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EFFECT OF MUSCLE ENERGY TECHNIQUE (MET) VERSUS BOWEN TECHNIQUE ON PAIN AND DISABILITY IN YOUNG ADULTS WITH ACUTE UNILATERAL TRAPEZITIS.

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Abstract:

Background: Trapezitis is an inflammation of the trapezius muscle caused due to stress, tension, repetitive movements, bad posture, etc. causing severe muscle spasm and pain. According to a study, neck pain mean lifetime prevalence is of 67% to 87%. The Bowen Technique is a hands-on-therapy developed by Thomas Ambrose Bowen. This technique works on the soft connective tissues (fascia) of the body and resets and balances the autonomic nervous system and stimulates several intrafascial mechanoreceptors that affect muscle tonus and increase vagal tone. It can be used to treat several musculoskeletal or related neurological problems. Muscle Energy Technique is a type of osteopathic manipulation method that uses patient initiated voluntary muscle contraction of different intensities, in a precise direction and against a counterforce. It is used to improve musculoskeletal function, joint function, and improving pain.

Objective: 1. Aims to find the effect of Muscle Energy Technique on pain assessed using Visual Analogue Scale in young adults with acute unilateral trapezitis. 2. Aims to find the effect of Muscle Energy Technique on disability assessed using Neck Disability Index in young adults with acute unilateral trapezitis. 3. Aims to find the effect of Bowen Technique on pain assessed using Visual Analogue Scale in young adults with acute unilateral trapezitis. 4. Aims to find the effect of Bowen Technique on disability assessed using Neck Disability Index in young adults with acute unilateral trapezitis. 5. Aims to compare the effect of Muscle Energy Technique Versus Bowen Technique on pain and disability assessed using Visual Analogue Scale and Neck Disability Index respectively in young adults with acute unilateral trapezitis.

Method: Study begun with the presentation of synopsis to an ethical committee in PES MCOP. An approval was granted from the ethical committee. 60 subjects were selected on the basis of inclusion and exclusion criteria. Pre-treatment Neck Disability Index (NDI) and Visual Analogue Scale (VAS) scores were taken. 60 subjects were divided into two groups. On the basis of arrival of the subjects, all even numbers were allotted to Group-A – Muscle Energy Technique and all odd numbers were allotted to Group- B – Bowen Technique. Each group received 6 sessions (on alternate days) of the respective technique over 2 weeks. Post-treatment NDI and VAS scores were taken. Data was entered and statistically analyzed.

Results: Statistical analysis of the pre and post treatment scores of NDI and VAS values of Group A and Group B revealed that there was significant effect of both the techniques but on comparing post treatment VAS & NDI scores of both the groups, subjects treated by Bowen Technique (Group B) showed more improvement than subjects treated with Muscle Energy Technique (Group A).

Conclusion: This study concluded that Muscle Energy Technique (MET) and Bowen Technique both are effective on neck pain and neck disability, but on comparing, Bowen Technique (Group B) has proved to be more effective than MET (Group A) in young adults in treating acute unilateral trapezitis.

Keywords: Muscle Energy Technique (MET), Bowen Technique, Young adults, Acute, Unilateral trapezitis, Pain, Neck Disability, Neck Disability Index (NDI), Visual Analogue Scale (VAS)

I. INTRODUCTION

- Trapezitis is defined as an inflammation of trapezius muscle which involves myofascial pain syndrome.[1]
- The trapezius muscle is an inverted triangle which starts along the midline and extends from the occiput (base of skull) into the lower thoracic region (till the mid back), while laterally it extends upto the acromion (over the shoulder).[1]
- The trapezius muscle is divided into three areas - upper fibres, middle fibres, lower fibres.[1]
- The upper trapezius is designated as a postural muscle and it is highly susceptible to overuse.[1]
- The main muscle to carry the load is the trapezius, any position without a period of rest places the trapezius muscle in a shortened state and may cause involuntary shortening of the localized fibres and lead to dysfunction and restricted movements of neck.[1]
- Trapezitis is mainly caused due to stress and tension, repetitive movements, forward head posture, sitting without back support, working with no arm support, prolonged head bending activities, using thick pillow.[7]
- Bad posture is frequently incriminate as the cause of trapezitis, working on computer, using smartphones or watching television with an awkward posture for prolonged period of time can cause neck muscle spasm and lead to trapezitis.[7]
- The areas of stressed soft tissue receives less oxygen, glucose, and nutrient delivery and subsequently accumulate high levels of metabolic waste products leading to a cascade of events of altered tissue status, pain and development of trigger points.[1,7]
- About two thirds of people experience neck pain in the region of upper trapezius at some point in their lives. [7]
- Neck pain prevalence varies widely in different studies with a mean lifetime prevalence of 67% to 87%. [9]
- Muscle energy techniques (MET) were originally developed by two osteopathic physicians, Fred Mitchell, Sr. and Fred Mitchell, Jr.[9]
- It is used to improve musculoskeletal function by underlying therapeutic action involving a variety of neurological and biomechanical mechanisms, including hypoalgesia, altered proprioception, motor programming and control, changes in tissue fluid and affects the viscoelastic and plastic tissue property, autonomic mediated change in the extracellular fluid dynamics and fibroblast mechanotransduction .[2]
- It reduces pain by central and peripheral modular mechanisms, such as activation of muscle and joint mechanoreceptors that involve centrally mediated pathways like the periaqueductal grey (PAG) in the midbrain, or non-opioid serotonergic and noradrenergic descending inhibitory pathways.[2]
- Bowen technique was developed by Thomas Ambrose Bowen in Geelong, Australia in the 1950s which is a dynamic system of muscle and connective tissue therapy. [1]
- It is a hands-on-therapy which uses precise, light-pressured, rolling moves in which therapist uses fingers or thumb to apply gentle rolling moved over muscles, tendons, and other connective tissues in specific parts of body which stimulates the tissue and nerve pathways creating a focus for the brain. [6]
- A classic Bowen technique usually lasts from 20-30 minutes. [6]
- Bowen moves stimulate several types of intrafascial mechanoreceptors that affect muscle tonus and increase vagal tone.[5]
- The type of move used in Bowen also assists the hydration of fascia, which in turn encourages better vascular and nerve supply.[5]
- Stretch reflex- moves are done on the origin, insertion or belly of muscles where receptors are located, informing the nervous system on the state of tension, length or stretch in musculotendinous tissue.[1]

