



# TO COMPARE THE EFFECT OF BOWEN TECHNIQUE VERSUS POSITIONAL RELEASE TECHNIQUE ON TRAPEZIUS MUSCLE IN SUB-ACUTE TRAPEZITIS

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## ABSTRACT:

**BACKGROUND:** The upper Trapezius muscle is designated as postural muscle and it is highly susceptible to overuse. Trapezitis is usually caused by placing too much stress or strain over the Trapezius muscle. Trapezius muscles help with the function of neck rotation, side bending and extension. Treatment of Trapezitis requires a multifaceted approach such as rest; isometric relaxation techniques; manual therapy which are beneficial for Trapezitis, so we combined such conventional therapy with Positional release technique and Bowen technique. Positional Release Therapy (PRT) used for treatment of trigger points.

**METHODOLOGY:** - According to inclusion criteria 30 subjects from Ahmedabad Physiotherapy College were selected. With the help of simple chit method of randomization all 30 subjects were divided into two different groups. Group A Bowen technique, and Group B positional release technique.

**RESULT :-** Result were statistically analyzed using paired and unpaired t-test by using SPSS version 20, there was significant improvement in the pain, movement and neck severity index in the Both the Groups

**CONCLUSION:** - Bowen technique and the positional release technique suggest improvement on sub-acute Trapezitis muscles. There is no significant difference in both the techniques.

**KEY WORDS:** - Bowen technique, positional release technique, Trapezius muscle, treatment of trigger point

## INTRODUCTION

The Trapezius being a paired muscle of the surface of the back which stays lateral to the spine of the bone scapula and runs in a longitudinal direction from the occiput to the lower vertebrae of the thoracic spine. Its function mainly involves moving the scapula and supporting the upper limb.

There are 3 functional parts of the Trapezius:

- 1) Upper part (descending fibers): It supports the weight of the arm.
- 2) Middle region (transverse fibers): works to retract the scapula.
- 3) Lower part (ascending fibers): It medially rotates and depresses the scapula.

The vital function of this muscle is lifting the head up and elevation of the shoulder joint. It promotes movement of rotation and stabilizes scapula. Trapezitis is defined as inflammation of Trapezius muscle that can be said to be a type of myofascial pain syndrome. It is highly prone to overuse and overstretch. <sup>[1, 2]</sup> most of the symptoms of the overuse are reported of having pain at rest and aggravation of pain while activity. Referral pain from another area of inflammation can also present. <sup>[3]</sup> Among Indian population prevalence of Trapezitis is found to be 5.9-38.7%. <sup>[4,5,6]</sup>, which account us to find the most suitable treatment approach for it.

Currently musculoskeletal pain incidence is increased due to modernization and urbanization and is frequently produced by the expanded utilization of computers and mobile phones in bad posture position and supported situated stance. <sup>[8]</sup> Studies have shown that neck discomfort and pain in 67% of the all out populace has been capable because of abuse of muscles in the scapular and neck locale among those with musculoskeletal problems in current culture. <sup>[9]</sup>

The majority of cases of neck discomfort and pain are not because of a physical issue rather are related with a utilitarian anomaly. Neck agony can cause myalgia, weakness, and cervicogenic headaches. It can likewise trigger transmitting ache as radiculopathy related with limited movements between the vertebrae (ROM) may be created due to neck musculature strain and spasm accompanied with pain <sup>[10]</sup>. Constant neck pain lead to limitation in the function of individual and play a role in limiting his activities of daily living. <sup>[11]</sup>

Consequently, early signs intense neck ache if not treated well leads to the chronic stage of pain and which becomes really tough to treat. As well as require more time than then the acute conditions. As of late, different administrations have been applied to musculoskeletal torment, including the utilization of oral meds and more intrusive treatment, for example, drug infusions.

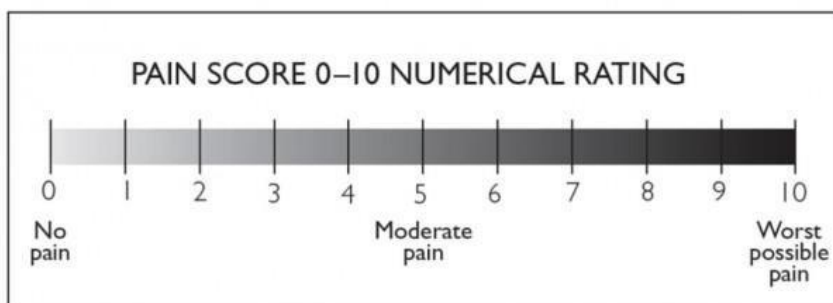
Conventional therapy and exercise have shown improvement in subjects as they neurologically suppress the pain on intrinsic level. Muscle compression sufficiently long to permit development past the obstruction with isometric neck constriction, there is an incitement of muscle proprioceptors which might deliver relief from discomfort as indicated by the aggravation of the pain gate hypothesis, where in the mechanoreceptors afferents conveyed by the huge breadth axon restrains nociceptors afferent at the dorsal horn of spinal cord.

