Conventional Group B

GONIOMETRY		Mean	Standard deviation	t value	p value
Experimental Group	Pre test	151.05	6.74	20.7538	<0.0001
	Post test	175.55	3.26		
Conventional Group	Pre test	151.05	6.74	5.6440	<0.0001
	Post test	158.73	5.51		

Graph 2: Comparison of Pre-test and post-test values of Goniometry for Experimentalgroup A and Conventional group B



DISCUSSION:

1. This study investigates effects of movement with mobilization and scapular stabilization technique in reducing range of motion and pain among subjects with shoulder impingement syndrome. The interventions consist of 5 days per week for 4 weeks with duration around 20 minutes in 3 sequences of 10 repetitions with a rest interval of 30 seconds between each sequence. The movement with mobilization focus on increasing shoulder range of motion (ROM), and regain its normal function. The intervention which was given to participants by allocating them into 2 groups i.e, (experimental) group A and (conventional) group B where they had during rehabilitation time. Also, the collected data states that experimental group A given us better results. Not only the range of motion of shoulder but also reduce pain in shoulder joint. Therefore, the condition shoulder impingement syndrome isreduced and got better results. The study states that movement with mobilization techniques have better results and improve movements in increasing shoulder range of motion and reducing pain.

2. According to article proposed in 2015, Jose A Delgado – Gil , Eva Prado – Robles concluded that patients with shoulder impingement syndrome who had four Movement with Mobilization sessions performed significantly better than those in the sham group in terms of pain free range of shoulder flexion, maximum shoulder flexion, and maximum external rotation and patients receiving movement with mobilization experienced significantly greater reduction in the intensity of pain during maximal shoulder flexion and maximal shoulder external rotation than those other patients receiving sham treatment.

3. According to article proposed in 2016, Paula Rezende Camargo in Journal of manipulative and psychological therapeutics he concluded that, the beneficial effects of the Movement with mobilization may have been influenced by changes in motor control and pain severity. The results of this study demonstrated that sham and MWM techniques appeared to be equally successful in terms of external rotation and abduction range of motion (ROM), discomfort, and function.

4. According to article proposed in 2012, Olivera C Djordjevic, Danijela Vukicevic concluded that in patients with rotator cuff lesions and impingement syndrome or impingement shoulder.

CONCLUSION:

The results and the data obtained from this research was statistically signified and concluded that there was a definite and positive effect of movement with mobilization technique among subjects with shoulder impingement syndrome.

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