

COMPARISON OF DRY NEEDLING VERSUS MYOFASCIAL RELEASE ON PAIN AND FUNCTION IN SUBJECTS WITH UPPER TRAPEZITIS

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Abstract-

Back ground and objective: Neck is the most common site of non- traumatic musculoskeletal pain, roughly two thirds of the general populations have neck pain at some time in their lives and the prevalence is highest in middle age. Trapezius pain is a classic example of stress pain and the most common musculoskeletal disorder which leads to long and serious disability. It is usually caused by placing too much stress or strain over the Trapezius muscle. The Upper Trapezius muscle is designated as Postural muscle and it is highly susceptible to overuse. Trapezius muscles help with the function of neck. Tightness in the muscles can decrease function of neck. Physiotherapy techniques like Dry Needling (DN) and Myofascial Release Technique (MFR) have been proposed as an adjunct to Conventional therapy to treat Trapezitis. Both the techniques have been proved on reducing Pain, improving and function which enhance the quality of life in subjects with Upper Trapezitis and literature is limited on their comparison. Hence need of the study arises.

Methods: Quasi experimental study design. In this study, there were 80 subjects, clinical diagnosis of upper trapezitis, and who were divided into two groups at randomly. The subjects in Group A (n = 40) received Dry Needling (DN), while the subjects in Group B (n = 40) received Myofascial Release technique (MFR). Intervention was given to participants thrice a week for four weeks. The VAS for pain and the Neck Disability Index for function were used to assess the intervention's effectiveness.

Results: Independent 't' test was used to compare the mean significance difference between continuous variables. Paired 't' test was used to assess the statistical significance difference between pre and post test scores. Statistical analysis of this data revealed that, both groups significantly improved in both parameters when compared within groups, but when compared between groups, both the groups improved in reducing pain and increasing function.

Conclusion: The study concludes that, after four weeks of intervention both groups that is the Dry needling and Myofascial release technique shows similar improvements in reducing pain and improving function in subjects with upper trapezitis.

Key words: Upper Trapezitis, Dry Needling (DN), Myofascial release technique (MFR) , Visual analogue scale (VAS), Neck Disability Index (NDI)

INTRODUCTION

Trapezitis is defined as an "Inflammation" of Trapezius Muscle. It is intended to be a postural muscle and is prone to overuse ¹. Because of its shape and placement, Trapezius was once referred to as a "SHAWL" muscle by anatomists ². It lies back of neck and help in shrugging movement of shoulder along with upward movement of head ³.

Trapezius pain is a classic type of stress pain, it is the most frequent musculoskeletal condition that causes long-term, severe disability ⁴. The most prevalent location for non-traumatic musculoskeletal pain is the neck; two thirds of the general population experience neck discomfort at some point in their lives, with middle age being the highest frequency ⁵.

Neck pain was the fourth most common cause of severe disability in the Global Burden of Disease 2010 report^{6,7}. The global incidence of neck pain is 4.9% (females: 5.8%, males: 4.0%). The range of prevalence for neck pain is 16.7% to 75% ⁸, in that the Trapezius muscle's myofascial trigger points (myofascial trigger points) estimate 93.75%, and that the nearly horizontal fibres of the Upper Trapezius muscle contain active myofascial trigger points on the right (82.1%) and left (79%) sides ⁹.

Neck pain is most frequent in the region of the upper trapezius muscle. Neck pain is a musculoskeletal condition that often becomes chronic and can result in high level of disability¹⁰. In today's societies, musculoskeletal pain is a major cause of morbidity. About two-third of the population report having chronic neck pain at some point in their lives¹¹.

According to recent research, the pathogenesis of trapezititis may arise from muscle tissue injury and overload, which causes the localised fibres to involuntarily shorten. The affected soft tissue accumulates high levels of metabolic waste products as a result of receiving less oxygen, glucose, and nutrient delivery. This series of actions culminates in the formation of trigger points (TrPs) and modified tissue pain. Trigger Points (TrPs) are clinically significant to identify because they have the potential to limit functional activities and have been linked to hyperalgesia and limited range of motion (ROM). The International Association for the Study of Pain (IASP) recognizes that myofascial pain syndrome is a common source of musculoskeletal pain¹².

Myofascial pain syndrome is a pain condition characterized by trigger points. Although different definitions of are used among the different health care professions, the most commonly accepted definition maintains that: a myofascial trigger point is a hyperirritable spot within a taut band of skeletal muscle that is painful on compression, stretch, overload, or contraction of the tissue which usually responds with a referred pain that is perceived distant from the spot¹³.

Clinically, there are two types of myofascial trigger points: latent and active. An active trigger point was first described by Simons et al. as "a myofascial trigger point that causes a clinical pain complaint." It mediates a local twitch response of muscle fibres when stimulated, is always tender, inhibits the muscle from fully lengthening, weakens the muscle, and refers a pain that the patient recognizes upon direct compression^{13,14}.

Likewise, latent trigger point defined as "a myofascial trigger point that is clinically quiescent with respect to spontaneous pain; it is painful only upon palpation." In addition to causing referred pain sensations, both active and latent trigger points have the ability to cause autonomic phenomena within their pain referral zone^{15,16}.

Simons et al. postulated that excessive acetylcholine release at the neuromuscular junction (motor endplate) is the cause of palpable taut bands in the affected muscles. In this case, persistent contraction of the muscle fibres causes increased secretion of sensitising substances, which can result in pain and autonomic reactions like increased sweating, vasoconstriction or vasodilation, and pilomotor activity in the muscle. This is accompanied by increased metabolism and local ischemia¹⁷.

The diagnosis of Myofascial Pain Syndrome (MPS) is made by physical examination and history, the physical examination is the palpation of muscle, and the history is that of the nature of the pain. As of yet no laboratory test exists that enables the determination of a clinical diagnosis. Currently, the diagnosis is established by locating a myofascial trigger point in an individual whose pain is consistently associated with a trigger points¹⁸.

Myofascial pain syndrome has been treated with a wide range of pharmaceutical and non-pharmacological interventions in patients experiencing neck pain. The pharmacological arsenal for managing Myofascial Pain Syndrome (MPS) includes paracetamol, centrally acting muscle relaxants, non-steroidal anti-inflammatory drugs, cyclooxygenase-2 inhibitors, narcotic analgesics, and adjuvant analgesics such as antidepressants or anticonvulsants. Physiotherapy, which includes electrical, physical, and manual techniques (muscle energy technique, mobilization, and manipulation), stretching, and exercise regimens, is also advised as a non-pharmacological approach.^{19,20,21}

Although these approaches are effective, recently, the use of Dry Needling (DN) and Myofascial Release technique (MFR) have drawn much attention in the management of Upper Trapezitis. The DN methods without injection are recommended to manage myofascial pain syndrome^{22,23}. The Dry Needling and myofascial release methods and their clinical efficacy have received more attention and research studies suggested that these techniques are more effective on reducing pain and function in Upper Trapezitis.

Dry needling is defined as a "skilled intervention using a thin filiform needle to penetrate the skin that stimulates myofascial Trigger points, muscles, and connective tissue for the treatment of musculoskeletal pain disorders"²⁴.

Myofascial Release (MFR) is a soft tissue mobilization technique. It can be defined as "The facilitation of mechanical, neural and psychophysiological adaptive potential as interfaced via the Myofascial system. Robert Ward, an osteopath, is attributed with coining the term MFR in the 1960s. MFR therapy involves specifically guided low load, long duration mechanical forces to manipulate the myofascial complex, intended to restore optimal length, decrease pain, and improve function. MFR utilizes the manual traction and prolonged stretching of the fascia and muscle to break down the adhesions, thus helps to decrease the pain and increase flexibility²⁵.

Both Dry Needling and Myofascial Release technique have been proved effective on reducing pain and improving function in Upper Trapezitis. However, literature is limited in their comparison. Hence, the need of the study arises.