II. NEED OF STUDY

- Many studies suggest that myofascial pain syndrome (regional musculoskeletal pain in the neck or back region) are a source of musculoskeletal dysfunction, the prevalence varies from 21% of patients seen in a general orthopaedic clinic to30% of general medical clinic patients, the regional pain prevalence is 85% to 90% of patients presenting to pain management centre. [1]
- In the recent times, due to overuse of cellphones, computers and adaptation of bad postures, trapezitis is one of the musculoskeletal disorders associated with these factors.
- There are studies available on the effect of Muscle Energy Technique in treating trapezitis.
- There are studies available on the effect of Bowen technique in treating trapezitis.
- But till date, no studies are done to compare the effect of Muscle Energy Technique and Bowen technique on pain and disability in young adults with acute unilateral trapezitis.
- So this study is an effort to compare the effect of Muscle Energy Technique versus Bowen technique on pain and disability in young adults with acute unilateral trapezitis.

III. AIM

- The aim of the study is to compare the effect of Muscle Energy Technique (MET) Versus Bowen technique on pain and disability in young adults with acute unilateral trapezitis.

IV. OBJECTIVE

1. To study the effect of Muscle Energy Technique on pain assessed using Visual Analogue Scale in young adults with acute unilateral trapezitis.
2. To study the effect of Muscle Energy Technique on disability assessed using Neck Disability Index in young adults with acute unilateral trapezitis.
3. To study the effect of Bowen Technique on pain assessed using Visual Analogue Scale in young adults with acute unilateral trapezitis.
4. To study the effect of Bowen Technique on disability assessed using Neck Disability Index in young adults with acute unilateral trapezitis.
5. To compare the effect of Muscle Energy Technique Versus Bowen Technique on pain and disability assessed using Visual Analogue Scale and Neck Disability Index respectively in young adults with acute unilateral trapezitis.

V. HYPOTHESIS

- **NULL HYPOTHESIS (H0):** There will be no significant difference between effect of Muscle Energy Technique and Bowen technique on pain and disability in young adults with acute unilateral trapezitis.
- **ALTERNATE HYPOTHESIS (H1-A)**: Muscle Energy Technique will be more effective than Bowen technique on pain in young adults with acute unilateral trapezitis.
- **ALTERNATE HYPOTHESIS (H1-B):** Muscle Energy Technique will be more effective than Bowen technique on disability in young adults with acute unilateral trapezitis.
- **ALTERNATE HYPOTHESIS (H2-A):** Bowen Technique will be more effective than Muscle Energy Technique on pain in young adults with acute unilateral trapezitis.
- **ALTERNATE HYPOTHESIS (H2-B):** Bowen Technique will be more effective than Muscle Energy Technique on disability in young adults with acute unilateral trapezitis.

VI. METHODOLOGY

- Sample size: 60
- Sampling method: Convenient
- Study Population: Young adults in the age group - 18 to 30 years diagnosed with acute unilateral trapezitis.
- Study Setting : Physiotherapy OPDs and clinics in pune
- Duration of intervention – 6 sessions (every alternate day) for 2 weeks
- Study Design : Comparative study
- Study Duration: 6 months

VII. MATERIALS

- Consent form
- Pen
- Neck Disability Index
- Visual Analogue Scale
- Chair
- Plinth
- Pillows

VIII. CRITERIA

❖ INCLUSION CRITERIA:

- Young adults involved in computer and cell phone use for more than 5 hours per day.
- Duration of pain less than 1 month.[9]
- Pain on VAS ≥ 5 (greater than or equal to 5).[9]
- Neck Disability Index Questionnaire Score (NDIQ) ≥ 15 (greater than or equal to 15). [9]
- Young adults in the age group of 18 to 30 years of age diagnosed with trapezitis.
- Both males and females.
- Restrictions in neck movements due to trapezius pain.

