

To Compare the Effectiveness of Cupping Therapy vs Myofascial Release Technique in Trapezitis Caused by Digitalization

Shilpa Arya¹, Tarang Srivastava², Niraj Kumar³

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Abstract

Background: Trapezitis is defined as the 'inflammation of trapezius muscle'. The upper trapezius muscle designed as postural muscle and its highly susceptible to overuse. people who use their arms for extended periods of time that requires holding their arms out in front, like operating mobile, computer, bike riding, car driving or an assembly line worker will recognize a burning pain between the shoulder blades. Myofascial release which eliminates the fascia's excessive pressure on the pain sensitive structure and restores proper alignment. Hence this technique is proposed to act as a catalyst in cupping therapy (CT) a traditional chinese medicine therapy, has used for >2000 years and uses a negative pressure mechanism. the resolution of trapezius spasm.

Aim: The aim of study is to compare the effectiveness of cupping therapy vs. myofascial release technique in trapezitis caused by digitalization.

Method: Total 30 patients were included in the study by simple random sampling method. Subjects were divided into two groups with 15 patients in each group. Group A was receive UST with myofascial release technique, Group B was receive UST with cupping therapy. The patient was assessed pre and post intervention through visual analog scale (VAS), neck disability index (NDI), and cervical range of motion (CROM).

Result: Data was analyzed by using paired t- test. Pre and post score were taken via VAS, NDI, CROM. P value <0.05.

Conclusion: The study concluded that both the groups has shown significant improvement in reduction of pain and improve functional limitation and range of motion. However MFR with UST has shown a better improvement than cupping therapy with UST when the subjects in both the groups are compared.

Keywords: Trapezitis; MFR; Cupping Therapy; VAS; NDI; CROM.

Author Affiliation:

¹PG Student, ²Associate Professor, ³Associate Professor and HOD, Department of Physiotherapy and Orthopedics, Shri Guru Ram Rai University, Dehradun, Uttarakhand 248001, India.

Corresponding Author: Niraj Kumar, Associate Professor and HOD, Department of Physiotherapy and

Orthopedics, Shri Guru Ram Rai University, Dehradun, Uttarakhand 248001, India.

E-mail: drnirajkumar25@gmail.com

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Introduction

Trapezititis is defined as the 'inflammation of trapezius muscle'. The upper trapezius muscle designed as postural muscle and its highly susceptible to overuse.¹

People who use their arms for extended periods of time that requires holding their arms out in front, like operating mobile, computer, bike riding, car driving or an assembly line worker will recognize a burning pain between the shoulder blades.²

MFR causes soft tissue mobilization causing loosening of constricted connective tissue and freeing impinged structure of muscular and nervous system therefore enhances proper re-organization of connective tissue fibers and collagen fibers. Thus increases normal resting length of the muscle.³

One complementary method use to treat musculoskeletal condition is cupping. cupping therapy (CT) a traditional chinese medicine therapy, has used for >2000 years and uses a negative pressure mechanism. There are two type of cupping: wet cupping which involves bloodletting and dry cupping, which uses only a negative pressure treatment. Its principal mechanism relies on stimulating the acupuncture point. CT is an effective way to manipulate soft tissue, however, to the best of our knowledge, the efficacy of CT on TPs had not been reported yet.⁴

Cupping utilized a glass or bamboo cup or a mechanical device to create suction on the skin and underlying tissue. With dry cupping the cups are applied to the intact skin.⁵

Working on computer and operating smart phone for long period of time promotes repetitive use of certain muscles, resulting in muscle fiber injury, cumulative damage from acute trauma, and myogenic tonus, which occur most often in neck and shoulder.

Repetitive and cumulative trauma to the neck and shoulder causes forward head posture (FHP) a specific musculoskeletal abnormality. FHP weakens the deep cervical flexion muscle, the midthoracic rhomboid muscle for scapular retraction, and the mid and lower trapezius muscle.

FHP also shortens the pectoralis major and neck extension muscle. Upper trapezius muscle activity is increased more in FHP than in correct anatomic positions, and most patients complain of pain from muscle overuse.

Smart phone use in a static position and with an unsupported arm could bring about abnormal alignment of the neck and shoulders. Because

smartphone have small monitors that are typically held downward near the laps, users must bend their heads to see the screens, increasing activity in the neck extensor muscle over loading the neck and shoulder increase muscle fatigue, decreases work capacity and affects the musculoskeletal system.⁶

Cupping therapy (CT) is a traditional Chinese medical (TCM) treatment which has been practiced for thousands of years. The World Health Organization's (WHO) definition of cupping is a therapeutic method (Code 5.3.2) involving the application of suction by creating a vacuum. This is typically done using fire in a cup or jar (Code 5.3.7) on the dermis of the affected part of the body.