REVIEW OF LITERATURE

Ghazelh Vahedi, et al., (2021) has done a study on "DRY NEEDLING PLUS CONVENTIONAL PHYSIOTHERAPY FOR PATIENTS WITH CHRONIC NONSPECIFIC NECK PAIN. A RANDOMIZED CLINICAL TRAIL". The purpose of the study was to evaluate the of conventional physiotherapy plus Dry Needling (DN) technique in patients

with chronic nonspecific neck pain with Sternocleidomastoid (SCM) and Upper Trapezius (UT) muscles involvement. The study was designed as a single-blind randomized clinical trial. A total of 39 patients (19 men and 21 women) with chronic non-specific neck pain participated in this study. They were randomly divided into conventional physiotherapy (control group: n=19) and conventional physiotherapy plus DN (intervention group: n=20). SCM and UT muscle pain, neck disability, and thickness were assessed for all participants in the pre-test, post-test, and follow-up periods. They concluded that the study results show that adding DN to conventional physiotherapy for neck pain can increase the effectiveness of intervention in relieving pain, disability, and SCM and UT muscle thickness in people with chronic neck pain.

Physical Treatments. 2021; 11 (3): 157-170

Fabio F. Stieven PT, DC, PhD, et al., (2021) has done a study on “IMMEDIATE EFFECTS OF DRY NEEDLING AND MYOFASCIAL RELEASE ON LOCAL AND WIDESPREAD PRESSURE PAIN THRESHOLD IN INDIVIDUALS WITH ACTIVE UPPER TRAPEZIUS TRIGGER POINTS: A RANDOMIZED CLINICAL TRIAL”. The purpose of the study was to compare the immediate effects of a single session of dry needling (DN), myofascial release (MR), and sham DN on pressure pain threshold (PPT) and neck pain intensity in individuals with chronic neck pain. In the study the author has taken 44 individuals with chronic neck pain and one group that is Group-A received dry needling and Group-B were given Myofascial release and Group –C were given sham dryneedling. The PPT over the UTM (ipsilateral and contralateral sides) and the proximal head of the radius (ipsilateral and contralateral to the treated side) and neck pain were assessed immediately and 10 minutes after the intervention. The results showed that there was no significant Group and time interaction for PPT in the UTM on the treated side or the contralateral side. The study concluded that a single application of DN or MR generated local and distant hypalgesic responses superior to placebo. Future trials are needed to examine whether these findings occur in long-term follow-ups.

Journal of Manipulative and Physiological Therapeutics. 2021 Feb 1;44(2):95-102

Lynn H. Gerber, et al., (2015) has done a study on “DRY NEEDLING ALTERSTRIGGER POINTS IN THE UPPER TRAPEZIUS MUSCLE AND REDUCES PAIN IN SUBJECTS WITH CHRONIC MYOFASCIAL PAIN”. The purpose of the study was to determine whether dry needling of an active myofascial trigger point (MTrP) reduces pain and alters the status of the trigger point to either a non-spontaneously tender nodule or its resolution. This is a prospective, non-randomized, controlled interventional clinical study and in this study the total of 56 subjects with neck or shoulder girdle pain > 3 months duration and active MTrPs were recruited from a campus-wide, volunteer sample. 52 completed the study (23 male/33 female) with mean age of 35.8 years. The interventions are 3 weekly dry needling treatments of a single active MTrP. The Primary Outcomes are baseline and post treatment evaluations of pain using the verbal analogue scale, the Brief Pain Inventory and the status of the MTrP as determined by digital palpation. Trigger points were rated: active (spontaneously painful), latent (requiring palpation to reproduce the characteristic pain) and resolved (no palpable nodule). Secondary Outcomes are Profile of Mood States, Oswestry Disability Index, Short Form 36, Cervical Range of Motion. The results, showed that 41 subjects had a change in trigger point status from active to latent or resolved, and 11 had no change. Reduction in all pain scores was significant. Hence, they proved that 3week dry needling treatment reduces pain and changes myofascial trigger point status is associated with a statistically and clinically significant reduction in pain. Reduction in pain is associated with improved mood, function and level of disability.

PM&R. 2015 Jul 1;7(7):711-8.

Irrij Javed Jadson, et al., (2017) has done a study on “COMPARISON OF SHORTTERM OUTCOMES BETWEEN DRY NEEDLING AND MANUAL THERAPY ON UPPER TRAPEZIUS TRIGGER POINTS”. The purpose of the study was to compare the effects of trigger point dry needling and trigger point manual therapy of upper trapezius muscle on pain, function and cervical range of motion. This was a randomized control, single blinded clinical trial was conducted from 5th September to 3rd October 2016 in Clinical Facility of Women Institute of Rehabilitation Sciences, Abbottabad. Purposive sampling technique was used for sample selection. After taking consent from patients, total 30 patients with neck pain and active MTrPs were divided randomly in two groups through lottery method. Group A was treated with dry needling, group B was treated only with manual therapy (Progressive Pressure Release Technique). Research data was recorded at the first visit and 4th week by using prescribed validated questionnaire, NPRS, NDI and cervical ROMs with Inclinometer. The final result showed the dry needling Group significantly improves the functional status and decreases pain in the patients. The authors concluded that both groups showed improvement during the follow up period. But dry needling group showed better results than manual therapy group in terms of pain, NDI and cervical range of motion.

Journal Riphah College of Rehabilitation Sciences. 2017 Nov 1;5(2):62-5.

V.N Ravish, Shridhar, et al., (2014) has conducted a study “TO COMPARE THE EFFECTIVENESS OF MYOFASCIAL RELEASE TECHNIQUE VERSUS POSITIONAL RELEASE TECHNIQUE WITH LASER IN PATIENTS WITH UNILATERAL TRAPEZITIS. The purpose of the study was to determine the effect of

myofascial release technique and positional release therapy in trapezititis. This is a Comparative study design, total 60 subjects with unilateral upper trapezius spasm were randomly allocated into two groups namely Group A and Group B and treated with LASER which was common to both the groups Myofascial release technique was given to group A and Positional Release Therapy was given to the Group B respectively for Alternatively 3 days for four weeks after obtaining informed consent. The outcome measures used are Visual analog scale (VAS) for pain, Cervical ROM, Neck disability index. The results showed that there is statistically significant improvement in lateral flexion, reduction in Pain intensity and improvement in functional ability in both the groups. The authors concluded that both the groups has shown significant improvement in reduction of pain, functional limitation and improved range of motion, but Myofascial release with LASER has shown a better improvement than positional release technique with LASER when the subjects in both the groups are compared.

Journal of evolution of medical and dental sciences. 2014 Mar 3;3(9):2161-7

Maneul Rodriguz-Huguet, et al., (2022) has conducted a systematic review on “DRY NEEDLING IN PHYSICAL THERAPY TREATMENT OF CHRONIC NECK PAIN”. The purpose of this review was to assess the effectiveness of invasive techniques in treatment of CNP. The search focused on randomized clinical trials, and according to the selection criteria, eight studies were obtained and concluded dry needling can be effective treatment option for chronic neck pain, positive outcomes were achieved in the short term and in the follow up performed between three and six months, and this technique may offer better outcomes than a placebo intervention based on the application of simulated dry needling. *Journal of Clinical Medicine. 2022 Apr 23;11(9):2370.*

Luis Martin-Sacristan, Cesar Calvo Lobo, et al (2022) conducted a clinical trail “DRY NEEDLING IN ACTIVE OR LATENT TRIGGER POINT IN PATIENTS WITH NECK PAIN A RANDOMISED CLINICAL TRIAL”. The purpose was to determine the efficacy of deep dry needling (DDN) applied on an active myofascial trigger point (MTrP) versus a latent-MTrP versus a non-MTrP location, on pain reduction and cervical disability, in patients with chronic neck pain. This is a randomized, double-blind clinical trial design. A sample of 65 patients was divided into non-MTrP-DDN, active-MTrP-DDN and latent-MTrP-DDN groups. The outcome measures are visual analog scale (VAS), pressure pain threshold (PPT) and Neck Disability Index (NDI) were assessed before, during and after the intervention and up to 1month post-intervention. The study concluded that, Deep dry needling of the trapezius muscle, regardless of whether it is on a trigger point, latent or non-trigger point area, produces the same positive effects in improving pain intensity, discomfort and local mechanical hyperalgesia. In terms of mechanical hyperalgesia at a distance (tibialis muscle), the group with dry needling on the active trigger point had the least improvement. There is no association between the number of LTR and improvement and reproducing the patient’s pain during dry needling with the improvement of the patient. *Scientific Reports. 2022 Feb 24;12(1):3188*