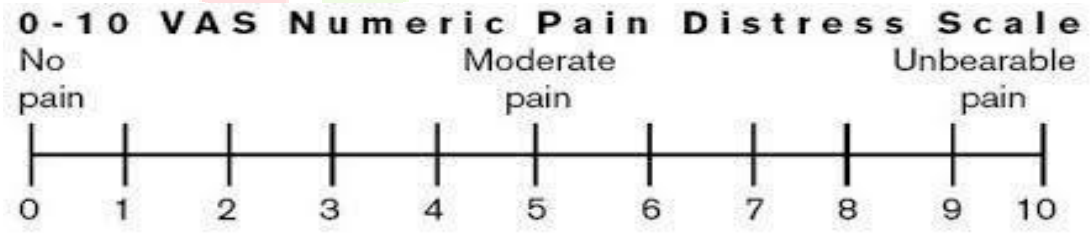
❖ EXCLUSION CRITERIA:

- Traumatic neck injury
- Fracture of cervical vertebrae
- Cervical Radiculopathy
- Diagnosed case of disc prolapse
- Spondylolisthesis of the cervical spine
- Craniovertebral junction anomaly
- Cervical instability
- Any deformity - spasmodic torticollis, Sprengel's deformity.[9]
- Benign/Malignant tumour over the neck region
- Recent surgery in and around cervical and shoulder region during the previous 12 months.[9]

IX. OUTCOME MEASURES

1. Visual Analogue Scale –

- Pain intensity will be evaluated by means of VAS, a line of 10cms ranging from 0cm to 10cms will be drawn, where the subject has to mark a point according to their intensity of pain, where 0 represents no pain and 10 represents unbearable/severe pain.



2. Neck Disability Index-

- The subject's functional status will be assessed by means of the Vernon Neck Disability Index (NDI).
- It is a 10 item questionnaire.
- The score of each item lies between 0(no pain or limitation in activities) and 5 (as much pain as possible or maximal limitation in activities).

NECK DISABILITY INDEX (NDI)

This questionnaire has been designed to give the doctor information as to how your neck pain has affected your ability to manage in everyday life. Please answer every section and mark in each section only ONE box which applies to you. We realize you may consider that two of the statements in any one section relate to you, but please just mark the box which MOST CLOSELY describes your problem.

Section 1: Pain Intensity

1. I have no pain at the moment.
2. The pain is very mild at the moment.
3. The pain is moderate at the moment.
4. The pain is fairly severe at the moment.
5. The pain is very severe at the moment.
6. The pain is the worst imaginable at the moment.

Section 2: Personal care (Washing, Dressing, etc.)

1. I can look after myself normally without causing extra pain.
2. I can look after myself normally but it causes extra pain.
3. It is painful to look after myself and I am slow and careful.
4. I need some help but manage most of my personal care.
5. I need help everyday in most aspects of self care.
6. I do not get dressed, I wash with difficulty and stay in bed.

Section 3: Lifting

1. I can lift heavy weights without extra pain.
2. I can lift heavy weights but it gives extra pain.
3. Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned, for example on a table.
4. Pain prevents me from lifting heavy weights if, but I can manage light to medium weights if they are conveniently positioned.
5. I can lift very light weights.
6. I cannot lift or carry anything at all.

Section 4: Reading

1. I can read as much as I want to with no pain in my neck.
2. I can read as much as I want to with slight pain in my neck.
3. I can read as much as I want with moderate pain.
4. I can’t read as much as I want because of moderate pain in my neck.
5. I can hardly read at all because of severe pain in my neck.
6. I cannot read at all.

Section 5: Headaches

1. I have no headache at all.
2. I have slight headache which comes infrequently.
3. I have slight headache which comes frequently.
4. I have moderate headaches which comes infrequently.
5. I have severe headache which comes frequently
6. I have severe headaches almost all the time.

Section 6: Concentration

1. I can concentrate fully when I want to with no difficulty.

2. I can concentrate fully when I want to with slight difficulty.
3. I have a fair degree of difficulty in concentrating when I want to.
4. I have a lot of difficulty in concentrating when I want to.
5. I have a great deal of difficulty in concentrating when I want to.
6. I cannot concentrate at all.

Section 7: Work

1. I can do as much work as I want to.
2. I can only do my usual work, but no more.
3. I can do most of my usual work, but no more.
4. I cannot do my usual work.
5. I can hardly do any work at all.
6. I can't do any work at all.

Section 8: Driving

1. I drive my car without any neck pain.
2. I can drive my car as long as I want with slight pain in my neck.
3. I can drive my car as long as I want with moderate pain in my neck.
4. I can't drive my car as long as I want because of moderate pain in my neck.
5. I can hardly drive my car at all because of severe pain in my neck.
6. I can't drive my car at all.