In Taiwan, approximately 12.8% of the participants reported the use of cupping therapies in the past year. The cupping mechanism constitutes creating a vacuum on the skin, with the ensuing negative pressure resulting in capillary rupture. This method is known as retained or dry cupping. The skin of the localized area becomes flushed and may show petechiae and ecchymosis or bruising, in which the duration is therapeutically beneficial.

Cupping has multiple therapeutic functions which include warming the channels to remove cold, promoting qi and blood circulation, relieving swelling, accelerating healing, adjusting body temperature, fibromyalgia, stroke rehabilitation, hypertension, musculoskeletal pain, herpes zoster, facial paralysis, acne, and cervical spondylosis and alleviating pain, including chronic neck, shoulder pain, and low back pain.⁷

Aim of Study

The aim of study is to compare the effectiveness of cupping therapy vs. myofascial release technique in trapezititis caused by digitalization.

Objectives of study

To find the effect of cupping therapy on pain reduction and improvement of cervical joint range of motion in trapezititis.

To find the effect of myofascial release technique on pain reduction and improvement of cervical joint range of motion.

Need of study

At present, the use of mobiles, laptops, computers, tablet use has increased a lot, everyone is using mobile phones or computers for their small jobs. That affects our neck posture & causes myofascial pain.

Myofascial pain syndrome is a common clinical problem of muscle pain caused by trigger points. It is a muscle stress syndrome characterised by presence of trigger point. Myofascial release technique & cupping therapy utilizes the stretching of fascia & muscle to help increase in range of motion and decrease pain by breaking adhesions in the fascia. Due to the above factors further studies are necessary to evaluate the most effective and safest treatment for the management of trapezitis.

Purpose of study

The purpose of study is to regain pain free full range of motion of neck and improve daily living activity. Because the trigger point of trapezius causes restricted range of motion & also affect the posture & hamper activity of daily living.

Hypothesis

Experimental Hypothesis

There may be significant difference between the effectiveness of cupping therapy vs. myofascial release technique in trapezitis caused by digitalization.

Null Hypothesis

There may not be significant difference between the effectiveness of cupping therapy vs. myofascial release technique in trapezitis caused by digitalization.

Review of Literature

A study done by ravish V.N, et al. (mar 3, 2014) comparative study design was used for this study. Inclusion criteria age: 20-50 year patient with unilateral trapezitis. Exclusion criteria- traumatic neck injury, fracture of cervical vertebrae, cervical spinal cord compromise, cervical radiculopathy. 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 alternative 3 days for four week after obtaining informed consent.

This study showed statically significant improvement in lateral flexion ($p=0.001$), reduction in pain intensity ($p=0.001$) and improvement in function ability ($p=0.001$) in both the groups. Myofascial release group was significantly better than the positional release group.⁸

A study done by jay sata (sep 2012) a comparative study between muscle energy technique and myofascial release therapy on myofascial trigger points in upper fibres of trapezius; study included 52 subjects with myofascial trigger point on upper fibre of trapezius. The subjects were treated for a period of 6 days a week, once in a day. Pain was assessed by VAS score, neck disability by NDI score and pain threshold by PPT score. Conclusion- myofascial release proving better than the muscle energy techniques on myofascial trigger point of upper fibres of trapezius.⁹

A study done by Stephanie L Stephens (july 2020) Dry Cupping Therapy for Improving Nonspecific Neck Pain and Subcutaneous Hemodynamics: A total of 32 participants (age = 22.5 ± 2.8 years, height = 173.3 ± 10.1 cm, mass = 76.6 ± 18.7 kg) with self-reported nonspecific neck pain. Subjective pain intensity (visual analog scale); pain-pressure threshold; subcutaneous hemodynamics, including superficial and deep oxygenated, deoxygenated, and total hemoglobin levels; and tissue saturation index. A single session of dry cupping therapy may be an effective short-term treatment method for immediately reducing pain and increasing oxygenated and total hemoglobin levels in patients with nonspecific neck pain.¹⁰

Methodology

Study design

The study design will be pre-test post-test experimental design. The total of 30 subject with trapezitis will be assign in two groups with 15 subject in each group. Group A: receive ultrasound therapy with myofascial release technique. Group B: receive ultrasound therapy with cupping therapy. Study sitting-After signing the consent form, the study will be conduct at the department of physiotherapy in Shri Mahant Indires hospital Dehradun.