Macros J.Navaroo Sanatana , et al (2020) has conducted a systematic review on ”EFFECTIVENESS OF DRY NEEDLING FOR MYOFASCIAL TRIGGER POINTS ASSOCIATED WITH NECK PAIN SYMPTOMS :AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS”. The purpose of the study was to evaluate the effect of dry needling alone as compared to sham needling, no intervention, or other physical interventions applied over trigger points (TrPs) related with neck pain symptoms. The authors collected randomized controlled trials including one group receiving dry needling for TrPs associated with neck pain which were identified in electronic databases. The outcomes included pain intensity, pain-related disability, pressure pain thresholds, and cervical range of motion. The Cochrane risk of bias tool and the Physiotherapy Evidence Database (PEDro) score were used to assessed risk of bias (RoB) and methodological quality of the trials. The quality of evidence was assessed by using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach. Between-groups mean differences (MD) and standardized mean differences (SMD) were calculated 28 trials were finally included. They concluded that Dry needling was effective for improving pressure pain thresholds immediately after the intervention. No effect on cervical range of motion of dry needling against either comparative group was found. No between-treatment effect was observed in any outcome at mid-term. Low to moderate evidence suggests that dry needling can be effective for improving pain intensity and pain-related disability in individuals with neck pain symptoms associated with TrPs at the short-term. *Journal of clinical medicine. 2020 Oct 14;9(10):3300.*

Maryam Ziaefar, MSc, Amir Massoud Arab et al (2016) has done a study on “CLINICAL EFFECTIVENESS OF DRY NEEDLING IMMEDIATELY AFTER APPLICATION ON MYOFASCIAL TRIGGER POINT IN UPPER TRAPEZIUS MUSCLE”. The purpose of this study was to investigate the effect of dry needling (DN) on pain intensity and pressure pain threshold (PPT) compared with ischemic compression (IC) immediately and 48 hours after each treatment session in individuals with myofascial trigger points in the upper trapezius muscle. This is a randomized contrail trail study design and in the study the author have taken total 31 patients with myofascial trigger points in upper trapezius muscle. Patients were randomly assigned to standard group (N=17) and experimental group (N=14). The treatment for

standard group is Ischemic compression whereas, for experimental group Dry needling. The authors concluded that Dry Needling improved the pain intensity and PPT after 2 days.

Journal of chiropractic medicine. 2016 Dec 1;15(4):252-8.

E Segura-Ortí, S Prades-Vergara, et al (2015) has done a study on “TRIGGER POINT DRY NEEDLING VERSUS STRAIN–COUNTERSTRAIN TECHNIQUE FOR UPPER TRAPEZIUS MYOFASCIAL TRIGGER POINTS: A RANDOMISED CONTROLLED TRIAL”. The purpose of the study was to compare the effects of upper trapezius trigger point dry needling (DN) and strain–counter strain (SCS) techniques versus sham SCS. The study design is randomized controlled trial. Total 34 study subjects with active trigger points were randomly assigned to one of three treatment groups, and received either three sessions of DN (n=12), six sessions of SCS (n=10), or sham SCS (n=12) over a 3-week period. The outcomes data is collected at baseline and 3 weeks post-intervention. The outcomes are Neck disability index (NDI), visual analogue scale (VAS), pain pressure threshold (PPT). The study concluded that there were no differences between the sham SCS, SCS, and DN groups in any of the outcome measures. DN relieved pain after fewer sessions than SCS and sham SCS, and thus may be a more efficient technique. Future studies should include a larger sample size.

Acupuncture in Medicine. 2016 Jun;34(3):171-7.

Lynn H. Gerber, MD, Jay Shah, MD, et al., (2015) has done a study on “DRY NEEDLING ALTERS TRIGGER POINTS IN THE UPPER TRAPEZIUS MUSCLE AND REDUCES PAIN IN SUBJECTS WITH CHRONIC MYOFASCIAL PAIN”. The purpose of the study was to determine whether dry needling of an active myofascial trigger point (MTrP) reduces pain and alters the status of the trigger point to either a non-spontaneously tender nodule or its resolution. This is a prospective, nonrandomized, controlled, interventional clinical study design. A total of 56 subjects with neck or shoulder girdle pain of more than 3 months duration and active MTrPs were recruited from a campus-wide volunteer sample. Among these, 52 completed the study (23 male and 33 female). The intervention was 3 weekly dry needling treatments of a single active MTrP. The primary outcome measure is verbal analogue scale (VAS) and the secondary outcomes are Profile of Mood States, Oswestry Disability Index, and Short Form 36 scores, and cervical range of motion. The study concluded that, Dry needling reduces pain and changes MTrP status. Change in trigger point status is associated with a statistically and clinically significant reduction in pain. Reduction of pain is associated with improved mood, function, and level of disability.

PM&R. 2015 Jul 1;7(7):711-8.

Sai Vispute, Neeraj Kumar, (2022) has conducted a study “A COMPARATIVE STUDY OF IMMEDIATE EFFECTS OF MYOFASCIAL RELEASE TECHNIQUE AND POSITIONAL RELEASE TECHNIQUE ON TRAPEZITIS AMONG THE COLLEGE STUDENT”. The purpose of the study was to compare the immediate effects of Myofascial Release Technique and Positional Release Technique on pain intensity, cervical range of motion, and neck disability index in trapezititis among college students. A total of 100 students with trapezititis meeting the inclusion and exclusion criteria were allocated into two groups to receive single session of Myofascial Release Technique and Positional Release Technique respectively. Pre and Post intervention scores of VAS, CROM and NDI were measured. The results of post intervention score of pain intensity in terms of VAS, cervical range of motion and NDI score showed extremely significant improvement within the groups, while comparing between two groups, there was no statistical significance. The authors concluded that Myofascial Release Technique and Positional Release Technique both are effective in the treatment of trapezius trigger points associated with postural neck pain.

Int J Physiother Res. 2022;10(3):4243-9.

Cesar Fernandez-de-LasPena (2019) has conducted a review on “TRIGGER POINT DRY NEEDLING FOR THE TREATMENT OF MYOFASCIAL PAIN SYNDROME: CURRENT PERSPECTIVES WITHIN A PAIN NEUROSCIENCE PARADIGM “. The authors proposed that the application of trigger point dry needling should be integrated into current pain neuroscience paradigm by combining its application with pain neuroscience education, graded exercise and manual therapy. Additionally, patient’s expectations, beliefs, previous experiences and patient–clinician interaction should be considered when integrating trigger point dry needling into a comprehensive treatment approach.

Journal of pain research. 2019 Jun 18:1899-911.

Bourgaize S, Newton G, et al, (2018) conducted a study on a comparison of the clinical manifestations and Pathophysiology of Myofascial pain syndrome and Fibromyalgia: implications for differential diagnosis and management evaluated that Chronic musculoskeletal Pain is a common condition, with two of its most common forms being Fibromyalgia (FM) and Myofascial pain syndrome(MPS). MPS is characterized by regionally distributed muscular pain associated with Trigger points, whereas FM is predicted on the presence of widespread Pain greater than three months with the expression of symmetrically distributed tender points.

J Can Chiropr Assoc. 2018 Apr; 62(1): 26–41

Daniel Cury Ribeiro, et al, (2018) conducted a study on the Prevalence of Myofascial trigger points in Neck and Shoulder related disorders: a systemic review of the literature stated that Neck and shoulder disorders may be linked to the presence of Myofascial Trigger Points (MTrPs). Active latent trigger points may contribute to neck and shoulder pain causes muscle imbalances, weakness, impaired motor recruitment, altered muscle function and expose joints to suboptimal loading. Seven articles studying different conditions met the inclusion criteria. The prevalence of MTrPs was compared and analyzed. All studies had low methodological quality due to small sample sizes, lack of control groups and blinding. Findings revealed that active and latent MTrPs were prevalent throughout all disorders however, latent MTrPs did not consistently have a higher 10 prevalence compared to healthy controls. And concluded that limited evidence supporting the high prevalence of active and latent MTrPs in patients with neck or shoulder disorders. Therefore, future studies assessing patients' neck or shoulder disorders, with large samples and stronger study designs are required to provide more reliable pooled estimates of point prevalence of MTrPs in these Patients.