Section 9: Sleeping

1. I have no trouble sleeping.
2. My sleep is slightly disturbed (less than 1 hour, sleepless).
3. My sleep is moderately disturbed (1-2 hours sleepless).
4. My sleep is moderately disturbed (2-3 hours sleepless)
5. My sleep is greatly disturbed (3-4 hours sleepless)
6. My sleep is completely disturbed (5-7 hours sleepless).

Section 10: Recreation

1. I am able to engage in all my recreation activities with no neck pain at all.
2. I am able to engage in all my recreation activities, with some pain in my neck.
3. I am able to engage in most, but not all of my usual recreation activities because of pain in my neck.
4. I am able to engage in a few of my usual recreation activities because of pain in my neck.
5. I can hardly do any recreation activities because of pain in my neck.
6. I can't do any recreation activities at all.

- Total score ranges between 0 and 50 points.
- Score - __ (total scored) / 50(total possible score) x 100 =__%points.
- If one section is missed or not applicable then the score is calculated as
  Score - __ (total scored) / 45(total possible score) x 100 =__%points.

- 0-4 points (0-8%) no disability,
- 5-14 points (10 – 28%) mild disability,
- 15-24 points (30-48%) moderate disability,
- 25-34 points (50- 64%) severe disability,
- 35-50 points (70-100%) complete disability

X. PROCEDURE

- Study began with the presentation of synopsis to an ethical committee in P.E.S Modern College of Physiotherapy.
- Study began after obtaining ethical clearance from the committee.
- The subjects were selected on the basis of inclusion and exclusion criteria.
- The subject were explained about the procedure and study before starting the treatment.
- Written consent for the study was taken from the subjects.
- On the basis of their arrival, all the even numbers were allotted to group A - Muscle Energy Technique and all odd numbers were allotted to group B - Bowen Technique.
- Pre-treatment Visual Analogue Scale and Neck Disability Index scores of both the groups was recorded.
- Group-A was given Muscle Energy Technique and Group-B was given Bowen Technique for total of 6 sessions of each technique over 2 weeks.
- Post treatment Visual Analogue Scale and Neck Disability Index scores of both the groups was recorded.
- All the collected data was subjected to appropriate statistical test for data analysis.

XI. PROTOCOL

GROUP A	GROUP B
Muscle Energy Technique (MET): ❖ Frequency - 3 times each session, 3 sessions a week for alternate days, total - 6 sessions over 2 weeks ❖ Duration - 7-10 seconds (of sustained contraction), 30 seconds (of stretch hold).	BOWEN TECHNIQUE: ❖ Frequency – 1 time each session, 3 sessions a week for alternate days, total - 6 sessions over 2 weeks ❖ Duration - 20-30 minutes.

GROUP A –

❖ MET (Post isometric relaxation) was given in the following steps –

- Therapist will assess for the tender areas by palpation method.
- Therapist will take the patient in a comfortable position in which treatment will be given.
- Position of the subjects - lies supine, arm on the side to be treated lying along the side of the trunk, head/neck side bent away from the side being treated just short of the restriction barrier.[9]
- The therapist stabilizes the shoulder with one hand and cups the ipsilateral ear/mastoid area with other hand (Fig: 1). [9]

Fig: 1

- With the flexed neck fully side-bent, and fully rotated towards the opposite side, the posterior fibres of the upper trapezius are involved in the contraction. This facilitates subsequent stretching of this aspect of the muscle. [9]
- With the flexed neck fully side-bent and half rotated, the middle fibres are involved in the contraction. [9]
- With the flexed neck fully side-bent and slightly rotated towards the side being treated, the anterior fibres of the upper trapezius are engaged. [9]
- The various contractions and subsequent stretches can be performed with the therapist's arms crossed, hands stabilizing the mastoid area and shoulder.
- The slight active effort of the patient towards the movement (using 20% of available strength) to take the stabilised shoulder towards the ear (a shrug movement) and the ear towards the shoulder. The opposite effort towards movement is important in order to introduce a contraction of the muscle from both ends simultaneously. [9]
- The degree of the effort should be mild and no pain should be felt.
- The contraction is sustained for 7 to 10 seconds and upon complete relaxation of the effort, the therapist gently eases the head/neck into an increased degree of side bending and rotation, where it is stabilized as the shoulder is stretched caudally.[9]
- As stretching is introduced, the subject can assist in this phase of treatment by initiating, on instruction, "the stretch of the muscle" (as you breathe out please slide your hands towards your feet).[9]
- Once the muscle is in a stretched position, the subject relaxes and the stretch is held for upto 30 seconds.[9]
- 3 repetitions will be given of MET.[7]

GROUP B –

❖ BOWEN TECHNIQUE was given in the following steps –

- Position of the patient - subject will be in full prone lying position on a plinth with small pillow (if needed) for neck support.
- Bowen addresses the body as a whole unit rather than just the presenting symptoms.[6]
- This therapy involves short gentle rolling moves at the level of superficial fascia over muscles, nerves, ligaments, tendons utilizing the hand, finger and thumb.[6]
- In the patient in prone lying position, pull the skin to the side of the structure/muscle on the affected side of muscle then place your thumbs and hook them on the lateral edge of muscle and apply gentle pressure to the edge of the muscle to a point of resistance (Fig: 2). [1]

