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ORIGINAL ARTICLE

Analysis of Benefits of Manual Therapy Techniques and Laser Therapy for Trapezitis in College Students

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ABSTRACT

Objective: Trapezitis is an inflammatory process of the trapezius muscle. The discomfort aggravates during exercise and exists throughout rest. The most prevalent musculoskeletal condition affecting those who spend a lot of time working with an unnatural posture of the neck and repeated motions is trapezius muscle discomfort and spasm. Pain and secure spasm in an antagonist muscle group may cause a limited and unpleasant passive range of motion. Male-to-female frequency in India is 1:10; worldwide influence impacts 3–5% of people.

Materials and Methods: We used a simple random sampling approach in a single blinded experimental study project. Forty persons in total were recruited for the study based on the requirements for inclusion and exclusion and divided into two groups. Apart from the positional release technique, Group A, comprising twenty people, will also have laser therapy. Twenty members of Group B will get laser therapy in addition to muscle energy technique. For both groups, the intervention ran for four weeks. Visual Analogue Scale (VAS) and Neck Disability Index (NDI) were the outcome tests used.

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Results and Discussion: Following a baseline assessment of outcome measures, post-test research was undertaken four weeks later. using a paired t-test. Independent t-tests were conducted in the intergroup study. From both groups, post-test results were obviously better. When weighed against Group A, Group B obviously outperformed the other group.

Conclusion: In treating trapezitis by reducing pain and improving cervical range of motion, the study indicates that Group B muscle energy technique coupled with laser therapy is more effective than the Group A approach.

KEYWORDS:

• The cervical spine disability rating • Visual Analogue Scale A • Trapezitis Laser therapy • Positional release technique • Muscle energy method

INTRODUCTION

Present even at rest, trapezitis is explained as inflammatory processes of the trapezius muscle creating stress pain, also classified as neck stiffness or tightness encircling the neck or shoulder; it is worsened by movement.[1]One should start with Usually, patients express discomfort that hinders their everyday living activities. Three to five days is pain's duration.[2] Trapezitis generally results from forward head position, repeated motions, poor back support while sitting, working devoid of arm support, and extended forward bending activity.[3] Pain and shielding spasm in the opponent groups of muscle may cause a limited and unpleasant passive range of motion. Those who drive for more extended periods of time or those who work at computers are more likely to have this disorder. Middle-aged women experience this disorder more frequently than men.[4] The scapula is raised, depressed, rotated, and retracted using the trapezius muscle.[5] Large superficial back muscles with trapezoidal form are the trapezius muscles. From the outside protuberance of the anterior bone to the shorter thoracic spine vertebra and subsequently laterally to the spinal column of the scapula. The trapezius consists of the higher, middle, and lower sets of fibers.[6] It causes extreme neck spasm by inflammatory pain. It starts at the rear of the head and runs from C7 to T2 vertebral bodies on the spine. Its attachments are to the spine of the shoulder border, the acromion process, and the outside portion of the collarbone. Along with the accessory nerve, it obtains nerve signals from the C1 via the C4 cervical nerve roots. The prevalent issue in the general population is neck discomfort, which has a frequency between 10% and 15%.[7]

Studies with an average point prevalence of 13% (range 5.9%-38.7%) and an average lifetime incidence of 50% (range 14.2%-71.0%) show very diverse rates of neck discomfort.[8] Bad ergonomic practices, such as extended limited work posture with constant head and neck along with spine flexion, might point to a risk factor.[9] The lifetime frequency of mechanical neck discomfort in the general global population is between 30 and 50%.[10] Upon identifying the trapezitis, a variety of treatment options become available, such as non-steroidal anti-inflammatory pharmacological treatments and pain-modulating ones. Treatments include stretching, myofascial release techniques, posture, and MET approaches in electrotherapy.[11,12] Aiming for maladaptive changes in trapezitis patients, present studies concentrate on reducing pain, improving the range, and decreasing functional impairment a treatment choice offers.[13] The one-hand method applied to a positional release represents a technique that restored a certain muscle to its original resting tone. While muscle in the skeletal system is kept in a shortened state for an extended length of time. It brings adaptive shortening and finally results in spasm.