BMC Musculoskeletal Disorder 2018 Jul 25; 19(1):25

Lars L Andersen, et al, (2011) conducted study on Prevalence and anatomical location of Muscle Tenderness in adults with Nonspecific Neck/ shoulder Pain stated that many adults experience bothersome Neck/Shoulder Pain. While research and treatment strategies often focus on the Upper Trapezius, other Neck/Shoulder muscles may be affected as well. And evaluated Clinical Neck/Shoulder examination at two large office workplaces in Copenhagen, Denmark with 174 women and 24 men (aged 25-65 years) with Non- Specific Neck/Shoulder Pain for a duration of at least 30 days during the previous year and a pain intensity of at least 2 on a modified VAS-scale of 0-10 participated. Exclusion criteria were traumatic injuries or other serious chronic disease. Using a standardized finger pressure of 2 kg, palpable tenderness were performed of eight anatomical Neck/Shoulder locations in the left and right side on a scale of 'no tenderness', 'some tenderness' and 'severe tenderness' (18- 30%). In comparison, the prevalence of severe tenderness in the upper Trapezius, occipital border and Supraspinatus was 13-19% and medial deltoid was least prevalent (0-1%). In men, the prevalence of severe tenderness in the Levator Scapulae was 13-21% and ranged between 0-8% in the remainder of the examined anatomical locations.

BMC Musculoskeletal Disorder 12, 169 (2011)

Gillian A. Hawker, Samra, et al, (2011) conducted a study on Measures of Adult Pain states that Visual Analog Scale (Vas) for Pain describes the Pain VAS is a uni-dimensionnal measure of Pain Intensity, which has been widely used in diverse adult populations, including those with rheumatic diseases. The Pain VAS is a continuous scale comprised of a horizontal (HVAS) or vertical (VVAS) line, usually 10 centimeters (100 mm) in length, anchored by 2 verbal descriptors, one for each symptom extreme. Instructions, time period for reporting, and verbal descriptor anchors have varied widely in the literature depending on intended use of the scale. The pain VAS is a single-item scale. For pain intensity, the scale is most commonly anchored by “no pain” (score of 0) and “pain as bad as it could be” or “worst imaginable pain” (score of 100 [100- mm scale]). To avoid clustering of scores around a preferred numeric value, numbers or verbal descriptors at intermediate points are not recommended. Recall period for items. Varies, but most commonly respondents are asked to report “current” pain intensity or pain intensity “in the last 24 hours.” The VAS takes less than 1 minute to complete.

ArthritisCare& Research, Vol.63, No. S11.

Snehal Desai and Dr. Kiran Jeswani (2018) conducted study on to compare the effect of Myofascial Release and Ischemic Compression on Pain, Cervical lateral flexion and Function in acute Trapezitis in young adults, 30 subjects with unilateral acute Trapezitis were selected on the basis of inclusion and exclusion criteria and randomly assigned in two groups, Group A and Group B after taking informed consent. Group A received Myofascial release along with Conventional Physiotherapy and Group B received Ischemic Compression along with Conventional Physiotherapy for 10 sessions over a period of two weeks and concluded MFR and Ischemic Compression are both effective in treating acute Trapezitis in young adults, MFR is more effective than Ischemic compression on Pain, cervical lateral flexion and neck disability in acute Trapezitis in young adults.

International Journal of Applied Research 2018; 4(3): 448-454

Neeti Mishra., Anil Mishra., et al (2018) conducted study on "Effectiveness of Muscle Energy Technique Versus Myofascial Release Technique Among Patients with Upper Trapezitis"- A Comparative Study and stated: Study design was Pre-test and post- test experimental study. The Population included subjects of 20 to 35 years of age with upper Trapezitis. The Sampling technique used is purposive sampling. The Study duration was 6 months. The Sample size was 30. The Study setting was M.C.G. Civil hospital and Sparsh physiotherapy clinic, Subjects were preliminary screened based on the inclusion and exclusion criteria. They were allocated in to two groups using Quasi randomization with 15 subjects in each group. The Group A subjects were subjected to muscle energy technique over Upper Trapezius muscle. The Group B subjects were subjected to Myofascial Release Technique over upper Trapezius muscle. Both the groups received conventional therapy. Pre- and post- test scoring of VAS and NDI was conducted for the Group A and

Group B after 4 weeks. Analysis was done using SPSS Software version 18. Descriptive analysis was used to calculate mean and standard deviation. Paired t test was used for inter group analysis. Independent t test was used for intra group analysis for all the dependent variables. The level of significance was set at 95%. And Concluded MET is more effective in reducing pain and improving function in Upper Trapezitis.

International Journal of Recent Scientific Research Vol. 9, Issue, 2(D), pp.23994- 23997, February 2018

Dr. Diptee Waingankar, et al, (2019) conducted study on “IMMEDIATE EFFECT OF MYOFASCIAL RELEASE VS. PASSIVE STRETCHING ON PAIN IN FEMALES WITH UNILATERAL TRAPEZITIS” and tested 50 subjects, including only females aged 40 to 60 years. Assigned randomly into 2 treatment groups, Group A received Myofascial Release and Group B received Passive Stretching. Pain intensity was measured using VAS, Numeric Pain Distress Scale pre and post intervention. There was significant improvement in both Myofascial Release and Passive Stretching. Statistical comparison of result showed that Group A had greater improvement in pain as compared to Group B. Myofascial Release appeared to be more effective than passive stretching to reduce pain in patients with unilateral Trapezitis.

International Journal of Yoga, Physiotherapy and Physical Education Volume 4; Issue 1; January 2019; Page No 10

MATERIALS AND METHODS

STUDY DESIGN: Quasi- experimental study design.

ETHICAL CLEARANCE AND INFORMED CONSENT: The study protocol was approved by the Ethical Committee of GSL Medical College & General Hospital (Annexure-I), the investigator explained the purpose of the study and given the patient information sheet. The participants were requested to provide their consent to participate in the study (Annexure-II). All the participants signed the informed consent and the rights of the included participants have been secured.

STUDY POPULATION: Subjects clinically diagnosed with upper trapezitis by an orthopaedician.

STUDY SETTING: The study was conducted at Department of Physiotherapy, GSL general hospital, Rajamahendravaram, Andhra Pradesh, India.

STUDY DURATION: The study was conducted during the period of one year.

INTERVENTION DURATION: 3 sessions per week for 4 weeks.

STUDY SAMPLING METHOD: Convenience sampling method.

SAMPLE SIZE: A total of 120 subjects with upper trapezitis were screened for eligibility. In that, 80 subjects, both men and women who were willing to participate in the study were included in this study. The recruited participants were explained the purpose of the study and relevance of the study. The participants were included in the study after obtaining informed consent. All the eligible participants were randomized into dry needling and myofascial release group with 40 in each group.

Group A – Dry needling along with conventional physiotherapy (40 subjects),

MATERIALS USED

- Filiform dry needle
- Cotton
- Surgical spirit
- Arm rest chair
- Stool
- Examination Couch
- Pillows
- Stopwatch
- VAS score sheet
- NDI score sheet
- Data collection form

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- Subjects with 25 to 50 years old
- Subjects with neck pain diagnosed with upper trapezitis (>3 months)
- Presence of palpable taut band in upper trapezius muscle
- Presence of hypersensitive tender spot in taut band
- Spontaneous presence of typical referred pain patterns

EXCLUSION CRITERIA

- History of upper quadrant surgery
- History of fibromyalgia syndrome
- Cervical spine surgery and fracture
- Cervical radiculopathy
- Diagnosis of systemic diseases such as tuberculosis, Rheumatism, tuberculosis, cervical myelopathy or multiple sclerosis

OUTCOME MEASURES

VISUAL ANALOUGE SCALE (V.A.S) ²⁶: used to measure pain. The visual analogue scale is a reliable, valid, responsive and frequently used psychometric response scale used for Pain outcome measure. The Visual Analogue Scale has a 10 cm long horizontal line with polar descriptors of '0' has 'no pain' and '10' has 'severe Pain. It located at either end of the line. Patients are instructed to draw a vertical mark on the line indicating their Pain level. The severity of Upper Trapezitis Pain was evaluated by VAS

NECK DISABILITY INDEX SCALE(NDI) ²⁷ : used to access the degree of functional disability in patients with neck pain.

The Neck Disability Index is a 10-item questionnaire that measures patients self- reported neckpain related disability. The patients were given a detailed explanation about the Neck DisabilityIndex. Questionnaire consists of 10 sections that recommended to enable the patient to understand how much the Pain has affected their ability to everyday activities. Patient must choose only one that most applies. Each of the 10 sections scored separately and then added up. The score was done by using ONLINE Scoring Calculator. The Functional status was assessed by means of Vernon Neck Disability Index (NDI). Total scores range between 0 and 50 Points.