Fig: 2

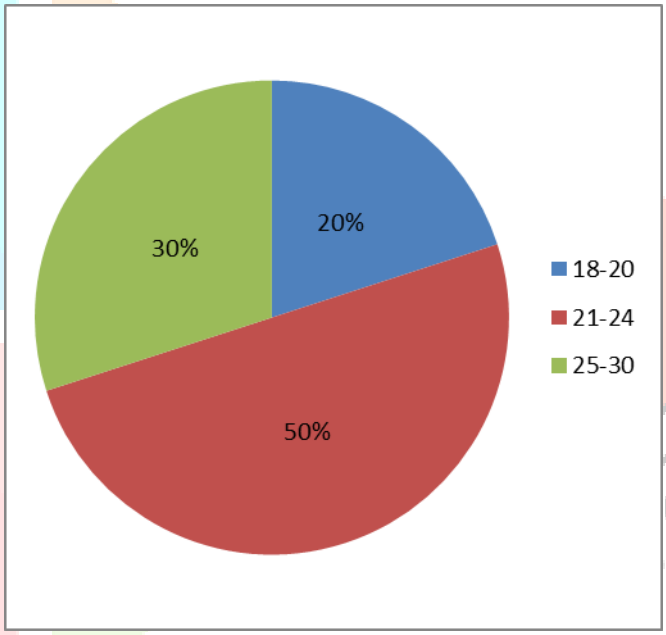
- Create a slight pause as the nervous system registers a tension.
- Begin you thumb to flatten in a medial direction and as your thumb begins to flatten, the muscle will pluck or pop or respond in some manner.[1]
- As earlier, again carry the skin and challenge the muscle first with the thumbs of both hands then by the fingers.
- The hands are placed with an inch space between the thumbs and the fingers so that the hands can play the muscle simultaneously (Fig: 3).
- Treatment time - 20 minutes, 3 sessions alternate days (6 sessions over 2 weeks). [1,3,7]

Fig: 3

XII. DATA ANALYSIS AND INTERPRETATION

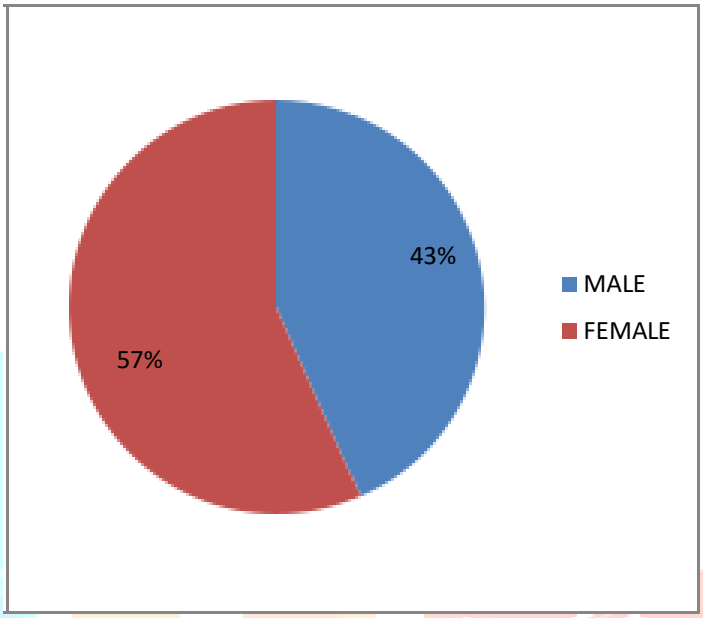
- Pain and Disability was analyzed using VAS and NDI respectively.
- Data was entered in excel spread sheet, tabulated and subjected to statistical analysis using GraphPad.com
- In group A (Muscle Energy Technique) pre and post analysis for pain and disability was done using paired t test.
- In group B (Bowen Technique) pre and post analysis for pain and disability was done using paired t test.
- Group A (Muscle Energy Technique) and group B (Bowen Technique) was analyzed using unpaired t test.