Treatment duration: Each patient will receive the treatment for about four weeks. Treatment will be given for 45 min, single session and 6 days a week. Selection criteria.

Inclusion criteria: Palpable tender spot in the upper trapezius muscle, Limitation of neck movement due to pain, Both gender, Age group 20-45, Willingness to participate.

Exclusion criteria: Acute neck pain, Subject with Torticollis, Subject with radiating pain down to the arm or hand, Infective condition around the neck, Any cervical surgery history, Any other condition

that contra indicated stretching and similar manual therapy technique. Outcome measurement-Visual analog index (VAS), Neck disability index (NDI) & Cervical range of motion (CROM).

Procedure

30 patients between the age group of 20-45 years were included in study after taking a written consent from the patient. Patients were made aware of the research study & the procedure to be followed. Patients were divided into two groups randomly, each group consist of 15 patients of both male and female. Pre-assessment was taken prior to the commencement of treatment with self-report outcome measures of VAS, neck disability index, and cervical lateral flexion range of motion of opposite side with goniometry.

Group A would receive ultrasound therapy with myofascial release therapy and group B would receive ultrasound therapy with cupping therapy. The study was of 4 weeks, 6 days per week at department of physiotherapy in indresh hospital. Examination included assessment which was performed on first day and than last day of treatment and data was recorded.

Ultrasound therapy: Therapeutic ultrasound applied to the trapezius muscle area, mode-continuous, Intensity-variable according to pain threshold but within 1.5 watts/cm², Range- 0.1 to 1.5 watts/ cm², Treatment time- 5 min and patient position- high sitting with back rest.

Myofascial release technique: was applied with patient sitting on stool, arm supported on thighs. Therapist stood behind the patient close on the side to be treated. Forearm and/or ulnar border of the palm were used to apply the pressure and glide medially towards the base of the neck and/or towards the upper scapular region. As the glide was given, patient was asked to do side bending and to turn the head in opposite direction while sitting in erect position. Glides were given for 3-4 times.

Cupping therapy: The participants received CT for 10 min on the marked TP using a 12" plastic set with a hand vacuum pump. The vacuum cup size was determined according to the area on which the TP was situated. The skin and the cup were disinfected with alcohol, and the cup was placed on the marked TP, followed by a tolerable intensity of pumping. The cup was then kept on the TP for 10 min. When treating bilateral TPs, one cup was placed on the TP on the right side, and another was placed on the left side with a minimum delay. The time was measured after affixing the plastic vacuum on the left side of the TP.



Fig. 4.2: Myofascial release technique.



Fig. 4.3: group B applied cupping therapy.

Data Analysis

This chapter deals with the statistical analysis of the 3 outcome measures that is VAS, NDI and CROM, between group A and group B and within group A and group B. The data was analyzed by SPSS 20.

Paired t-test used to compare pre and post treatment scores of VAS, NDI, and CROM within group A and group B. Unpaired t-test used to compare post treatment scores of VAS, NDI, and CROM between group A and group B.

Result

This chapter deals with the result of data analysis of

the data of three outcome measures that is VAS, NDI, CROM within group A and group B and between group A and group. The score were analyzed and interpreted to determine which intervention is more effective in improving pain, neck disability, cervical range of motion in trapezitispatients.

Paired t-test was used to analyze and compare pre and post treatment score within the group A and group B. Significant level of 0.05 was used for data analysis. Unpaired t-test was used to analyze and compare post treatment score between group A and group B.

T-Test

Table 6.1: Comparison of VAS (group A).

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|----------|------|----|----------------|-----------------|
| Pair 1 | Pre VAS | 8.07 | 15 | .704 | .182 |
| | Post VAS | 2.73 | 15 | .799 | .206 |

Paired Samples Correlations

| | N | Correlation | Sig. |
|----------------------------|----|-------------|------|
| Pair 1 Prevas & Postvas | 15 | -.347 | .205 |

Paired Samples Test

| | | Mean | Std. Deviation | Std. Error Mean | Paired Differences | | t | df | Sig. (2-tailed) |
|--------|------------------|-------|----------------|-----------------|---|-------|--------|----|-----------------|
| | | | | | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Prevas - Postvas | 5.333 | 1.234 | .319 | 4.650 | 6.017 | 16.733 | 14 | .000 |

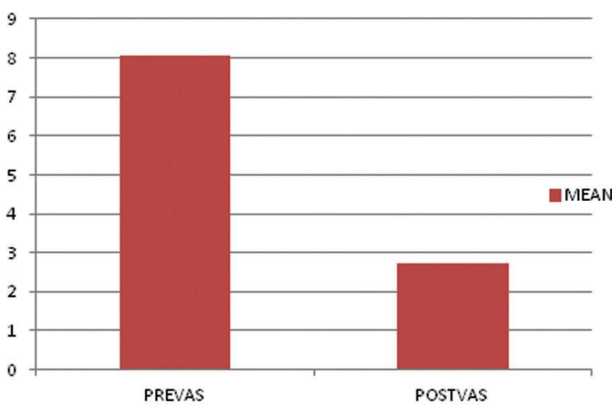


Fig. 6.1: Comparison of VAS Group A.