0-4	No Disability
5-15	Mild
15-24	Moderate
25-34	Severe
Over 35	Complete Disability

INTERVENTIONS

This is a 4-week study which includes Dry needling for Group A and Myofascial Release technique for Group B, both groups received conventional physiotherapy. The outcomes were measured PRE (at 1st week before starting the treatment) and POST (at the end of 4th week) by the Visual Analogue Scale (VAS) and the Neck Disability Index (NDI) for pain and function, respectively. All the subjects who were eligible for the criteria were randomly allocated into Group A and Group B.

GROUP A

DRY NEEDLING

Subjects in this group received Dry Needling along with conventional physiotherapy. The Dry Needling is a method of insertion of stainless – steel acupuncture needle.

POSITION OF SUBJECT: Sitting position.

PROCEDURE

Dry needling was applied to myofascial trigger points located in upper trapezius muscle. Sterile stainless – steel acupuncture needle of 0.30 mm diameter and 50 mm length, 32 guage with its plastic guide tube was used. The needle was introduced subcutaneously, penetrating the skin to depth of 10 to 15 mm. The surrounding soft tissue was handled using a pincer technique was preferred to ensure optimal target tissue response. A quick in and out technique was preferred to ensure an upper trapezius local twitch response and to promote effectiveness. Needling at the specific myofascial trigger point was continued until the local twitch response was exhausted. Once the first local twitch response was obtained, vertical pistoning of the needle was performed so that a local twitch response was elicited atleast more times. No rotational movement was performed during treatment. The needle was left on the myofascial trigger point for approximate 10 seconds and then removed ²⁸.



Fig No: - 1 (a) Therapist Performing Dry Needling



Fig No: - 1 (b) Therapist Performing Dry Needling



Fig No: - 1 (c) Therapist Performing Dry Needling



Fig No: - 1 (d) Therapist Performing Dry Needling

GROUP-B

MYOFASCIAL RELEASE TECHNIQUE

Subjects in this group received Myofascial Release Technique along with conventional physiotherapy. Myofascial release technique is the method of applying manual pressure over the trigger points.

POSITION OF SUBJECT: Sitting position

PROCEDURE

Patient sitting comfortably with supported back, elbow flexed with forearm placed on a pillow. A low load, long duration stretch is applied along the lines of maximal fascial restrictions. The fascia is palpated, and the pressure is applied for 90-120 seconds. Thus, this procedure was carried out without sliding over the skin (or) forcing the tissue until the fascia complex starts to yield and a sensation of softening will be achieved²⁹.



Fig No: - 2 (a) Therapist Performing Myofascial Release Technique (MFR)



Fig No: - 2 (b) Therapist Performing Myofascial Release Technique (MFR)

CONVENTIONAL PHYSIOTHERAPY:

In both groups, conventional physiotherapy treatments included ultrasound (1 Meg, 1 W/cm², 5 min), TENS (typical, 100 Hz, 20 minutes) and exercise therapy for neck pain (isometric and stretching exercises)²⁰



Fig No: - 3 (b) Therapist Performing Ultrasound



Fig No: - 3 (b) Therapist Performing TENS

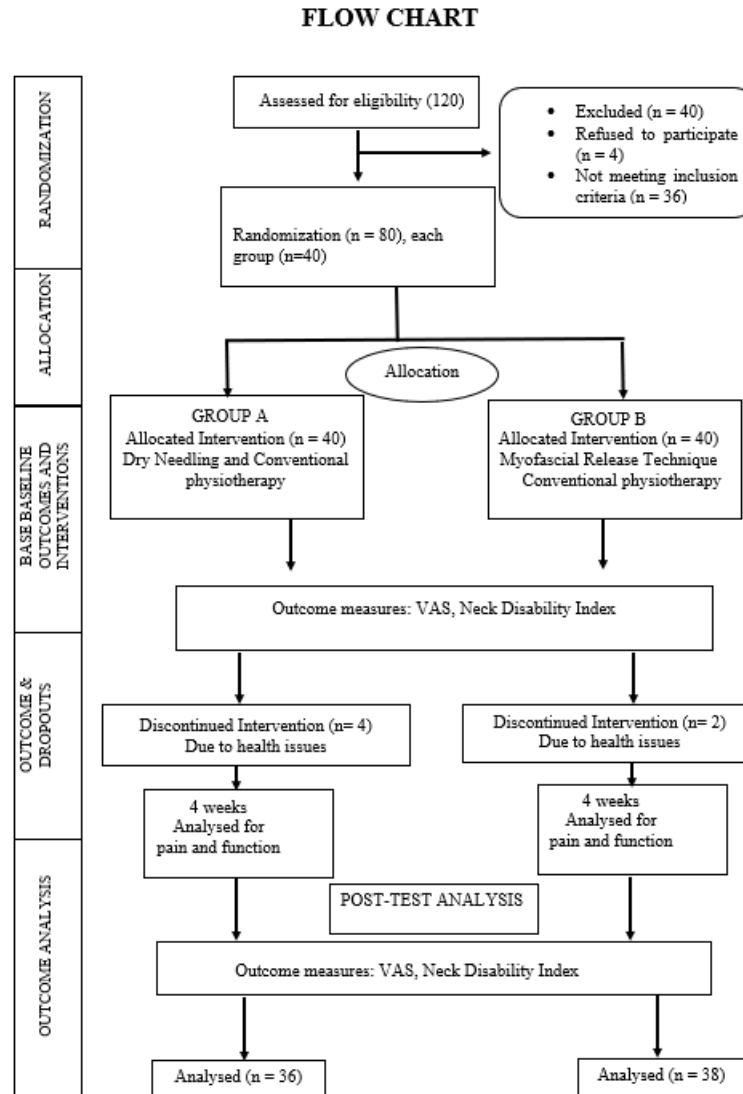


Fig No: - 3 (c) Therapist Performing neck isometrics.



Fig No: - 3 (d) Therapist Performing stretching.

FLOWCHART



STATISTICAL ANALYSIS

All statistical analysis was done by using SPSS software version 21.0 and Microsoft excel-2007. Descriptive data was presented in the form of mean \pm standard deviation and mean difference Percentages were Calculated and Presented.

Within the groups: Paired Student “t” test was performed to assess the statistical difference within the groups for Pain and Function from Pre-test and Post-test values.

Between the groups: Independent student “t” test was performed to assess the statistically significant difference in mean value between the groups for Visual Analogue Scale Pain and Neck Disability Index for Function. For all statistical analysis, $P \leq 0.05$ was considered as statistically significant.

RESULTS

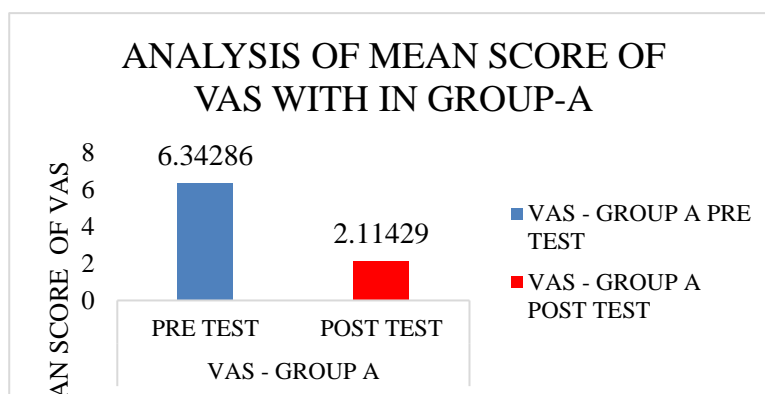
The aim of the study was to find the effectiveness of Dry Needling (GROUP-A) and Myofascial Release (Group-B) on Pain and Function in Subjects with Upper Trapeztitis. The results of this study were analysed in terms of reduction of pain on Visual Analogue Scale and improved function on Neck Disability Index. The Consort flow chart of the study showed the study organization in terms of Subjects Screening, Random allocation and analysis following the Intervention.