Treatment of Trapezitis requires a diverse methodology like rest; isometric unwinding procedures; manual treatment which are advantageous for Trapezitis, so we consolidated such regular treatment with Positional Release Therapy (PRT) delivery strategy and Bowen strategy and utilized it for treatment of trigger focuses. <sup>[12,13]</sup>

Treatment by manual strategy of Bowen, which is a wonderful setting of treatment of muscles along with connective tissue. The Bowen technique was created by the movement scientist Tom Bowen in Geelong region of Australia in year 1950 <sup>[14]</sup> It implies unobtrusive inputs to the body in the form of moves that would push the body to repair itself, regularly from the wear and tear. <sup>[15]</sup> A Bowen strategy session commonly takes about 15mins to an hour. It is arrangements of delicate moves performed deliberately by the therapist.

The direction of move in this technique is away from the body of patient. Usually two fingers are used on the insertion of muscle and the middle one third of the affected muscle. There is both an actual activity and a vigorous activity done during this procedure. [16]

The present study is to compare that which of the two techniques i.e. Bowen technique and positional release technique is better for patients with Sub-acute Trapezitis.



### AIM & OBJECTIVE OF STUDY:

- 1) To compare Bowen technique and conventional exercises and conventional exercises with positional release technique in order to improve the pain and disability in sub acute Trapezitis.
- 2) To identify the effect of Bowen technique on improvement of NPRS and NDI score in sub-acute Trapezitis against the effect of Positional release technique.

### MATERIAL & METHODOLOGY

Study was carried out after obtaining the Ethical Committee approval. Written consent was obtained before starting the study. Total 30 subjects having age group 20 to 45 years were recruited for the study.

#### INCLUSION CRITERIA:

- Age: between 20-45 year
- Gender- Male and Female
- On palpation painful trigger point at upper and/or lower Trapezius
- Restriction of neck movement due to pain
- Subject willing to participate

#### EXCLUSION CRITERIA

- Patients having any other inflammatory conditions around neck region.
- Patients with recent history of trauma or fracture of cervical spine.
- Patient with pathological conditions pertaining to cervical spine or marked degenerative changes.
- Cervical radiculopathy or myopathy, spondylolisthesis of cervical spine and any cervical spine surgery.
- Mentally disabled person; who is not able to understand commands of therapist.
- Subjects under medication for pain for same reason.

### OUTCOME MEASURES:

#### Numerical pain rating scale:

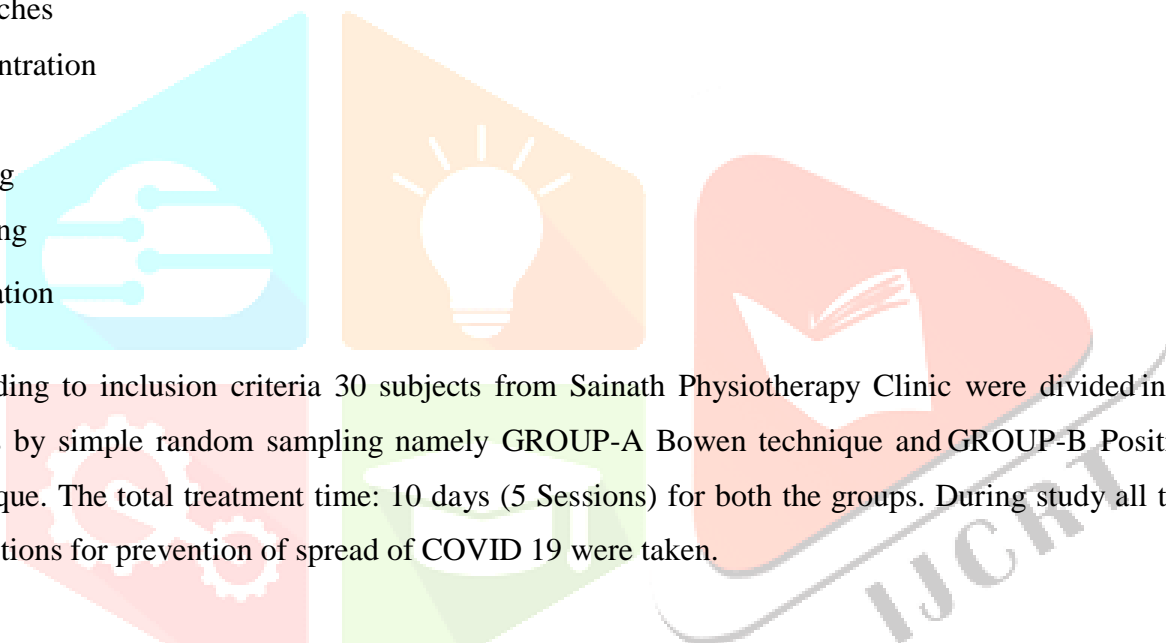
The Numeric Pain Rating Scale (NPRS) is best pain rating outcomes also proved valid for chronic pain due to rheumatic diseases. [17,18,19,20,21]