Explanation: From the above table we can check the value of mean is more in pre VAS. It shows that improvement in pain post VAS as compared to pre VAS in group A.

Analyzing VAS revealed significant difference in group A post treatment, Mean and standard error

of mean (2.73 ± .206) when compared to group A pre treatment, Mean and standard error of mean (8.07 ± .195).

T-Test

Table 6.2: Comparison of VAS (group B).

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|----------|------|----|----------------|-----------------|
| Pair 1 | BPREVAS | 8.00 | 15 | .756 | .195 |
| | BPOSTVAS | 3.53 | 15 | .834 | .215 |

Paired Samples Correlations

| | N | Correlation | Sig. |
|------------------------------|----|-------------|------|
| Pair 1 BPREVAS & BPOSTVAS | 15 | .340 | .215 |

Paired Samples Test

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|--------|-------------------|--------------------|----------------|-----------------|---|-------|--------|----|-----------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | BPREVAS -BPOSTVAS | 4.467 | .915 | .236 | 3.960 | 4.974 | 18.897 | 14 | .000 |

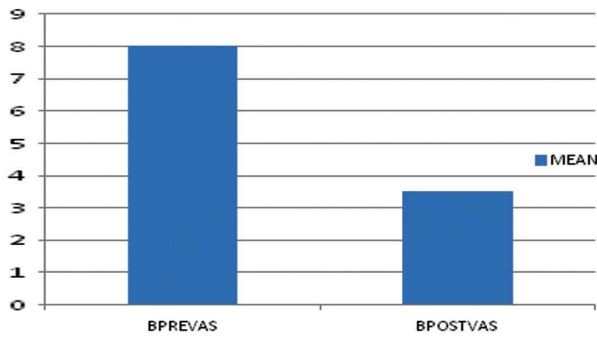


Fig. 6.2: Comparison of VAS Group B.

Explanation: From the above table we can check the value of mean is more in pre VAS. It shows that improvement in pain post VAS as compared to pre VAS in group B.

Analyzing VAS revealed slight significant difference in group B post treatment, Mean and standard error of mean ($3.53 \pm .215$) when compared to group B pre treatment, Mean and standard error of mean ($8.00 \pm .195$).

T-Test

Table 6.3: comparison of VAS (group A + B).

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|----------|------|----|----------------|-----------------|
| Pair 1 | POSTVAS | 2.73 | 15 | .799 | .206 |
| | BPOSTVAS | 3.53 | 15 | .834 | .215 |

Paired Samples Correlations

| | | N | Correlation | Sig. |
|--------|--------------------|----|-------------|------|
| Pair 1 | POSTVAS & BPOSTVAS | 15 | .336 | .221 |

Paired Samples Test

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|--------|--------------------|--------------------|----------------|-----------------|---|-------|--------|----|-----------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | POSTVAS - BPOSTVAS | -.800 | .941 | .243 | -1.321 | -.279 | -3.292 | 14 | .005 |

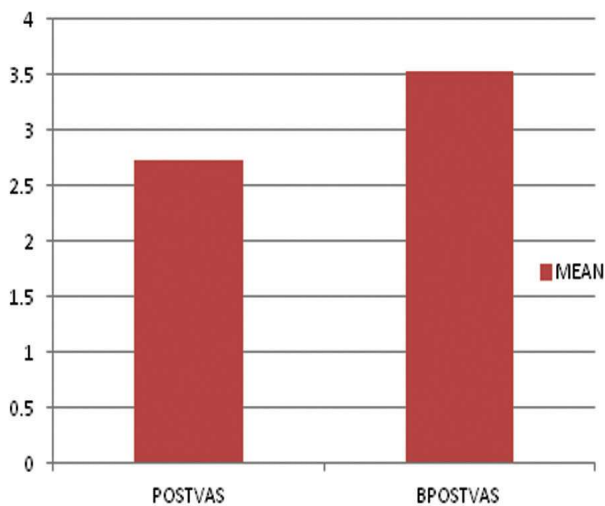


Fig. 6.3: Comparison of VAS Group A+B.