AGE WISE DISTRIBUTION OF POPULATION



AGE	GROUP A	GROUP B	TOTAL
18-20	6	3	9
21-24	15	18	33
25-30	9	9	18
			60

GENDER WISE DISTRIBUTION OF POPULATION



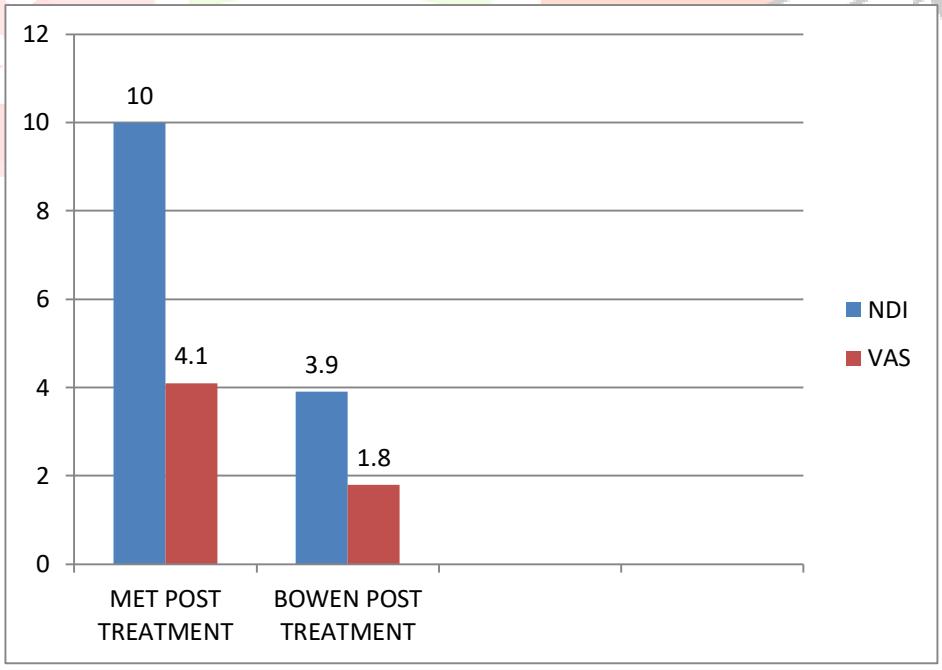
GENDER	GROUP A	GROUP B	TOTAL
MALE	13	5	18
FEMALE	17	25	42
			60

INTER GROUP COMPARISON (Graph: 1)

❖ Graph showing comparison between Group A (Muscle Energy Technique) and Group B (Bowen Technique) -

	NDI		VAS		RESULT
	Group A	Group B	Group A	Group B	
MEAN + STD	10.0 2.834	3.9 1.446	4.1 0.711	1.8 0.846	
P	<0.0001		<0.0001		Extremely significant
T	10.556		11.386		

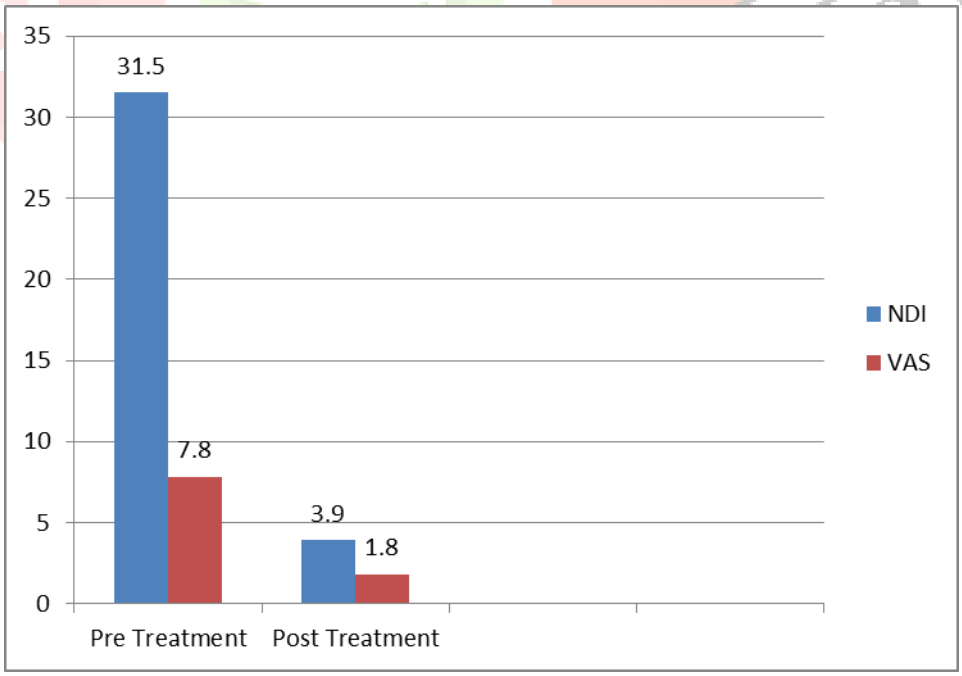
Graph: 1



INTRA GROUP COMPARISON- BOWEN TECHNIQUE (Graph: 2)

	NDI		VAS		RESULT
	PRE	POST	PRE	POST	
MEAN + STD	31.5 5.250	3.9 1.446	7.8 0.846	1.8 0.846	Extremely significant
P	<0.0001		<0.0001		
T	30.831		30.901		