**Neck Disability Index**<sup>[22,23,24]</sup>

The Neck Disability Index (NDI) is a subjective outcome that decide how neck pain affects the activities of life on daily basis of the patient. It gives an account of disability by the chronic cervical pain experienced by the patient. The NDI is the most employed instrument for surveying the evaluation of handicap in patients with neck pain by the patient itself with confidence interval of 90%.

The NDI include ten outcomes like:

- 1) Pain Intensity
- 2) Personal Care
- 3) Lifting
- 4) Reading
- 5) Headaches
- 6) Concentration
- 7) Work
- 8) Driving
- 9) Sleeping
- 10) Recreation



According to inclusion criteria 30 subjects from Sainath Physiotherapy Clinic were divided into two equal groups by simple random sampling namely GROUP-A Bowen technique and GROUP-B Positional release technique. The total treatment time: 10 days (5 Sessions) for both the groups. During study all the necessary precautions for prevention of spread of COVID 19 were taken.

**PROCEDURE:**

Conventional therapy was given prior to the intervention to both the groups.

**Conventional therapy:**

- **Stretching:**

Patient position: Passive stretching was applied with patient in comfortable supported position fully relaxed.

Dosage: three repetitions of 45 seconds hold. And about 30 sec of rest n between each repetition<sup>[14]</sup>

- **Isometric neck exercises:-**

Patients were instructed to contract the muscles.

Dosage: hold for 10sec<sup>[15]</sup> and Rest of seconds was given and patient performed 1 set of 10 repetition each.

- **Strengthening exercises:**

scapular retractors strengthening exercises Dosage: 1 set of 10 repetitions<sup>[16]</sup>

**GROUP A: BOWEN TECHNIQUE<sup>[26]</sup>+CONVENTIONAL THERAPY:**

Following steps were performed:

- 1) The patient was asked to lie on their stomach and head and neck were supported by pillows.
- 2) Therapist placed her thumb on the affected muscle portion.
- 3) Hooking the thumb on the lateral side of the muscle with firm pressure against the muscle.
- 4) hold there for few seconds so that the nervous system gets stimulated and records attention.
- 5) slide the thumb to the medial edge of the muscle till the muscle gives a pluck response.
- 6) Carry the skin and along with the affected part of muscle first with thumb and then progressing with other fingers.
- 7) The hands are placed with space between the thumbs and fingers approximately of 1-2 inches. To let the hands move the muscles at the same time.

Treatment time - 10 days (5 sessions)

**GROUP -B: POSITIONAL RELEASE THERAPY<sup>[24,25]</sup>+ CONVENTIONAL THERAPY:**

1. The patient position: sitting with the cervical spine in a neutral position. The therapist palpates and identifies trigger point in the upper Trapezius muscle.
2. The therapist applies gradually increasing pressure till the patient feels sensation of pain and pressure both.
3. Then the patient is passively placed in a position that reduces the tension at the point of palpation and reduces the pain sensation upto 70%.
4. The position was usually in the position of passive stretch of Trapezius that is cervical extension, same side side-flexion, and opposite side cervical rotation (5-8 degrees). Upper extremity positioned in passive abduction and maintained for 90 seconds.
5. Lastly the patient was slowly passively placed in neutral position of the cervical spine. Treatment time – 10 days (5 sessions)

**RESULTS:**

The results show that there is improvement in Pain, Cervical Rotation, Cervical Extension and Cervical Lateral Flexion in Both the Group and which is statically significant.