Explanation: from the above table we can check the value of mean is more in group B (BPOSTVAS). of post VAS. It shows that there is a significant improvement in group A in post VAS. Thus MFR is more effective in improving pain in trapezitis patients.

Analyzing VAS revealed slight significant difference between group A post treatment data and group B post treatment data, differences between means (B-A) and standard error of mean ($-.800 \pm .243$) that is group A shows more improvement in pain, neck disability, CROM after 4 weeks of intervention.

T-Test

Table 6.4: Comparison of NDI (group A).

| <i>Paired Samples Statistics</i> | | | | | | <i>Paired Samples Correlations</i> | | | |
|----------------------------------|---------|-------|----|----------------|-----------------|------------------------------------|------------------|-------------|------|
| | | Mean | N | Std. Deviation | Std. Error Mean | | N | Correlation | Sig. |
| Pair 1 | PRENDI | 26.60 | 15 | 3.795 | .980 | Pair 1 | PRENDI & POSTNDI | .792 | .000 |
| | POSTNDI | 16.67 | 15 | 4.515 | 1.166 | | | | |

| <i>Paired Samples Test</i> | | | | | | | | | |
|----------------------------|------------------|--------------------|----------------|-----------------|---|--------|--------|----|-----------------|
| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | PRENDI - POSTNDI | 9.933 | 2.764 | .714 | 8.403 | 11.464 | 13.920 | 14 | .000 |

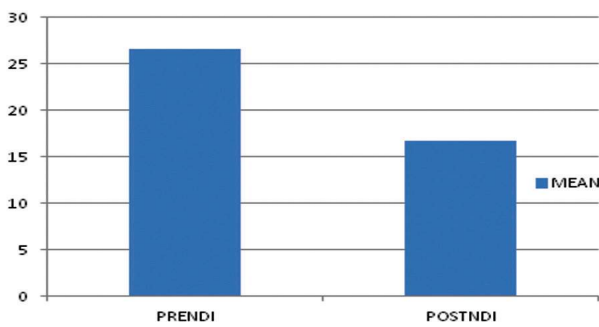


Fig. 6.4: Comparison of NDI Group A.

Explanation: From the above table we can check the value of mean is more in pre NDI. It shows that improvement in neck disability post NDI as compared to pre NDI in group A.

Analyzing NDI revealed significant difference in group A post treatment, Mean and standard error of mean (16.67 ± 1.166) when compared with group A pre treatment, Mean and standard mean ($26.60 \pm .980$).

T-Test

Table 6.5: Comparison of NDI (group B).

| <i>Paired Samples Statistics</i> | | | | | | <i>Paired Samples Correlations</i> | | | |
|----------------------------------|----------|-------|----|----------------|-----------------|------------------------------------|--------------------|-------------|------|
| | | Mean | N | Std. Deviation | Std. Error Mean | | N | Correlation | Sig. |
| Pair 1 | BPRENDI | 28.13 | 15 | 3.114 | .804 | Pair 1 | BPRENDI & BPOSTNDI | .943 | .000 |
| | BPOSTNDI | 20.53 | 15 | 3.889 | 1.004 | | | | |

| <i>Paired Samples Test</i> | | | | | | | | | |
|----------------------------|--------------------|--------------------|----------------|-----------------|---|-------|--------|----|-----------------|
| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | BPRENDI - BPOSTNDI | 7.600 | 1.404 | .363 | 6.822 | 8.378 | 20.964 | 14 | .000 |

Explanation: From the above table we can check the value of mean is more in pre NDI. It shows that improvement in neck disability post NDI as compared to pre NDI in group B.

Analyzing VAS revealed slight significant difference in group B post treatment, Mean and standard error of mean (20.53 ± 1.004) when compared to group B pre treatment, Mean and standard error of mean ($28.53 \pm .804$).

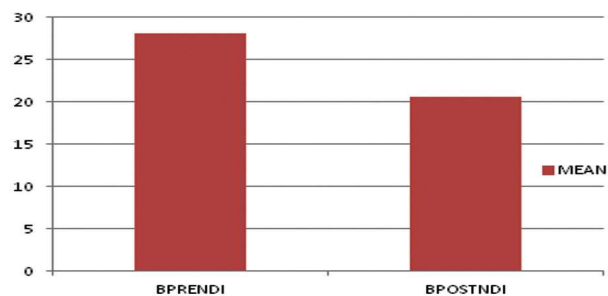


Fig. 6.5: Comparison of NDI Group B.