This technique inserts extremely concentrated muscle and lengthens fibers approaching the place of initiation. This position lessens the quantity of offensive impulses that reach the brain, therefore preventing the muscle spasms' activation. By use of this path, the patient's muscle releases and adopts a normal resting tone.

The technique slowly and passively brings the person affected to a ready position of neutrality with no firing of the skeletal muscle spindle, thereby producing the expected result.[14] The positional release technique (PRT) is a soft tissue technique also known as stress counter strain (SCS), which includes recovering muscle tone and enhancing circulation in a light manual treatment for muscle soreness and spasm. This method first identifies the active TPs and then applies pressure till a nociceptive reaction arises. The region is then positioned so that the stress in the afflicted muscle is lowered, therefore lowering the TP's discomfort. The stressed tissues are perceived as most relaxed, and a local drop of tone occurs when the point of ease/pain decrease is reached.[15]

Muscle energy methods (MET) include the insertion of an isometric stretch to the target muscle. Under autogenic inhibition, the Golgi tendon organs produce post-isometric relaxation.[16] MET may help to lower pain, extend tight muscle groups and fascia, lower muscular tonus, increase the local circulatory system, strengthen weak muscles, and mobilize joint limitations.[17] This method aims to cure hypomobile joints (stiffness) and provide the joints with appropriate biomechanical and physiological function. In a muscle, MET lets one attain a tonus release sooner than stretching. The stressed tissues become most relaxed after they attain either comfort or painlessness, which reduces the local tone. Besides the mobility of restricted joints and relief of highly concentrated and spastic muscles, MET is used in neuromuscular reconfiguration. Patients whose problems are exacerbated by certain postures or body positions will find this approach appropriate.[18] The area is then set up so that the trapezius suffers less damage by lowering the amount of pressure in the affected muscle. Originally labelled as muscle energy methods, precisely targeted and regulated tender tissue osteopathic (first) manipulation procedures combine. Laser therapy reduces pain and inflammation as well as stimulates tissue healing. Often known as cold-frequency laser therapy, low-intensity laser treatment reduces edema and inflammation, generates analgesia, and advances recovery. Laser irradiation removes waste products, stimulates collagen production, alters DNA synthesis, heals injured neurological tissues, and enhances blood and oxygen supply in trigger point sites. Ten items comprise NDI: pain intensity, personal cleanliness, lifting, sleeping, driving, leisure, headaches, focus, learning, and employment. The overall score is 0 (no activity restrictions) to 5 (severe activity limits) with six different answers in each of the 10 questions.[19]

NULL HYPOTHESIS

There is no significant difference between the effect of Positional release technique versus Muscle energy technique along with Laser therapy for Trapezitis in College Students.

ALTERNATE HYPOTHESIS

There is significant difference between the effect of Positional release technique versus Muscle energy technique along with Laser therapy for Trapezitis in College students.

MATERIALS AND METHODS

Choosing of topics ACS Medical College and Hospital's Out-Patient Unit for Physiotherapy has been where this work has been done. Using a basic random approach, the research conception was experimental and randomising of the people. With regard to inclusion and exclusion criteria, the research had forty people overall from the age range of 18 to 25 years.

Parameters for qualification	Parameters for disqualification
• Subjects within the ages of 18 and 25. • Trapezitis diagnosis verified by a physician. • Those with informed permission and eager to take part in the research.	• Alzheimer's lesion featuring cervical spine, Fibromyalgia Disorder with trapezitis, Systemic illness with trapezitis • Cervical disc herniation with trapezitis, New the upper arm procedure, An infection or breakouts of the skin • Inflammation of shoulders with trapezitis, - TB shoulder alongside trapezitis • Spondylosis of the cervical spine with trapezitis

Procedure: Following a comprehensive protocol explanation to every participant, they received a permission form authorized by the ethics committee. Subjects were then split into two groups of twenty each. In addition to the positional release method, Group A, with twenty individuals, will receive laser treatment. Group B, consisting of twenty, will be treated using the muscle energy approach in addition to laser treatment. There were four weeks for

the intervention. Using outcome criteria, all forty participants in both groups underwent pre-and post-intervention assessments.