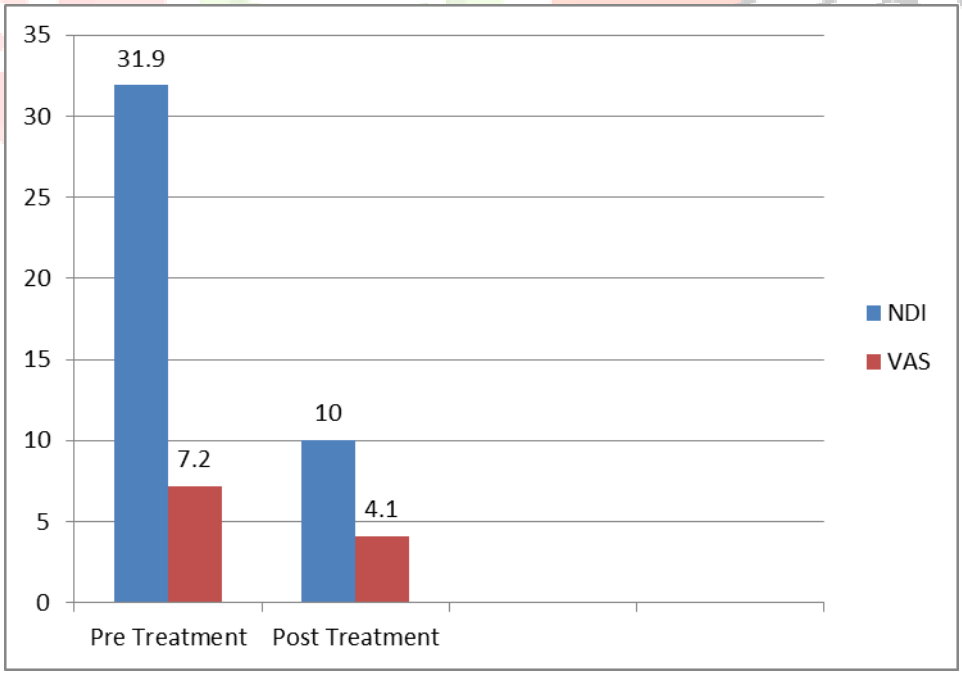
Graph: 2



INTRA GROUP COMPARISON – MET (Graph: 3)

	NDI		VAS		RESULT
	PRE	POST	PRE	POST	
MEAN + STD	31.9 4.901	10.03 2.834	7.26 1.014	4.1 0.711	Extremely significant
P	<0.0001		<0.0001		
T	32.68		21.91		

Graph: 3



XIII. RESULTS

- The difference between PRE and POST were compared and analyzed using paired t-test for neck pain and disability in young adults with acute unilateral trapezitis. (Graph 2 and 3)
- The difference between POST treatment scores were compared and analyzed using unpaired t-test for neck pain and disability in young adults with acute unilateral trapezitis. (Graph 1)
- Within group A, the pre and post treatment scores of VAS and NDI were considered extremely significant.
- Within group B, the pre and post treatment scores of VAS and NDI were considered extremely significant.
- The comparison between post treatment NDI and VAS values of both the groups showed more improvement on pain and disability in subjects treated by Bowen technique than Muscle Energy Technique.
- The mean value (NDI) of group B (3.9 1.446) is lesser than group A (10.033 2.834) with p value = 0.0001.
- The mean value (VAS) of group B (1.8 0.846) is lesser than group A (4.1 0.711) with p value = 0.0001.
- Bowen technique proved to be more effective in all variables of both groups.

XIV. DISCUSSION

- The present study was undertaken with the intension to see the effect of MET and Bowen technique on pain (VAS) and Neck Disability (NDI) in young adults (18-30) with acute unilateral trapezitis and to compare weather MET or Bowen technique is more effective in reducing pain and neck disability.
- Intervention was done for 2 weeks – (6 sessions over 2 weeks) to see which technique is more effective in decreasing pain and neck disability in terms of VAS and NDI scores.
- For the study 60 subjects were divided into 2 groups of 30 each.
- The study comprised of subjects between 18-30 years in both groups.
- Group A received MET and group B Bowen technique.
- Study was done and data was collected pre and post treatment.
- Pain was rated using VAS score and neck disability using NDI score.
- Later the data was statistically analyzed using paired t-test for outcome within the groups and unpaired t-test for outcomes between the 2 groups.
- The study from statistical analysis supports the alternate hypothesis which states that Bowen technique is more effective than MET on pain and neck disability in young adults with acute unilateral trapezitis.
- The result of the current study are in accordance with Bimal kumar, J (2018) who concluded that both Bowen technique as well as MET was effective but comparing both the techniques, Bowen technique has shown more improvement in hamstring flexibility and ROM than MET. [3]
- Nitsure P, Kothari N. conducted a study to show the effectiveness of Bowen technique as an adjunct to conventional physiotherapy on pain and functional outcomes in subjects with acute trapezitis, concluded that Bowen technique is effective in reducing pain, improving ROM and reducing neck disability in patients with acute trapezitis. [1]
- The result of the study are also in accordance with Michelle Marr el al in 2010 who studied the effect of the Bowen technique on hamstring flexibility over time revealed immediate significant increase in the flexibility of the hamstring muscles both within subjects and between subjects differences for the Bowen group. There was significant increase in the flexibility level observed over one week. [4]
- Jhaveri A, Gahlot P. conducted a study comparing the effectiveness of Myofascial release technique versus MET on chronic trapezitis ,concluded that MET found to be significantly more added effect that Myofascial release technique in improving pain, cervical disability and cervical movements. [7]
- Muscle energy technique (MET) is a manual therapy technique and is also called as active muscular relaxation technique in which controlled, voluntary, isometric contractions of the target muscle groups are used.
- It reduces pain by central and peripheral modular mechanisms, such as activation of muscle and joint mechanoreceptors that involve centrally mediated pathways like the periaqueductal grey (PAG) in the midbrain, or non -opioid serotonergic and noradrenergic descending inhibitory pathways.[2]
- After application of MET there was significant decrease in pain and neck disability when measured using VAS and NDI respectively.
- Hence, our study concluded that when Bowen technique and muscle energy technique are compared, they both are effective in decreasing pain and neck disability when delivered.