T-Test

Table 6.6: Comparison of NDI (group A+B).

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|----------|-------|----|----------------|-----------------|
| Pair 1 | POSTNDI | 16.67 | 15 | 4.515 | 1.166 |
| | BPOSTNDI | 20.53 | 15 | 3.889 | 1.004 |

Paired Samples Correlations

| | N | Correlation | Sig. |
|---------------------------|----|-------------|------|
| Pair 1 POSTNDI & BPOSTNDI | 15 | -.107 | .704 |

Paired Samples Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|-----------------------------|--------------------|----------------|-----------------|---|-------|--------|----|-----------------|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 Postndi Bpostnd I | -3.867 | 6.266 | 1.618 | -7.337 | -.396 | -2.390 | 14 | .031 |

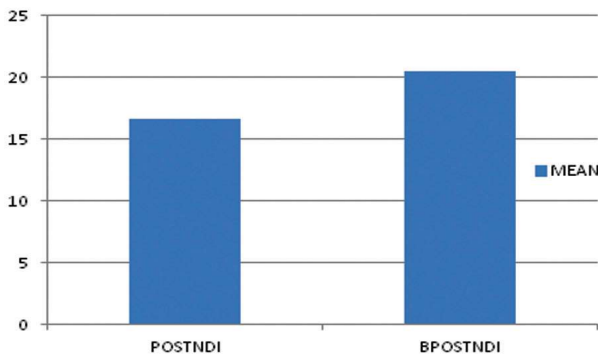


Fig 6.6: comparison of NDI Group A+B

Explanation: From the above table we can check the value of mean is more in group B. of post NDI. It shows that there is a significant improvement in group A in post NDI. Thus MFR is more effective in improving neck disability in trapezitis patients.

Analyzing NDI revealed slight significant difference between group A post treatment data and group B post treatment data, differences between means (B-A) and standard error of mean (-3.867±1.618) that is group A shows more improvement in pain, neck disability, CROM after 4 weeks of intervention.

T-Test

Table 6.7: Comparison of CROM (group A)

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|---------|-------|----|----------------|-----------------|
| Pair 1 | PRERTF | 30.73 | 15 | 5.775 | 1.491 |
| | POSTRTF | 38.20 | 15 | 3.688 | .952 |
| Pair 2 | PRELFF | 33.67 | 15 | 6.532 | 1.687 |
| | POSTLFF | 39.07 | 15 | 3.411 | .881 |

Paired Samples Correlations

| | N | Correlation | Sig |
|-------------------------|----|-------------|------|
| Pair 1 PRERTF & POSTRTF | 15 | .724 | .002 |
| Pair 2 PRELFF & POSTLFF | 15 | .774 | .001 |

Paired Samples Test

| | Paired Differences | | | | | f | df | Sig. (2-tailed) |
|-------------------------|--------------------|----------------|-----------------|---|--------|--------|----|-----------------|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 PRERTF - POSTRTF | -7.467 | 4.015 | 1.037 | -9.690 | -5.243 | -7.202 | 14 | .000 |
| Pair 2 PRELFF - POSTLFF | -5.400 | 4.453 | 1.150 | -7.866 | -2.934 | -4.697 | 14 | .000 |

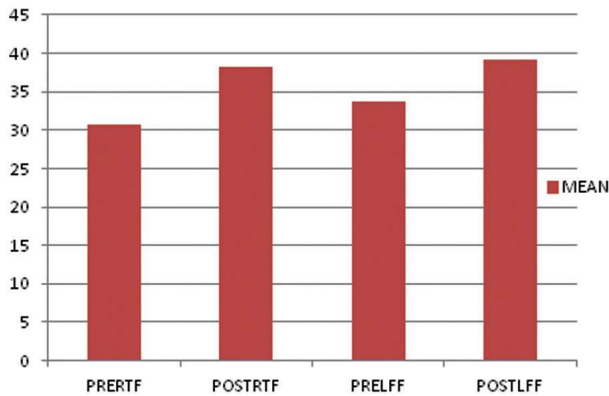


Fig 6.7: Comparison of CROM Group A)

Explanation: From the above table we can check the value of mean is less in pre right and left side flexion (PRERTF-PRELFF). It shows that improvement in cervical range of motion post CROM in right and left side flexion as compared to pre CROM in group A.

Analyzing CROM revealed significant difference in group A post right side flexion treatment, Mean

and standard error of mean ($38.20 \pm .952$) and left side flexion mean and standard error of mean ($39.07 \pm .881$) when compared with group A pre right side flexion treatment, Mean and standard mean (30.73 ± 1.401) left side flexion mean and standard error of mean (33.67 ± 1.687).