Intervention: Laser treatment combined with a positional release technique Regarding Group A: method of positional release: The subject rests lying down with the therapist positioned on the affected side; sore spots are found along the trapezius's top fibers. To build pressure, the muscle is squeezed between one's index and middle fingers. Laterally flexed towards the side of the sensitive point, the subject's head is then grasped by the therapist, and the shoulder to about 90°. One adds a little flexion or extension to get perfect tuning. Following an involuntary comeback of the body component to an anatomically neutral posture continuous for five minutes, the perfect position of comfort attained is sustained for ninety seconds. The patient is seated with the healthcare professional standing on the side of the affected side; laser treatment will be administered to the patient for four minutes. Safety measures are performed to lower the possibility of laser light eye exposure. With an intensity of 10 Hz, a dosage of 7 j/cm², and an area covered of 1 cm², laser treatment will be given in a sore region for four days/week for four consecutive weeks. Muscle energy approach combined with laser treatment: Group B: Muscle energy method: The participant lies supine with their head flexed and turned to the opposite side, then outwardly flexes away from the stretch. With one hand stabilizing an individual's head, the therapist lays another hand on their shoulder. The participant is supposed to raise their shoulder closer to the ear while the therapist provides an equal amount of resistance and holds it for ten seconds. Ask the sufferer to relax then. The healthcare professional then advances to the next resistance barrier. Five times will this process be done. The patient is seated with the healthcare professional standing on the side of the afflicted side; laser treatment will be administered to the patient for four minutes. Safety measures are performed to lower the possibility of laser light eye exposure. With an intensity of 10 Hz, a dosage of 7 j/cm2, and an area covered by 1 cm2, laser treatment is administered to a sore region four days per week for a period of four consecutive weeks. Visual Analogue Scale (VAS) and Neck Disability Index (NDI) are the final results of measures used in the research. The Institutional Ethical Board granted the ethical approval in March 2023 (B-24/PHYSIO/IRB/2022-2023). Data pertaining to the research individuals were exclusively used for that intended use. Study subjects completed informed consent papers before treatment.

RESULTS AND DISCUSSION

Inferential as well as descriptive statistics were used in the tabulation and analysis of the gathered data. With a confidence interval of 95% defined for every analysis and a significance threshold of p value below 0.05, all of the variables were evaluated using the universal statistical software. The Shapiro-Wilk test was a tool that helped one to establish the normality of the data. Shapiro Wilk test shows in this study that the findings had a distribution that was normal on the variables that were dependent Visual Analogue Scale (significance 0.381) as well as the upper cervical area Disability Ordering (significance 0.414) at $P > 0.05$. Parametric testing were applied thus. The tatistical variance among the groups was found by means of an unpaired t-test (Student t-test); paired t-test was employed to ascertain the statistical difference within the groups.

Table 1: Visual Analogues Scale Score Comparison between Groups prior to and After Test

Test	A Group		B Group		T - Test	Df	Sig
	Average mean	S.D	Average mean	S.D			
Before Test	5.65	1.08	5.60	.882	.159	38	.874*
After Test	2.95	.887	1.75	.716	4.70	38	.001**

Although the B group–Muscle Energy Method with Laser Therapy indicates 1.75 ±.716, which has the lower mean value, Table 1 explains the comparison of Pre test and Post test within Group A and the B group in Visual Analogue Scale & Neck Disability Index (NDI) Score indicates significant difference in the mean values at $P \leq 0.05$. The null assumption is therefore disproved

Table 2: Comparison of neck disability index score between groups in before and after test

Test	A Group		B Group		T - Test	Df	Sig
	Average mean	S.D	Average mean	S.D			
Before Test	56.10	4.82	56.35	3.31	-.191	38	.849*
After Test	42.25	3.89	27.95	3.79	11.81	38	.003**

Table 2 explains the comparison of the Mean Values of Group A & Group B on Neck Disability Index (NDI) Score, When comparing the mean after test results for both Group A and the second group on the cervical spine Disability Index (NDI) Score indicates a significant decrease in the two groups yet (referred to as Group B, on the other–Muscle Energy Method with Laser Therapy) indicates 27.95 ± 3.79 which has the lesser average value and is more efficient than (Group A, which used Positional Release A method with Laser Therapy) at P ≤ 0.05, 42.25 ± 3.89.The null assumption is thereby disproved.