- It also concludes that Bowen technique was little more effective than MET as it was a passive technique and the muscle was relaxed due to the deep pressure and moves applied by the therapist. It works through muscle reflexes to alert the central nervous system to release tension and decrease tone and thereby stimulates the body to heal itself and lessens the pain and tension and return to more optimal function.

XV. CONCLUSION

- Muscle Energy Technique (MET) is effective on neck pain and disability in young adults (Age- 18-30 years) with acute unilateral trapezitis.
- Bowen technique is effective on neck pain and disability in young adults (Age- 18-30 years) with acute unilateral trapezitis.
- But on comparing – Bowen technique is more effective than MET in young adults (Age- 18-30 years) in treating acute unilateral trapezitis.

XVI. LIMITATIONS

- Subjects could not be followed up after the study duration.
- Neck pain and disability can affect the quality of life which was not considered during the study.
- The sample size was limited in and around pune city.

XVII. FUTURE SCOPE OF STUDY

- Effect of Muscle energy technique and Bowen technique can be compared with other techniques.
- Future research can be done with long term follow up to know the consistency of the effects.
- Quality of life should be considered during future studies.
- Other outcome measures can be used for future studies like neck ROM, craniovertebral angle.

XVIII. REFRENCES

[1] Nitsure P, Kothari N. The effectiveness of Bowen Technique as an adjunct to conventional physiotherapy on pain and functional outcomes in subject with acute trapezitis - A Pilot Study. Romanian Journal of Physical Therapy/Revista Romana de Kinetoterapie. 2015 Dec 1;21(36).

[2] Fryer G. Muscle energy technique: An evidence-informed approach. International Journal of Osteopathic Medicine. 2011 Mar 1;14(1):3-

[3] Bimal Kumar J. Effect of Bowen Technique Versus Muscle Energy Technique on Asymptomatic Subjects with Hamstring tightness (Doctoral dissertation, Nandha College of Physiotherapy, Erode).

[4] Marr M, Baker J, Lambon N, Perry J. The effects of the Bowen technique on hamstring flexibility over time: a randomised controlled trial. Journal of bodywork and movement therapies. 2011 Jul 1;15(3):281-90.

[5] Wilks J. The Bowen technique-mechanisms for action. Journal of the Australian Traditional-Medicine Society. 2013 Mar;19(1):33-5.

[6] Yadav SK. Comparative study between the effectiveness of Bowen Technique and dynamic soft tissue mobilization in increasing hamstring flexibility (Doctoral dissertation).

[7] Jhaveri A, Gahlot P. Comparison of Effectiveness of MyoFacial Release Technique Versus Muscle Energy Technique On Chronic Trapezitis-An Experimental Study.

[8] Wilks J, Knight I. Using the Bowen technique to address complex and common conditions. Singing Dragon; 2014 Aug 21.

[9] Patel N, Desai S, Patel P. Effectiveness of Muscle Energy Technique versus Positional Release Technique on Upper Trapezius Trigger Points in Subjects with Neck Pain–Comparative Study. Int J Cur Res Rev| Vol. 2021 Jun;13(11):87.

[10] Sadria G, Hosseini M, Rezasoltani A, Akbarzadeh Bagheban A, Davari A, Seifolahi A. A comparison of the effect of the active release and muscle energy techniques on the latent trigger points of the upper trapezius. J Bodyw Mov Ther. 2017 Oct;21(4):920-925. doi: 10.1016/j.jbmt.2016.10.005. Epub 2016 Oct 21. PMID: 29037649.

[11] Clarke S. A Textbook of Bowen Technique. Journal of the Australian Traditional-Medicine Society. 2012 Dec 1;18(4):245-6.

[12] Pennington G. A Textbook of Bowen Technique: A Comprehensive Guide to the Practice of Bowen Therapy. Barker Deane Publishing; 2012.

[13] Goodridge JP. Muscle energy technique: definition, explanation, methods of procedure. The Journal of the American Osteopathic Association. 1981 Dec 1;81(12):67-74.

[14] Nambi G, Sharma R, Inbasekaran D, Vaghesiya A, Bhatt U. Difference in effect between ischemic compression and muscle energy technique on upper trepezius myofascial trigger points: Comparative study. International Journal of Health & Allied Sciences. 2013 Jan 1;2(1):17-.

[15] Gilani MH, Obaid S, Tariq M. Comparison between effectiveness of ischemic compression and muscle energy technique in upper trapezius myofascial trigger points. Isra Med. J. 2018;10:230-4.