



COMPARISON OF BOWEN'S TECHNIQUE AND MYOFASCIAL RELEASE TECHNIQUE ON PAIN AND NECK DISABILITY IN PATIENTS WITH TRAPEZITIS

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Abstract

Background: Trapezitis, characterized by inflammation of the trapezius muscle, presents with pain, stiffness, spasm, and altered cervical ranges and scapular motion. Various treatments exist, including Hot pack, Cryotherapy,

Objective: This study aimed to assess the short-term effects of the Bowen technique and Myofascial release technique on neck pain, neck disability, cervical range of motions, and scapular motion in trapezititis patients.

Methods and Methodology: A randomized clinical trial with 42 participants aged 20-40 at Islamabad Physiotherapy and Rehabilitation Centre and Benazir Bhutto Hospital. Group A received Bowen technique, and Group B received Myofascial Release Technique for 20 minutes, along with active neck movements and hot pack for three consecutive days. Assessment included Cervical ROMs, NPRS, NDI, Pain in ISPT, Retraction Hold Time, and Variation in LSST at baseline and after 3 days.

Results: Significant differences were observed in Cervical extension, Rotation, Side-bending, Numeric Pain Rating Scale, Neck Disability Index, Retraction Hold Time, and Variation in Lateral Scapular Slide Test between the two groups (p -value < 0.05). No significant difference was found in Cervical flexion and Pain with Isometric Scapular Pinch Test (p -value > 0.05).

Conclusion: Both MFR and Bowen demonstrated short-term effectiveness in alleviating pain, reducing neck disability, improving cervical ROMs, and enhancing scapular position. However, MFR showed greater efficacy than Bowen in certain aspects, suggesting its superiority in treating trapezius symptoms.

Keywords: Bowen Technique, Isometric Scapular Pinch Test, Lateral Scapular Slide test, Myofascial Release Technique, Neck Disability Index, Trapezius.

1. INTRODUCTION

Trapezius is a known condition that involves inflammation of the trapezius muscle. Trapezius muscle, which is a postural muscle, is highly susceptible to overuse injuries and inflammation (1). Trapezius is characterized by presence of trigger points in muscle or in investing connective tissue, along with the pain, tenderness, stiffness, limitation of cervical and scapular motions and muscle spasm (2). The most common cause of trapezius is placing over stress or strain on the trapezius muscle. Any tightness in the trapezius muscle can reduce the range of motion of the neck to a great extent, which in turn has a negative effect on all the movements of the cervical spine and hence its overall mobility (3, 4).

Musculoskeletal pain is progressively increasing in young adults' population and affects the daily activities and function of the individuals (5). One of the major musculoskeletal problems in the adult population is neck pain.(6) The prevalence of neck pain has increased greatly as shown by numerous studies in the near past. The prevalence data of the neck pain has shown the one year incidence to around 40% (7). The World Health Organization (WHO) has ranked neck pain at 4th position for years lived with disability among all the health conditions (7). A similar study showed that 2/3rd of the general population have neck pain once in their life spans and the prevalence of neck pain is highest in the middle-aged adults' segment of the population (8). the Scandinavian countries have higher prevalence in Europe and Asia (5, 9, 10). A study conducted on undergraduate population of Baluchistan in Pakistan measured pain prevalence to be about 69%.(11) Another study conducted in University of Lahore, Pakistan concluded work related neck pain prevalence to be 22% (12, 13). The prevalence of Neck pain varies from study to study in literature. The mean point prevalence of neck pain 13 % (i.e. it ranges from 5.9% –38.7 %) and it has a 50% mean lifetime prevalence (i.e. ranges from 14.2% –71.0 %) as found in some studies. (14, 15)

The trapezius muscle is an inverted diamond-shaped muscle present at the back of the body.(8) The trapezius muscle carries out the basic functions of neck rotation, cervical side bending and neck extension.(16) the trapezius muscle carries out the basic functions of neck rotation, cervical side bending and neck extension.(16)Trapezius muscle also has its role on scapular motions like elevation , depression and scapular retraction.(17) Trapezius muscle plays the role of a stabilizer in the Scapular kinematics. It contributes to the scapulohumeral rhythm, thus, any weakness or abnormal activation of trapezius muscle alters the scapular position and mechanics.(18, 19)