Table 3: Comparison of visual analogue scale score within groups before pre and after test

Groups	Before Test		Afer Test		T - Test	Sig
	Average mean	S.D	Average mean	S.D		
A Group	5.65	1.08	2.95	.887	21.13	.000**
B Group	5.60	.882	1.75	.716	29.32	.000**

Table 3 explains the Comparison of visual analogue scale score within Group-A and Group-B in Pre and Post Test, the mean values at P < 0.05 demonstrate significant variation between Before test and after test within the first group and the second group upon visual analogue scale as well as the cervical region disability index (NDI).

Table 4: Comparison of neck disability index score within Group-A and Group-B in pre and post test

Groups	Before Test		After Test		T - Test	Sig
	Average mean	S.D	Average mean	S.D		
A Group	56.10	4.82	42.25	3.89	21.85	.000**
B Group	56.35	3.31	27.95	3.79	24.12	.000**

Table 4 reveals the comparison of Neck Disability Index Score Within Group-A and Group-B In Pre and Post Test.There is a statistically significant difference between the pre test and post test values within Group A and Group B at P ≤ 0.05

DISCUSSION

Trapezius is functionally significant for daily tasks. As the trapezius muscle works in various directions, the amount of stress or looseness dictates the neck flexibility. Faulty ergonomics, which are maintained for extended periods of time, leading to muscular imbalance, cause trapezitis.[20] Physiological processes in METS include variations in visco-elasticity, modifications to muscle extensibility, and stretch tolerance variation. First changing the skeletal muscle spindle and then hindering muscular contractions by activating the Golgi tendon organ helps METS mostly reduce the muscle spasms or tightness of the muscles. Post-isometric relaxation is this phenomenon.[21] Eliminating limiting restrictions of mobility in the body is the advantage of the PRT (position release treatment) method of MET (muscle energy technique). Reducing preventive muscle tightness, fascial trigger places, joint and low mobility, discomfort, and swelling and strengthening circulation and strength help to achieve this.[22] Thomas *et al.* (2019), in the study named The efficacy of muscle energy techniques in symptomatic and asymptomatic subjects," prove the effect of muscle energy techniques as useful as pain relievers and to hasten the repair of damaged tissues is laser treatment. Faster wound healing, less muscular tension, greater flexibility of the neck region, and pain and inflammation relief all depend on laser treatment's circulation of blood to the afflicted region. Therapeutic worth of laser's ability to cause subsequent tissue regeneration, soft tissue repair, and stimulation of protein synthesis. The group that had laser treatment had significantly lower NDI results. Laser treatment's beneficial effects also help to relieve pain by means of neural blockage of the sympathetic nervous

system along with triggering neuromuscular contractions, therefore reducing muscle spasms. Within hours to days, local edema decreases and inflammation is reduced.[23]

Published by V.N. Ravish et al. in 2014 to assess the efficacy of the myofascial release method vs. the positional release technique with laser in patients with unilateral trapezitis At the end he found that the two groups had greatly enhanced range of motion, functional mobility, and pain reduction. When the two groups' subjects are compared, nevertheless, MRT with LASER shows greater improvements than PRT with LASER.[24] Effectiveness on Chronic Trapeziitis of Myofascial Technique and Muscle Energy Technique Aneri Jhaveri et al. released it in 2018. She has determined that for participants with chronic trapezitis, Muscle Energy Technique proved to have much more additional impact than the Myofascial Release Method in alleviating pain, cervical impairment, and cervical motions.[25] Effect of Combining Therapies on Muscle Tenderness and Neck Pain in Male Patients with Activated Myofascial Trigger Points of Upper Trapezius Published in 2020 by Ahmad H. Alghadir *et al.,* it suggests that MET with ICT reduces neck discomfort and muscular soreness in males with the higher trapezius active MTrP more effectively than MET alone.[26] Research conducted on patients with persistent upper trapezitis compares the benefits of the muscle energy method and the positional release method regarding pain relief and neck range of motion (ROM). Published in 2019 by Saloni Thaker *et al.,* it finds that Muscle Energy Technique (MET) is a good choice for treating persistent upper trapezitis.[27] Management of shoulder rotator cuff muscle injury: comparison of laser and ultrasound therapy Published by Shahiduz Zafaret *et al.,* Concluded in 2017 that both ultrasonic therapy and laser treatment are helpful modalities for improving the degrees of shoulder movements and decreasing the SPADI disability ratings among the patients with grade 1 and 2 rotator cuff injuries. In these criteria, LASER improves them more than ultrasonic treatment.[28] Effect on pain and quality of life in individuals with mechanical discomfort in the neck with static stretching and muscle energy approach. Published in 2016, Apoorva Phadke et al. found that the muscle energy method improved pain and functional impairment in individuals with mechanical neck pain more than the stretching technique.[29]