It shows that the neck severity index is significantly decreased after treatment there is no significant difference in the value of both groups at 0.05 significant levels. Both the treatment suggests improvement in Neck disability Index.

## DISCUSSION

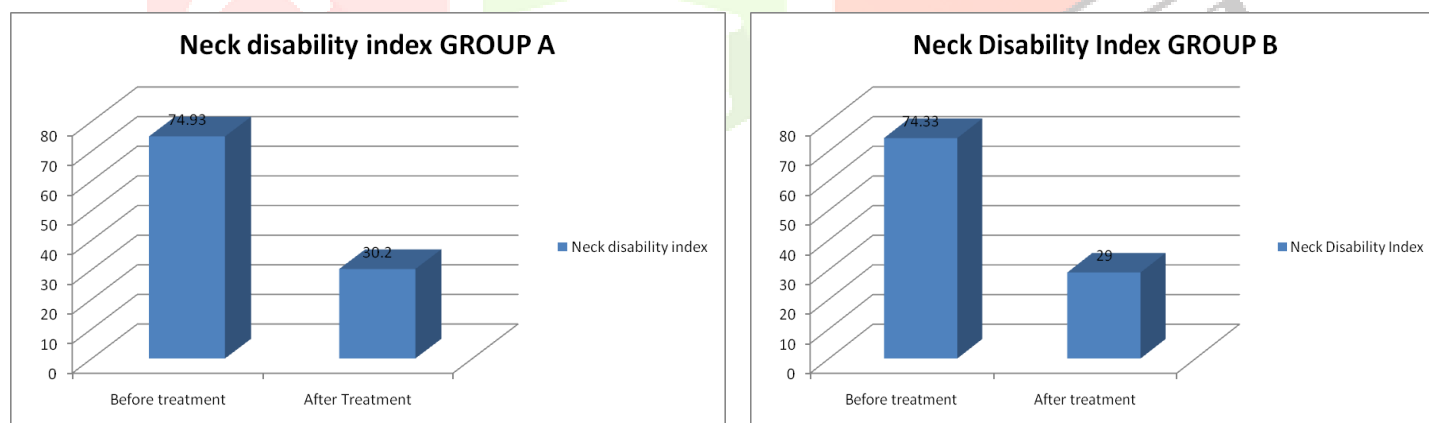
The effect of Positional release technique and Bowen technique were investigated in order to fulfill the objective of the study.

The both techniques in the study show significant improvement NPRS and NDI.

The groups in this study were heterogeneous groups with both male and female population, future studies could be done taking up a homogenous samples with literature review suggests that the incidence of neck pain and upper Trapezius spasm is more in the female population.

[26,27].

Bowen therapy worked to reduce the symptoms for almost all the patients. Thus it can be seen that the participants' associated morbidity was reduced by Bowen therapy. This then impacted on their ability to Engage with their usual daily activities and their general sense of well-being. The participants were satisfied by this improvement.



Bowen technique shows significant reduction in pain, improvement in Cervical range of motion and neck disability. This effect can be attributed to the fact that Bowen therapy works through muscle tension and tone in order to restore a proper resting muscle tone. There are responses triggered by such simple process and then end results is a lessening of pain and tension cycles and return to more optimal function. Fascia has all over distribution on the body that help in functional movements and overall support the framework of the musculoskeletal system. [26]



According to previous studies Positional Release Technique works on the mechanism of muscle spindle and the reflex mechanism of the muscle spindles. This mechanism is known to control the spasm and the level of tension relationship in the surrounding areas of soft tissue. This occurs due to regulation of normal firing pattern of the muscles.

These techniques work to reduce the hyperactivity of the myotactic reflex arc and to reduce the overwhelming afferent nerve impulses within the arc that may lead to an overflow of neurotransmitters into the associated dermatome, resulting in referred pain.