A total of 120 subjects were screened for eligibility, amongst 80 subjects were included in the study trail. All the 80 subjects who met inclusion criteria have undergone baseline assessment and included subjects were randomized into two equal groups consisting 40 subjects in each group. In this study 36 participants completed training in Group-A and 38 subjects completed training in Group-B with dropouts of 4 and 2 in respective groups.

Comparison was done both within the group as well as in between the two groups. So as to evaluate the intra group and inter group effectiveness of Dry Needling (GROUP-A) and Myofascial Release (Group-B) which are under consideration in present study.

ANALYSIS OF MEAN SCORE OF VAS WITHIN GROUP A
TABLE -1

GROUP A		MEAN	SD	P VALUE	INFERENCE
VAS	PRE	6.34286	1.13611	0.001	Highly significant
	POST	2.11429	0.75815		



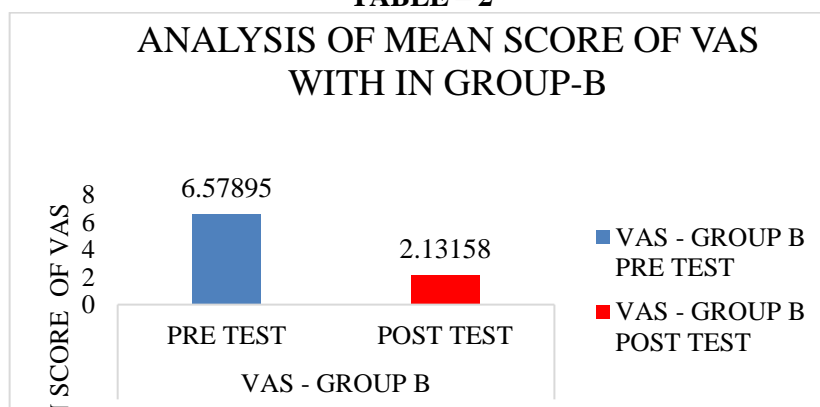
GRAPH-1

RESULTS: The above table and graph shows that the mean score of VAS changes from pre-test to post-test values within group A were found to be statistically highly significant ($p < 0.005$).

ANALYSIS OF MEAN SCORE OF VAS WITHIN GROUP B

GROUP B		MEAN	SD	P VALUE	INFERENCE
VAS	PRE	6.57895	1.05604	0.001	Highly significant
	POST	2.13158	0.96341		

TABLE - 2



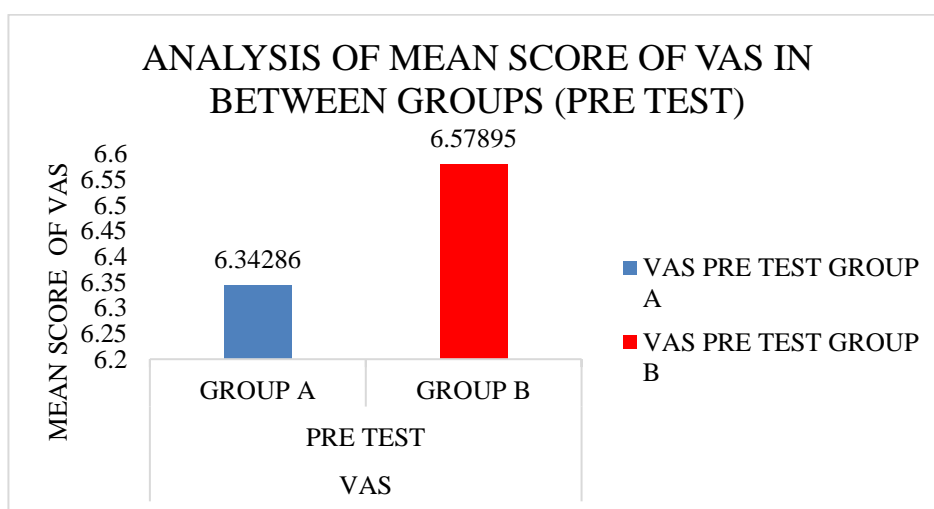
GRAPH-2

RESULTS: The above table and graph shows that the mean score of VAS changes from pre-test to post-test values within group B were found to be statistically highly significant ($p < 0.005$)

COMPARISON OF MEAN SCORE OF VAS IN BETWEEN THE GROUPS AT BASELINE (PRE-TEST)

VAS		MEAN	SD	P VALUE	INFERENCE
PRE	GROUP-A	6.34286	1.13611	0.2893	Insignificant
	GROUP-B	6.57895	1.05604		

TABLE – 3



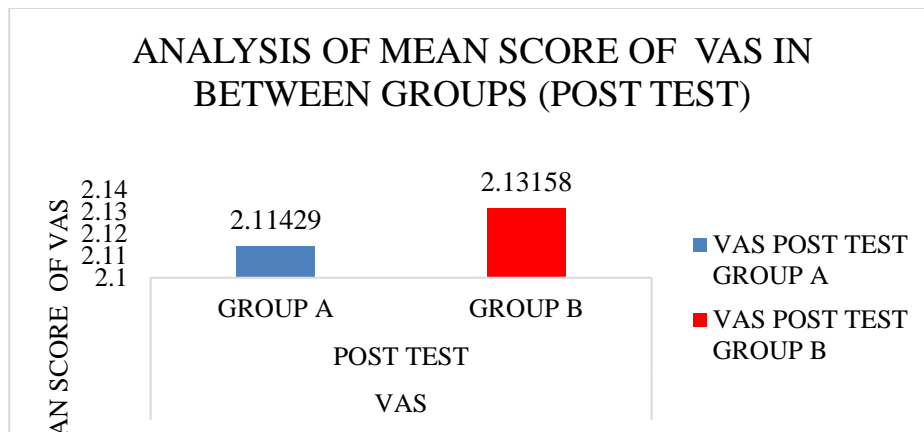
GRAPH-3

RESULTS: The above table and graph shows the baseline measurement of VAS mean score in between the groups. VAS mean score in Group A is 6.342 and Group B is 6.578 which were found to be statistically insignificant

COMPARISON OF MEAN SCORE OF VAS IN BETWEEN THE GROUPS AT (POST-TEST)

NDI		MEAN	SD	P VALUE	INFERENCE
POST	GROUP-A	2.11429	0.75815	0.91873	Insignificant
	GROUP-B	2.13158	0.96341		

TABLE -4



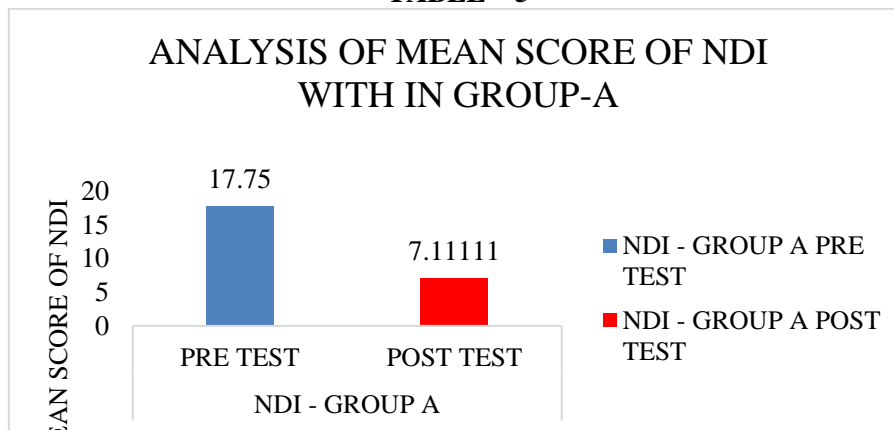
GRAPH-4

RESULTS: The above table and graph shows the post test measurement of VAS mean score in between the groups. VAS mean score in Group A is 2.11 and Group B is 2.13 which were found to be statistically insignificant.