The statistical research revealed that both groups A and B had improved Visual Analogue Scale (VAS) and Cervical Region Disability Index (NDI). When both the groups are evaluated at the end of 4 weeks, participants in Group B who had laser treatment with the muscle energy method exhibited greater improvement in VAS & NDI than those in Group A who underwent laser therapy with the positional release technique. The pre-intervention mean of the Visual Analogue Scale (VAS) in Group A was 5.65. After treatment of the participants with Positional Release Technique (PRT) combined with laser therapy, the mean value of the Visual Analogue Scale (VAS) improved to 2.95 at the end of four weeks.

The pre-intervention mean of the Neck Disability Index (NDI) towards the afflicted side was 56.10 and improved to 42.25 at the end of four weeks. Which, inside the group, had statistical relevance? The pre-intervention mean of the Visual Analogue Scale (VAS) in Group B was 5.60; after treating the participants with the Muscle Energy Method (MET) together with laser treatment, the mean value of the Visual Analogue Scale (VAS) changed to 1.75 at the end of four weeks. The Neck Disability Index (NDI) towards the afflicted side had a pre-intervention mean of 56.35 and changed to 27.95 at the end of four weeks. This displayed statistical relevance inside the group.

Although the Muscle Energy method (Group B) indicates 1.75, a lower mean value than the Positional Release method (2.95), the post-test mean values of Group A and Group B on VAS in terms of pain intensity demonstrate a substantial reduction. Although the Muscle Energy Technique (Group B) shows a mean value of 27.95 degrees, which is more successful than the Positional Release Technique (Group A), the post-test mean values for both Group A and Group B on the afflicted side of the Neck Disability Scale (NDI) indicate a notable rise. displays 42.25.

CONCLUSION

Statistically speaking, both the groups show fairly distinct post-test results. Group B shown a significant improvement in cervical range of motion and pain relief in individuals with trapezitis. Hence The present study illustrates that Muscle energy approach along with laser

therapy is more effective treating trapezitis lowering discomfort and enhancing cervical range of motion than the laser treatment in conjunction with Positional release method.