This phenomenon is known as a “facilitated segment”. PRT ‘sets the stage’ for normal processes to occur more efficiently. Reduction in localized spasm increase range of motion, decreases pain, allows normal circulation and improves lymph drainage and increases the potential for more normal biomechanics. PRT strongly complements traditional therapy regimens by allowing them to be more effective. Therefore the improvement in experimental group could be due to these effects in the patients with sub-acute type of Trapezius inflammation and myalgia.<sup>[28,29,30]</sup>

**Kumaresan et al** in his study concluded the conventional physiotherapy and positional release technique are significant contributors in change in the intensity of the pain. This effect was seen from as early as the seventh day of treatment protocol. Decrease in pain intensity was statistically significant in the patients of the group which received the positional release therapy.<sup>[31]</sup>

**Carlos Alberto Kelencz et al** analysed by the means of electromyography the effect of positional release technique. Upper fibres of Trapezius muscle was treated for trigger points with positional release. The result of this experiment was that patients had a gradual reduction in pain after each session. Thus proving effectiveness as it reduced the tension of in the upper Trapezius and help get rid of musculoskeletal pain. Along with these effects secondary benefits of posture correction was observed.<sup>[32]</sup>

Croft *et al* concluded that all participant reported improvement in the functional mobility in the frozen shoulder with 70% of the total participants reported no difference affected and non- affected parts after positional release.

The result of this study had better response than rest of the studies on conventional physiotherapy.<sup>[33,34,35]</sup>

Dodenhoff *et al.*, discussed that Bowen therapy may have an effect on the duration and severity of condition and thus morbidity reduced.<sup>[36]</sup>

During this study following the treatment session Pain scores were decreased markedly. Patients reported no pain or improvement on a greater extent.

It was noted secondarily that much milder words were being used to describe the pain and discomfort following treatments.

**CONCLUSION:**

There is no significant difference in the value of both groups at 0.05 significant levels. Both the treatment gives same improvement in neck disability index. As we can see from above data that both treatment has similar effect And it show no significant difference in the outcome. Bowen technique and positional release technique both are equally effective.

**REFERENCES :**

- 1) Carvalho S, Babu V, Kumar S, Ayyapan.V . R: Effect Of Positional Release Technique In Subjects With Sub-Acute Trapezitis, *Int J Physiother*; (2014), 1(2):91-99.
- 2) Rajalaxmi.A, Kumar. S, Shaker. I: Effect Of Transcutaneous Electrical Nerve Stimulation and Trapezitis, *International Journal Of Pyhsiotherapy And Research*; (2013),1 (5):205-7.
- 3) Richard L. Drak , A.Wayne Adam et.al *Gray's Anatomy 2nd Addition* ; Page No 89
- 4) Fejer R, Kyvik KO, Hartvigsen J: The prevalence of neck pain in the world population: A Systemic critical review of the literature, *Eur Spine J*. 2006; 15:834-848.
- 5) .Johnson G, Bogduk N, Nowitzke A, House D: Anatomy And Actions Of The Trapezius Muscle, *Clinical Biomechanics*; (1994) 9(1):44-50).
- 6) V.N.Ravish, Shridhar and Sneha Helen: To compare the effectiveness of myofascial release technique with laser in patients with unilateral trepezitis. From: *Journal of Medical and dental sciences* (2014, vol.3, issue 9)
- 7) Ibanez-Garcia J., Alburquerque- Sendin, F, Rdriguez –Blanco et al: Changes in masseter trigger points following strain-cunterstrain or neuro-muscular technique. (2009, *J Bodyw Mov Therapy*; 13;2-10)
- 8) Falla D. Unravelling the complexity of muscle impairment in chronic neck pain. *Man Ther* 2004;9:125-33.
- 9) Cheng CH, Wang JL, Lin JJ, Wang SF, Lin KH. Position accuracy and electromyographic responses during head reposition in young adults with chronic neckpain. *J Electromyogr Kinesiol* 2010;20:1014-20.
- 10) Rezasoltani A, Ahmadipoor A, Khademi-Kalantari K, Javanshir K. The sign of unilateral neck semispinalis capitis muscle atrophy in patients with chronic non-specific neck pain. *J Back Musculoskeletal Rehabil* 2012;25:67-72.
- 11) Harvold M, MacLeod C, Vaegter HB. Attentional avoidance is associated with increased pain sensitivity in patients with chronic posttraumatic pain and comorbid posttraumatic stress. *Clin J Pain* 2018;34:22-9.
- 12) Hunold KM, Esserman DA, Isaacs CG, Dickey RM, Pereira GF, Fillingim RB, et al. Side effects from oral opioids in older adults during the first week of treatment for acute musculoskeletal pain. *Acad Emerg Med* 2013;20:872-9.
- 13) Eng-Ching Yap: Myofascial Pain – An Overview, *J. Annals Academy Of Medicine A* (2007),;1:36.
- 14) Umit Dundar, Ozlem Solak, Vural Kavunc: Effectiveness Of Ultrasound Therapy In Cervical Myofascial Pain Syndrome: A Double Blind, Placebo- Controlled Study, *Turk J Rheumatol*; (2010), 25:110-15}.
- 15) Dr.S.Anandh: To Compare The Effectiveness of Positional Release Therapy Versus Active Release Technique with Posture And Body Mechanics Training in working Women with Trapezius Myalgia. : *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)* Volume 22, Issue 8, Ver. 17 August. 2017 PP 25-37.
- 16) Sahem A. M. AL shawabka: Paositional release technique versus manual pressure release on upper trapezius muscles in patients with myofascial pain dysfunction syndrome. *Cairo university.*, (Volume 18, No (1) Jan, 2013).