Trapezius can be caused due to posture, muscle spasm, injuries, and trauma. Activities that induce stress or any kind of tension, like repetitive movements, maintaining forward head posture as in watching television, working on computer and laptops with a compromised posture, (9) sitting with no proper back support, having no arm support while working, prolong head-bending posture, using thick pillow under the neck can be the cause of spasm in neck and thus the pain (2). If spasm is left untreated, it can progress into muscle knots because of continuous contracted state of a muscle (14). In people having a workload that demands to attain sitting position for long hours at a desk like having computer-operated jobs, driving for long hours, the decreased activity of trapezius especially upper trapezius is most commonly found (20, 21). Trigger points are the potential factors to cause pain, cause ROMs limitation and restrict the functional activities of daily living(22).The repetitive strain injuries related to work are called cumulative trauma disorder. It is also an important cause of neck pain and trapezius (23, 24). Different occupational exposures, or harmful effects of the workplace e.g. prolonged computer use, prolonged sitting or standing etc. result in

Occupational Overuse syndrome (20, 25). The common symptoms of trapezius include muscle stiffness, palpable trigger points, pain, limited neck Range of Motions, (26) mispositioning of scapula due to lack of stability provided by middle and lower fibers and scapular movement restrictions like retraction and elevation (27) (26).

The trapezius treatment requires a multifaceted treatment approach. Several techniques are shown to be effective in the management of Trapezius like Rest, Ultrasound, Heat, MWD, TENS, sprays, stretching, Post-isometric relaxation techniques (PIR) , Muscle Energy techniques(METs), positional release techniques (PRTs), Myofascial release techniques(MFR) and Bowen's technique etc (2, 3, 28, 29). Myofascial release technique (MFR) is a form of soft tissue technique where low load is applied, and stretch is given for a long period to the myofascial complex. This combination of pressure and stretch helps to restore optimal length of the soft tissue, to decrease the intensity of pain and to improve the overall function (30). MFR directs the force through knuckles/elbow directly to the fibroblast cells of fascia and also strain is applied indirectly to the blood vessels, nerves and lymphatic system of the area. The repetitive strain results in normalizing of the apoptotic rate of fibroblasts and causes decrease in the production rate of inflammatory cytokines thus reducing the pain (31).

There is another manual therapy technique that targets the soft tissues called 'Bowen Technique'. This technique is very effective and is mostly used to treat and myofascial pain. Bowen technique is applied on the structures via subtle inputs. These inputs are named as 'Bowen moves'(32). The Bowen moves are applied over the fascia, muscles, nerves and tendons. The moves involve applying gentle and non-invasive pressures through the fingers and thumb (13, 33). A single treatment session consists of multiple sets of these moves in a specified sequence, which are called procedures; frequent pauses are given between the moves so that the body gets its due time to respond to the whole treatment. In response to it, a slight stretch is produced in the muscle fibers that cause the fascia to be slightly disturbed from its neutral position. At last, the muscle is gently compressed and as a reaction to the compression, it springs back to its original neutral position. This pattern is called a Bowen move and it forms the basis of all therapeutic moves (34, 35).

2. Methodology

The study design was Randomized Clinical Trial. Data collection was done by non-probability Convenience sampling. The participants were randomly allocated in two groups by sealed envelope method. A total of patients reporting in Islamabad Physiotherapy and Rehabilitation Centre (IPRC) and Benazir Bhutto Hospital (BBH) Rawalpindi, satisfying the inclusion criteria were recruited in the study. Pre-intervention assessment was done by data collection tools and then interventions were applied. Group A received Bowen's technique and Group B received Myofascial Release Technique. The group A participants received Bowen technique for 20 minutes along with Active cervical ROMs (10 reps each) for 3 days. The patient was in lying position while therapist provided 15-20 sets of Bowen moves with a gap of 2 mins between each set. Bowen moves were applied through thumb/fingers in direction of fibers engaging whole trapezius muscle.(34, 36) The participants of group B received Myofascial Release technique as for 20 minutes along with Active cervical ROMs (10 reps each) for 3 days. Patient was in lying position while therapist stood on the effected side. MFR was applied by knuckles/ulnar border of palms in direction of fibers engaging whole muscle. Patients head was held in contralateral side-flexion when targeting upper trapezius fibers (2). The post intervention assessment was done using data collection tools after completion of treatment. The Outcome measures tools used were: Numeric Pain Rating Scale (NPRS) for evaluation of cervical and scapular pain intensity, (37) Neck Disability Index Questionnaire (NDI) which is an item-based questionnaire having 10 questions. Each question has 6 possible answers. Score of each question lies between 0 - 5, where score of 0 indicates no pain or limitation in activity and score of indicate worst pain possible or maximum activity limitation. Goniometer for measuring Cervical ROMs (38), Isometric Scapular Pinch Test (ISPT) where the patient is asked to perform active scapular retraction to its maximum and is asked to hold it for 20 seconds. The test is