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REFERENCES

1. K.Kotteeswaran, Syed Gaffar, Krishna. R, Keerthana Priya. R. Effectiveness of Laser Therapy and Ultrasound Therapy along with Muscle Energy Technique in subjects with Trapezitis. AJSPT, 2021; 11(2):116-https://doi.org/10.52711/2231-5713.2021.00019
2. Metgud Santosh & Kapila Ramya.Comparative effect of therapeutic ultrasound using extract of ilex paraguarienis and diclofenac sodium gel in acute Trapezitis: A randomizedclinical.IJTRR, 2015; 4 (4):137 https://www.researchgate.net/publication/282459565.
3. Dr Ashwini,S. Bulbuli, Archana D. Methe. Immediate Effect of Spray and Stretch Technique on Trapezits: An Experimental Study.JMSCR,2017;06(03)2304-2307;DoI: https://dx.doi.org/10.18535/jmscr/v5i4.139.
4. Varun Naik, Junisha Mascarenhas, Namrata Mutkekar, Shibani Forgueri.5 days Comparative study to evaluate the effectiveness of Therapeutic ultrasound and elastic resistance band exercises versus Therapeutic ultrasound and conventional exercises in acute Trapezitis: A randomized control trial, IJTRR, 2015; 4(2):1822-https://www.academia.edu/80180746/_A_Randomized_Clinical_Trial
5. Ravish V.N, Shridhar, Sneha helen.To compare the effectiveness of Myofascial release technique versus positional release technique with laser in patients with unilateral Trapezitis. JEMDS, 2014; Vol.3, Issue-09, March03; Page:21612166-http://dx.doi.org/10.14260/jemds/2014/2121.
6. Ourieff J, Scheckel B, Agarwal A. Anatomy, Back, Trapezius. In: STATPEARLS Internet,2023; PMID: 30085536. https://www.ncbi.nlm.nih.gov/books/NBK518994/
7. Dundar.U, Evcik.D, Samli.F, Pusak.H, Kavuncu.V.The effect of gallium arsenide aluminum laser therapy in the management of cervical myofascial pain syndrome: A double blind, placebo-controlled study. Clinical Rheumatology, 2007; Volume 26, pages 930–934-https://doi.org/10.1007/s10067-006-0438-4.
8. Sai Vispute, Neeraj Kumar.A Comparative Study of Immediate Effects of Myofascial Release Technique and Positional Release Technique on Trapezitis among the College Students.IJPR,2022;10(3):4243-4249-http://dx.doi.org/10.16965/ijpr.2022.122.
9. Jorgensenn.R, Ris. I, Falla. D. Reliability, construct and discriminative validity of clinical testing in subjects with and without chronic neck pain. BMC Musculoskeletal Disorders 15,2014;408-https://doi.org/10.1186/1471-2474-15-408.
10. Sweety Charles Carvalho, Vinod Babu.K, Sai Kumar.N, Ayyappan.V.R.Effect of positional release technique in subjects with subacute trapezitis. IJPHY, 2014; 1(1)91-99. https://www.researchgate.net/publication/263929226.
11. Joshi.R, Manisha Rathi. Effect of Muscle Energy Technique versus Positional Release Technique on Pain and Functions in Patients with Trapezitis–A Comparative Study. IJSR,2017;Volume 6,Issue 5-https://www.ijsr.net/archive/v6i5/ART20173758.pdf
12. Jhaveri A, Gahlot P.Comparison Of Effectiveness Of Myofascial Release Technique Versus Muscle Energy Technique On Chronic Trapezitis-An Experimental Study. IJIRAS,2018; 5(7)-https://www.ijiras.com/2018/Vol_5-Issue_7/paper_15.pdf
13. Mahajan.R, Kataria.C, Bansal.K. Comparative effectiveness of Muscle energy technique and static stretching for treatment of Subacute mechanical neck pain.IJHRS, 2012; 1(1): 16-21-https://www.researchgate.net/publication/334697455.
14. Fariba Eslamian, Seyyed Kazem Shakouri,Morteza Ghojazadeh, Ozra Eslampanah Nobari, Bina Eftekharsadat. Effects of low-level laser therapy in combination with physiotherapy in the management Of rotator cuff tendinitis. PUBMED, 2011; Lasers in Medical Science, 27(5):951-8-https://www.researchgate.net/publication/51769448.

15. Brosseau.L, Welch.V, Wells.G, Tugwell.P, De Bie.R, Gam.A,Harman.K, Shea.B, Morin.M. Low level laser therapy for Osteoarthritis and rheumatoid arthritis: a metaanalysis.Journal of Rheumatology, 2000; Aug 1; 27(8):1961-9. https://www.semanticscholar.org/venue?name=Journal%20of%20Rheumatology

16. Bhavya mangal das, Prashantha.S, Lokesh. M, Shruthi. B, Raja. R.A Study to assess the Effectiveness of Ultrasound Therapy with Myofasial Release and Laser Therapy with Myofasial Release in Acute Trapezitis. IOSR-JDMS,2020;e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 19, Issue 10, Ser.9 ,PP 01-06-https://www.iosrjournals.org/iosr-jdms/papers/Vol19-issue10/Series-9/A1910090106.pdf

17. Basford JR. Low intensity laser therapy: Still not an established clinical tool.PUBMED, 1995;LasersSurgMed.1995;16:331–342-https://pubmed.ncbi.nlm.nih.gov/7651054/

18. Williams M.A, Reliability and validity studies of methods for measuring active and passive Cervical range of motion: A systematic review.Journal Manipulative and physiological Therapeutics, PUBMED, 2010; 3(2):138-55-https://pubmed.ncbi.nlm.nih.gov/20170780/

19. Birgitta Helmerson Ackelman and Urban Lindgren, Validity and reliability of a modified version of the neck disability index, J Rehabil Med,PUBMED,2002;34:284-287-https://pubmed.ncbi.nlm.nih.gov/12440803/.