- 17) Childs JD, Piva SR, Fritz JM. Responsiveness of the numeric pain rating scale in patients with low back pain. *Spine* 2005;30:1331–4.
- 18) Jensen MP, McFarland CA. Increasing the reliability and validity of pain intensity measurement in chronic pain patients. *Pain* 1993;55: 195–203.
- 19) Rodriguez CS. Pain measurement in the elderly: a review. *Pain Manag Nurs* 2001;2:38–46
- 20) Ferraz MB, Quaresma MR, Aquino LR, Atra E, Tugwell P, Goldsmith CH. Reliability of pain scales in the assessment of literate and illiterate patients with rheumatoid arthritis. *J Rheumatol* 1990;17:1022–4
- 21) HAWKER GA. Measures of Adult Pain. *Arthritis Care & Research* 2011; 63,S240– S252
- 22) TRACsa Trauma Injury and Recovery. Clinical guidelines for best practice management of acute and chronic whiplash-associated disorders. Canberra: National Health and Medical Research Council; 2008.
- 23) BirgittaHelmersonAckelman, Urban Lindgren: Validity And Reliability Of A ModifiedVersion Of Neck Disability Index, *JRehabil Med*; (2002), 34: 284–8
- 24) Cleland ,John child, Julie m:Psychometric properties of neck disability index and numeric pain rating scale in patient with mechanical neck pain.(Jan 2008,Arch Phys Med Rehab Vol 89)
- 25) Denise Deig. The effects of Positional Release and Stretching on surface EMG Activity of Upper Trapezius Muscles. Master of Science Research Project. Indianapolis, IN University of Indianapolis, 1994.
- 26) BOWEN THERAPY- A new treatment Modality for pain management in occupationaltherapy, Bowen therapy special interest Group, Hong kong occupational Therapy Association.
- 27) Vernon H,Mior S. The neck disability index; a study of reliability and validity. *J manipulative physiolther* 1998;21:75-80
- 28) Kerry j. D' Ambrogio, George b. Roth. Positional Release Therapy. 1st ed; 1997.
- 29) Lawrence H. Jones, DO. Jones Strain Counter strain. 2nd ed; 1995.
- 30) Janet D Travell, David G Simons. Myofascial Pain and Dysfunction: The Trigger pointManual. Volumes 1 (Upper Body). 2nd ed; 1983.
- 31) A.kumaresanG.Deepthi, VaiyapuriAnandh, S.Prathap. Effectiveness of Positional Release Therapy in treatment of Trapezitis. *International Journal of Pharmaceutical Science and Health Care*. 2012; 1(2): 71-81.
- 32) Carlos Alberto Kelencz, Victor Alexandre F. Tarini, and Cesar Ferreira Amorim. Trapezius upper portion trigger points treatment purpose in Positional Release Therapy with electromyographic analysis. *North American Journal of Medical Sciences*. 2011; 3(10): 451–455.
- 33) Croft P, Pope D, Silman A. (1996) The clinical course of shoulder pain: prospective cohort study in primarycare. *British Medical Journal*; 313(7057): 601-602.
- 34) Van der Heijden GJMG, van der Windt, DAWM, and de Winter AF (1997) Physiotherapy for patients with soft tissue shoulder disorders: a systematic review of randomized trials. *British Medical Journal*;315(7099): 25-30.
- 35) Winters JC, Sobel JS, Groenier K, Arendzen HJ, Meyboom-de Jong, B. (1997) Comparison of physiotherapy, manipulation, and corticosteroid injection for treating shoulder complaints in general practice: a randomized, single blind study. *British Medical Journal*; 314(7090):1320
- 36) Dodenhoff RM, Levy O, Wilson A and Copeland SA. (2000) Manipulation under anaesthesia for primary frozen shoulder: effect on early recovery and return to activity.*J Shoulder Elbow Surg*; 9(1): 23-26.