ANALYSIS OF MEAN SCORE OF NDI WITHIN GROUP A

NDI		MEAN	SD	P VALUE	INFERENCE
NDI	PRE	17.75	1.96214	0.001	Highly Significant
	POST	7.11111	2.21395		

TABLE – 5



GRAPH-5

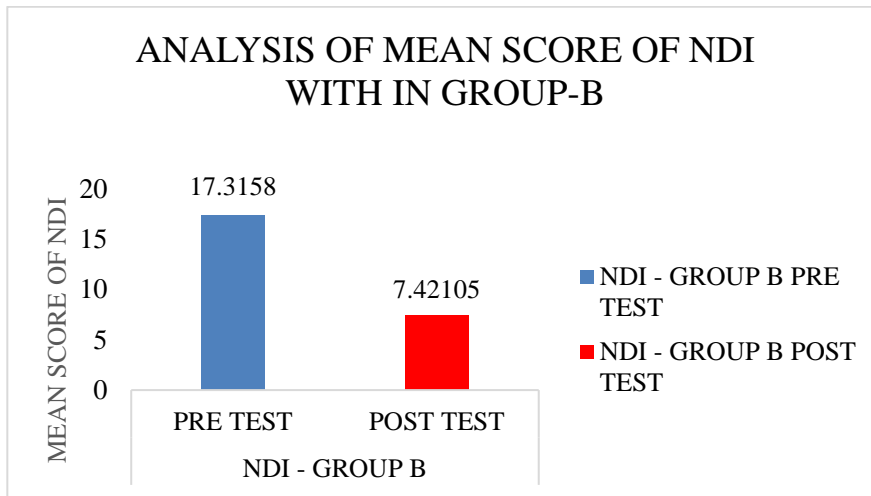
RESULTS: The above table and graph shows that the mean score of Neck Disability Index (NDI) changes from pre-test and post-test values within the Group A were found to be statistically highly significant (P<0.05).

ANALYSIS OF MEAN SCORE OF NDI WITHIN GROUP B

NDI		MEAN	SD	P VALUE	INFERENCE
NDI	PRE	17.3158	1.93272	0.001	Highly Significant

	POST	7.42105	2.18881	
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TABLE – 6



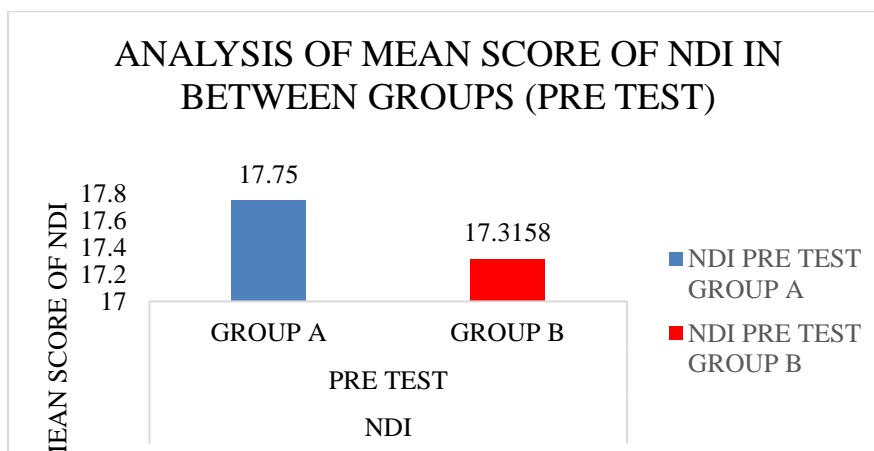
GRAPH-6

RESULTS: The above table and graph shows that the mean score of Neck Disability Index (NDI) changes from pre-test and post-test values within the Group B were found to be statistically highly significant ($P < 0.05$).

COMPARISON OF MEAN SCORE OF NDI IN BETWEEN THE GROUPS AT BASELINE (PRE-TEST)

NDI		MEAN	SD	P VALUE	INFERENCE
PRE	GROUP-A	17.75	1.96214	0.34106	Insignificant
	GROUP-B	17.3158	1.93272		

TABLE –7



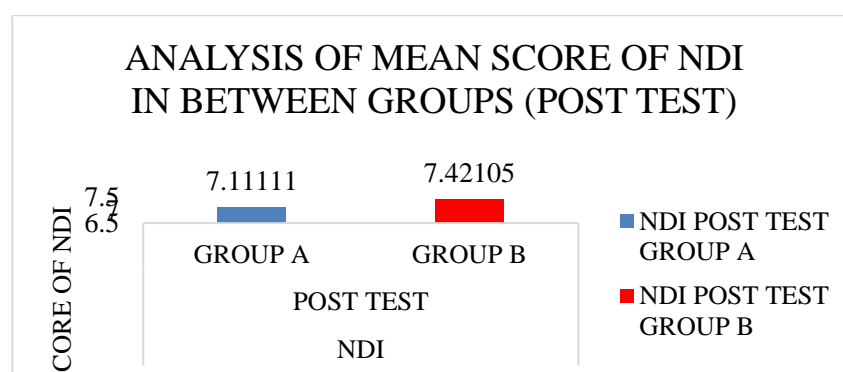
GRAPH-7

RESULTS: The above table and graph shows the base line measurement of Neck Disability Index (NDI) mean score in between the groups. Neck Disability Index (NDI) mean score in Group A is 17.75 and in Group B is 17.31 which were found to be statistically insignificant.

COMPARISON OF MEAN SCORE OF NDI IN BETWEEN THE GROUPS AT (POST-TEST)

NDI		MEAN	SD	P VALUE	INFERENCE
POST	GROUP-A	7.11111	2.21395	0.54692	Insignificant
	GROUP-B	7.42105	2.18881		

TABLE -8



GRAPH-8

RESULTS:

The above table and graph shows the posttest measures of Neck Disability Index (NDI) mean score in between the groups. Neck Disability Index (NDI) mean score in Group A is 7.11 and in Group B is 7.421 which were found to be statistically insignificant.

DISCUSSION

The aim of our present study was to assess the effectiveness of Dry needling (Group-A) and myofascial release (Group-B) on pain and function in subjects with upper trapezitis. In this study, subjects were assessed for pain and function. The following outcome measures Visual Analogue Scale (VAS), and Neck Disability Index (NDI) were used to measure the intensity of pain and function.

The results showed significant improvement in both outcome measures, VAS and Neck Disability Index, in both the techniques. The two techniques were similarly effective in decreasing pain and improving function in subjects with upper trapezitis.

Both Dry Needling group and Myofascial release groups showed statistically significant differences at baseline and after 4 weeks of intervention. But in comparison of Group A and Group B at, PRETEST measurements, the Dry Needling group (VAS mean- 6.342, Neck Disability Index- 17.75) and the Myofascial release group (VAS mean- 6.578, Neck Disability Index- 17.31) showed statistically insignificant differences.

Similarly, in comparison of Group A and Group B at, POST TEST measurements, the Dry Needling group (VAS mean- 2.11, Neck Disability Index- 7.11) and the Myofascial release group (VAS mean-2.13, Neck Disability Index- 7.42) showed statistically insignificant differences.

The present study shows similar results as the previous study of Lynn H. Gerber (2015), “Dry Needling Alters Trigger Points in the Upper Trapezius Muscle and Reduces Pain in Subjects with Chronic Myofascial Pain”. The study was done for 3 weeks. To see the immediate effect of Dry needling with 56 subjects. They first report to demonstrate that there is a significant, contemporaneous change in the level of both pain and the status of the MTrP after dry needling. Dry needling is likely to provide pain reduction and resolution of the a-MTrP. They reported that dry needling has a significant

effect in reducing pain as measured by VAS, BPI, and PPT; and in decreasing disability as measured by the Oswestry Disability Index in individuals with MPS and a-MTrPs.

Recently, Cesar Fernandez-de-Las-Penas (2022), postulated that current evidence, mostly experimental studies, clearly supports a role of trigger points on peripheral and central sensitization since they are able to contribute to sensitization of peripheral nociceptors, spinal dorsal horn neurons, and the brainstem. Several interventions are proposed for treating trigger points, dry needling being one of the most commonly used by clinicians. There is no consensus on the clinical application of trigger point dry needling: some authors propose that local twitch responses should be elicited during the needling intervention to be effective, whereas others do not. The application of trigger point dry needling is able to reduce the excitability of the central nervous system by reducing peripheral nociception associated to the trigger point, by reducing dorsal horn neuron activity, and by modulating pain-related brainstem areas.