T-Test

Table 6.8: Comparison of CROM (Group B)

Paired Samples Statistics

| | Mean | N | Std. Deviation | Std. Error Mean |
|----------------|-------|----|----------------|-----------------|
| Pair 1 BPRERTF | 29.93 | 15 | 4.818 | 1.244 |
| BPOSTRTF | 34.33 | 15 | 3.222 | .832 |
| Pair 2 BPRELFF | 33.53 | 15 | 6.034 | 1.558 |
| BPOSTLFF | 36.40 | 15 | 4.154 | 1.073 |

Paired Samples Correlations

| | N | Correlation | Sig. |
|---------------------------|----|-------------|------|
| Pair 1 BPRERTF & BPOSTRTF | 15 | .765 | .001 |
| Pair 2 BPRELFF & BPOSTLFF | 15 | .906 | .000 |

Paired Samples Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---------------------------|--------------------|----------------|-----------------|---|--------|--------|----|-----------------|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| Pair 1 BPRERTF - BPOSTRTF | -4.400 | 3.135 | .809 | -6.136 | -2.664 | -5.436 | 14 | .000 |
| Pair 2 BPRELFF -BPOSTLFF | -2.867 | 2.875 | .742 | -4.459 | -1.274 | -3.862 | 14 | .002 |

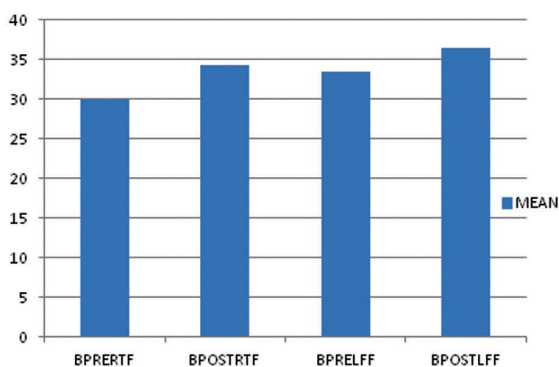


Fig 6.8: Comparison of (CROM Group B)

Explanation: From the above table we can check the value of mean is less in pre right and left flexion (PRERTF-PRELFF). It shows that improvement in cervical range of motion post CROM in right and left side flexion as compared to pre CROM in group B.

Analyzing CROM revealed significant difference in group B post right side flexion treatment, Mean and standard error of mean ($34.33 \pm .832$) and left side flexion mean and standard error of mean (29.93 ± 1.244) when compared with group A pre right side flexion treatment, Mean and standard

mean (36.40±1.073) left side flexion mean and standard error of mean (33.53±1.558).

T-Test

Table 6.9: Comparison of CROM (Group A+ B)

Paired Samples Statistics

| | Mean | N | Std. Deviation | Std. Error Mean |
|---------------|-------|----|----------------|-----------------|
| Pair 1 OSTRTF | 38.20 | 15 | 3.688 | .952 |
| BPOSTRTF | 34.33 | 15 | 3.222 | .832 |

| | | | | |
|---------------|-------|----|-------|-------|
| Pair 2 OSTLFF | 39.07 | 15 | 3.411 | .881 |
| BPOSTLFF | 36.40 | 15 | 4.154 | 1.073 |

Paired Samples Correlations

| | N | Correlation | Sig. |
|---------------------------|----|-------------|------|
| Pair 1 POSTRTF & BPOSTRTF | 15 | .054 | .848 |
| Pair 2 POSTLFF & BPOSTLFF | 15 | -.214 | .444 |

Paired Samples Test

| | Paired Differences | | | | t | df | Sig. (2-tailed) | |
|-----------------------------|--------------------|----------------|-----------------|---|-------|-------|-----------------|-------|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | | | | Upper |
| Pair-POSTRTF 1 BPOSTRTF | 3.867 | 4.764 | 1.230 | 1.228 | 6.505 | 3.144 | 14 | .007 |
| Pair -POSTLFF 2 BPOSTLFF | 2.667 | 5.912 | 1.526 | -.607 | 5.941 | 1.747 | 14 | .103 |