20. Ujwal L Yeole, Neha P Diwakar,Pournima P Pawar. Effects of Muscle energy technique and positional release therapy on neck Pain in computer users:A randomized control trial. IJRSR,2017;Vol-8(12),pp.22490-22493-https://www.recentscientific.com/effect-muscle-energy-technique-and-positional-release-therapy-neck-pain-computer-users-randomized-co.

21. Parisa Taheri, Babak Vahdatpour, Somayeh Andalib. Comparative study of shock wave therapy and Laser therapy effect in elimination of symptoms among patients with myofascial pain syndrome in upper trapezius.Adv Biomod Res.PUBMED,2016;5:138-https://pubmed.ncbi.nlm.nih.gov/27656607/

22. Marzouk A. Ellythy. Efficacy Of Muscle Energy Technique Versus Strain Counter Strain On Low Back Dysfunction. Bull. Fac. Ph. Th. Cairo Univ., Vol. 17, No. (2) Jul.2012; http://lib.pt.cu.edu.eg/5-Marzouk%20July%202012.pdf

23. Thomas E, Cavallaro AR, Mani D, Bianco A, Palma A.The efficacy of muscle energy Techniques in symptomatic and Asymptomatic subjects: A systematic PUBMED,2019; 27:35-https://pubmed.ncbi.nlm.nih.gov/31462989/

24. Ravish V.N, Shridhar, Sneha helen.To compare the effectiveness of Myofascial release technique versus positional release technique with laser in patients with unilateral Trapezitis. JEMDS, 2014; Vol.3, Issue-09, March03; Page:21612166-http://dx.doi.org/10.14260/jemds/2014/2121.

25. Jhaveri A, Gahlot P.Comparison of Effectiveness of Myofascial Release Technique Versus Muscle Energy Technique on Chronic Trapezitis-An Experimental Study. IJIRAS.2018; 5(7)-https://www.ijiras.com/2018/Vol_5-Issue_7/paper_15.pdf.

26. Alghadir AH, Iqbal A, Anwer S, Iqbal ZA, Ahmed H. Efficacy of Combination Therapies on Neck Pain and Muscle Tenderness in Male Patients with Upper Trapezius Active Myofascial Trigger Points. Biomed Res Int. 2020 Mar 10;2020:9361405. doi: 10.1155/2020/9361405. PMID: 32258159; PMCID: PMC7085833. https://pmc.ncbi.nlm.nih.gov/articles/PMC7085833.

27. Thaker S, Dave Y, Patel S. A study to compare the effect of muscle energy technique and positional release technique on pain and cervical ROM in patients with chronic upper trapezititis. Int J Sci Res. 2019 Jun;8(6). https://www.worldwidejournals.com/international-journal-of-scientific-research-(IJSR)/article/a-study-to-compare-the-effect-of-muscle-energy-technique-and-positional-release-technique-on-pain-and-cervical-rom-in-patients-with-chronic-upper-trapezitis/MTk2MjY=/?is=1&b1=1197&k=300.

28. Shahiduz Zafar, Suraj Kumar. Comparison of laser and ultrasound therapy for the management of shoulder rotator cuff muscles injury, Int J Physiother Res 2017;5(5):2364-70, https://www.ijmhr.org/ijpr.5.5/IJPR.2017.211.pdf

29. hadke A, Bedekar N, Shyam A, Sancheti P. Effect of muscle energy technique and static stretching on pain and functional disability in patients with mechanical neck pain: A randomized controlled trial. Hong Kong Physiother J. 2016 Apr 14;35:5-11. doi: 10.1016/j.hkpj.2015.12.002. PMID: 30931028, https://pmc.ncbi.nlm.nih.gov/articles/PMC6385145.