Likewise, our study finding was consistent with previous research done by Sai Vispute, Neeraj Kumar³² in which they compare the immediate effects of Myofascial Release Technique and Positional Release Technique on pain intensity, cervical range of motion, and neck disability index in trapezititis among college students they stated that Myofascial release technique is a soft tissue mobilization technique which acts as a catalyst in the reduction of trapezius spasm and ultimately pain is reduced. The faster moving pressure stimuli hinder the transmission of painful stimuli to the brain, thus "closing the gate" to the brain cannot perceive the pain anymore. The release of serotonin also blocks the transmission of noxious stimuli and not allowed to reach brain. Myofascial release's ability to alleviate pain may relieve muscle spasm, which can be attributed to the application of direct pressure as well. It acts by relaxing contracted or shortened muscles, it also increases blood circulation, improves lymphatic drainage, stimulating the stretch reflex of muscles and overlying fascia and it gives the desired effect.

In Myofascial Release Technique, the gentle forces applied to the fascial restrictions will elicit vasomotor response and increase blood flow to the affected area, thereby enhancing lymphatic drainage of toxic metabolic wastes. It also realigns the fascial planes, and most importantly resets the soft tissue proprioceptive sensory mechanism. By this, it reprograms the central nervous system, enabling a normal functional range of motion without eliciting the old pain pattern. Paul j et al., who explained the Myofascial Release Technique improves the vertical alignment and lengthens the body providing more space for proper functioning of osseous structures, nerves, muscles, blood vessels and organs which improves the function. Barnes claimed that, there is change in the viscosity of the ground substance of the muscle and fascia which can restore proper alignment of the muscle fiber and increase joint mobility. The resultant muscle relaxation may encourage a copious return of blood and oxygen, which dramatically elevates pain threshold and encourage healthy, complaint tissue. This promotes healing, reduces pain and pressure in fibrous band of connective tissue or fascia by breaking up the adhesions⁴. Our study supported by Ekta.S. Chaudhary et.al, that Myofascial Releasing Technique along with exercises were more effective in improving Pressure Pain threshold and opposite side Cervical side flexion Range of Motion in Patients with Upper Trapezitis².

In present study both Dry needling and Myofascial Release Technique were found to be effective because formation of the MTrP and the taut band (TB) is controlled by the central nervous system through a "MTrP circuit" and, thus, stimulation with a needle can transmit a strong signal to the central nervous system to induce the powerful reflex of the Local twitch response that will help to reorganize the control that the central nervous system exercises over the MTrP and the tight band, breaking the vicious circle of the "MTrP circuit". In the same way in MFR technique, the local pressure over taut band would equalize the length of sarcomere involved, thereby decreasing the feedback cycle that composes the integrated hypothesis of myofascial pain perpetuation. It is possible that both techniques act on central mechanism²⁹. At present, the mechanism of DN and MFR is, the gate control theory could explain how inhibitory controls modulate the sensory relay system at the level of the spinal cord. Peripheral sensitisation is the process by which nociceptive nerve endings exhibit an enhanced response to substances released when pain persists for a few days. Central sensitisation is defined as an augmentation of the responsiveness of central neurons to input from nociceptive endings. Central sensitisation can change, distort or amplify nociceptive information in a manner that no longer directly reflects the specific quality and quantity of peripheral noxious stimuli but rather the particular functional states of circuits in the central nervous system (CNS). C fibres carry nociceptive information, but mechanical allodynia is transferred to the CNS by low threshold A β myelinated fibres. Sustained nociceptive stimulation of MTPs could induce a widespread central sensitisation response since MTPs are peripheral sources of persistent nociceptive input, which can excite muscle nociceptors, and thereby induce neuroplastic changes in the spinal dorsal horn and brainstem³³. Therefore, both DN and MFR may reverse neuropathic changes by removing a constant and intense nociceptive source. This study shows that Upper Trapezius muscle spasm can cause Neck Pain, with restriction and increase disability according to Neck Disability Index.

After 4 weeks of intervention program, there was a significant difference in subjects of Group A (Dry Needling) for reducing pain VAS ($P = 0.001$) and disability Neck Disability Index ($P = 0.001$).

By the end of the 4 weeks of intervention program, the subjects in Group B (Myofascial release technique) had significantly improved VAS ($p = 0.001$) and disability Neck Disability Index ($p = 0.001$). The mean pre and post test

scores showed that both the Dry Needling and Myofascial release groups were individually beneficial in reducing pain and improving function.

In terms of comparing the two groups, Dry Needling and Myofascial release showed statistically insignificant in post-test results for reduction in pain and improvement in function. When post-treatment values of the Dry Needling and Myofascial release technique groups were compared, there was no statistically insignificant difference in the outcome measures, indicating that both treatments were roughly equally effective in reducing pain and disability.

According to the findings of the current study, four weeks of Dry Needling and Myofascial release technique interventions significantly improved function and pain reduction. However, comparisons between the group's data indicate that both therapies are equally successful. But Dry Needling displays marginally superior outcomes.

LIMITATIONS

- Less sample size
- Only Certain age group (25-50)
- No follow up
- No control group

RECOMMENDATIONS FOR FURTHER RESEARCH

- Follow up after treatment
- Different groups for active and latent trigger points
- Analysis of outcomes every week
- Sample size can be increased with inclusion of a greater number of subjects to generalize the effects of these techniques in larger population

CONCLUSION

The study concludes that, after four weeks of intervention both groups that is the Dry needling and Myofascial release technique shows similar improvements in reducing pain and improving function in subjects with upper trapezitis.

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ANNEXURE I

CHAIRMAN
Mr. Naveen
Social Activist



INSTITUTIONAL ETHICS COMMITTEE
GSL MEDICAL COLLEGE & GENERAL HOSPITAL,
NH-16, RAJAHMUNDRY [ANDHRAPRADESH] – 533296

GSLMC/RC:941-EC/941-09/2022

Date: 19.09.2022

Communication of Decision of the Institutional Ethics Committee [IEC] - Institutional Review Board [IRB]

To: Ms. SHAIK RESHMA, 1st year MPT (Orthopaedics), SWATANTRA INSTITUTE OF PHYSIOTHERAPY & REHABILITATION,
Rajahmundry

IEC/IRB Ref No: 941-EC/941-09/22

Protocol Title: "COMPARISON OF DRY NEEDLING VERSUS MYOFASCIAL RELEASE ON PAIN AND FUNCTION IN SUBJECTS WITH UPPER TRAPEZITIS"																													
Principal Investigator: : Ms. SHAIK RESHMA																													
Name & Address of Institution: SWATANTRA INSTITUTE OF PHYSIOTHERAPY & REHABILITATION, Rajahmundry																													
New review			<input checked="" type="checkbox"/>			Revised Review			<input type="checkbox"/>			Expedited review			<input type="checkbox"/>														
Date of review [D/M/Y]																													
1	9	0	9	2	0	2	2																						
Date of previous review (if revised application)																													
Documents reviewed:																													
Current CV of the investigator			<input checked="" type="checkbox"/>			Trial protocol			<input checked="" type="checkbox"/>			Investigator's Brochure			<input checked="" type="checkbox"/>														
Proposed methods			<input checked="" type="checkbox"/>			Informed consent form			<input checked="" type="checkbox"/>			Agreement with the Sponsor			<input type="checkbox"/>														
Compensation protocol			<input checked="" type="checkbox"/>			Investigators undertaking			<input checked="" type="checkbox"/>			Case Report Form			<input checked="" type="checkbox"/>														
Any other/ additional documents (Specify)																													
Decision of the IEC / IRB:																													
Recommended			<input checked="" type="checkbox"/>			Recommended with suggestions			<input type="checkbox"/>			Revision			<input type="checkbox"/>			Deferred			<input type="checkbox"/>			Rejected			<input type="checkbox"/>		
Suggestion/Reasons/Remarks: APPROVED <input checked="" type="checkbox"/>																													
Recommended for a period of :																													
One Year			<input type="checkbox"/>			Three Years			<input checked="" type="checkbox"/>			Five Years			<input type="checkbox"/>														

Please note:

- Inform IEC/ IRB immediately in case of any Advance events and Serious adverse events
- Inform IEC/IRB in case of any change of study procedure, site and investigator.
- This permission is only for period mentioned above. Annual report to be submitted to IEC/IRB.
- Members of IEC/IRB have right to monitor the trial with prior intimation.


Signature of **MEMBER SECRETARY**
IEC/IRB

MEMBER SECRETARY
INSTITUTIONAL ETHICAL COMMITTEE
GSL Medical College & General Hospital
NH-5, Rajahmundry 533 296

GSL Medical College
NH-5, Lakshmipuram,
Rajahmundry - 533 296