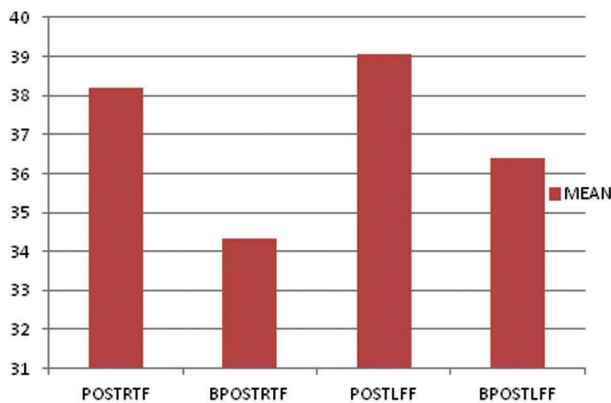


Fig 6.9: Comparison of CROM Group A+B

Explanation: From the above table we can check the value of mean is less in group B of post CROM in right side flexion and left side flexion. It shows that there is a significant improvement in group A in post CROM in right and left side flexion. Thus MFR is more effective in improving cervical range of motion in trapezitis patients.

Analyzing CROM revealed slight significant difference between group A post treatment data and group B post treatment data, differences between means (B-A) and right side flexion standard error of mean (3.867±1.230) and left side flexion standard error of mean (2.667±1.526) that is group A shows more improvement in pain, neck disability, CROM after 4 weeks of intervention.

Discussion

This study was conducted to compare the effectiveness of cupping therapy versus myofascial release technique in trapezitis caused by digitalization.

This study was conducted on 30 subjects with the age group of 20-45 according to the inclusion criteria and was randomly divided into two groups i.e. group-A and group-B based on sampling method. Subjects of Group-A was treated with myofascial release technique and group-B with cupping therapy and both the groups were given ultrasound therapy.

In MFR, the gentle forces applied to the facial 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 facial planes, and most importantly resets the soft tissue proprioceptive sensory mechanism. This latter factor reprograms the central nervous system, enabling a normal functional range of motion without eliciting the old pain pattern.¹¹

The result present study showed that myofascial release technique with UST improves pain and cervical range of motion. In the literature, there are many studies of the myofascial release technique in trapezitis. One of the review state that Shridhar et al. (2014) conducted a study comparing MFR and PRT in individuals with unilateral trapezitis and

found MFR to be significantly superior in treating trapezitis. Myofascial release is the interactive stretching techniques that require feedback from the patient's body to determine the direction, force and duration of the stretch and to facilitate maximum relaxation of tight or restricted tissue.

It acts on the taut bands and sarcomere shortening which activate the latent MTrPs and effectively decreases the restriction by application of a continuous load over the area of the muscle. This supports the findings of the study of MFR being effective in reducing pain and disability and increasing range of individuals with acute trapezitis.

In our study myofascial technique gives better result to improve pain or neck disability. Paul J et al., who compared the effect of MFR and deep transverse friction massage for upper trapezius trigger point, explained that MFR 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.¹²

CT has been used to treat pain symptoms for thousands of years to the best of our knowledge; however, there was no literature on specifically treating TPs. Cupping was generally used to stimulate acupuncture points. Some recent studies had revealed the capability of cupping to increase the blood circulation at the cupping point. It also showed some influence on increasing the parasympathetic activity, which could also increase the peripheral blood supply and reduction in pain.

In our study cupping therapy helps to improve pain or neck disability. The CT therapeutic method can cause vasodilatation and stimulate blood circulation to increase metabolism and accelerate the elimination of waste and toxins from the body. This effect acts to improve physical function and affect BP. Xu et al. demonstrated changes in skin temperature in the cupping area before and after cupping. When the cup was removed, 10 minutes after cupping, the skin temperature in the cupping area was elevated compared to the control area and showed significant difference.

Al-Rubaye also showed immediate clinical changes after cupping which included the sensation of increased warmth on the skin surface.¹³ Based on the data both group A and B showed a drastic improvement in NDI, VAS and CROM and it has also shown significant improvement clinically of pain, functional limitation and improved range of motion. Consequently both groups showed ample

improvement over baseline data. However subjects in group A received MFR and UST showed better improvement than the subjects in group B who received cupping and UST when both the group were compared at the end of four week.

Limitation of Study

The sample size was small i.e., 30 patients and 15 patients in each group. Proper follow-up was not done due to covid-19 pandemic.

Future Research

Further studies are recommended to minimize this limitation in such a way that larger sample size of both sexes that include various age groups of people are studied.

The duration of study can be increased.

Various outcome measures can be used in order to record functional independence in better way.

Conclusion

Following the comparative study, to assess the To compare the effectiveness of cupping therapy vs. myofascial release technique in trapezitis caused by digitalization, it was concluded that both the groups has shown significant improvement in reduction of pain and improve functional limitation and range of motion. However MFR with UST has shown a better improvement than cupping therapy with UST when the subjects in both the groups are compared.

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