considered positive if the patients complains of pain or patient fails to hold it for 15-20 seconds(27). and Lateral Scapular Slide Test (LSST).

Table 1. Detailed Intervention Protocol

Bowen Technique(34, 36)	Myofascial Release(2)
<p>Patient position: Lying</p> <p>Application: -Place thumb on affected side muscle. Hook thumb on lateral muscle edge to apply pressure. Take a pause. Thumb flattens in a medial direction. A pop/pluck is felt in the muscle.</p> <p>Treatment time: 20 mins.</p> <p>Sets of 15-20 Bowen moves are applied on all trapezius fibers. 2 mins gap between each set is given.</p> <p>The treatment was given for 3 consecutive days</p>	<p>Patient position: Lying</p> <p>Therapist position: Standing on effected side/back of patient.</p> <p>Application: MFR technique is applied through ulnar border of both the palms while patient's neck is held in a position of contralateral side flexion.</p> <p>Treatment time: 20 mins</p> <p>The treatment was given for 3 consecutive days</p>

SPSS version 21 was used for data entry and statistical analysis. Normality of data was checked by Shapiro-wilk test. The variables showing p-value more than 0.05 indicates that the data was normally distributed. Therefore, Independent t-test was used for between the group analysis and Paired t-test was used for with-in the group analysis.

3. RESULTS

There was a total of 42 participants, out of which 21 were in Group A and 21 were in Group 2. The mean age of the participants was 31.52 ± 6.901 years in total sample. In Group A, the mean age and SD was 31.14 ± 6.44 years and in Group B, the mean age and SD was 31.90 ± 7.48 years.

Among total participants of the study, there were 14 males (33.3%) and 28 females (66.7%). Out of total participants, 13 participants (31%) reported side involved to be right side, 9 participants (21.4%) reported left side involvement and 20 participants (47.6%) reported bilateral side of involvement. Based on trigger points (TrP) site, in 8 participants (19%) TrP site was upper fibers, 7 participants (19%) reported Trp in middle fibers, 15 participants (19%) reported TrP in both Upper and middle fibers and 12 participants (28.6%) reported TrP in all three Upper, middle, and lower fibers.

In group-wise frequency distribution, Group A included 7 males (33.3%) and 66.7% 14 females (66.7%) participants. In group A, right side was involved in 7 participants (33.3%), left side was involved in 5 participants (23.8%) and bilateral sides were involved in 9 participants (42.9%). In TrP site frequency distribution, Group A had 2 participants (9.5%) with TrPs in Upper fibers, 3 participants (14.3%) with TrPs in middle fibers, 10 participants (47.6%) with TrPs in upper and middle fibers and 6 participants (28.6%) with TrPs in Upper, middle, and lower fibers. (Table-5)

Whereas in group B, male participants were 7 (33.3%) and female participants were 14 (66.7%). 6 participants (28.6%) showed involvement of right side, 4 participants (19.0%) showed involvement of left side and 11 participants (52.4%) showed bilateral side involvement. Upper fibers TrPs were present in 6 participants (52.4%), Middle fiber TrPs were present in 4 participants (52.4%), upper and middle fiber TrPs were present in 5 participants (23.8%) and both upper, middle, and lower fiber TrPs were present in 6 participants (28.6%). (Table-5)

The data was homogenously distributed between the two groups. Therefore, Independent t-test was applied for between the group analysis. Paired t-test was applied for within the group analysis. For between the group analysis, mean difference of baseline and end-line values were calculated for each group and independent t-test was applied on the mean difference for each variable of group A and group B.

The comparison of mean difference values between the Group A and Group B shows that there is a significant difference in cervical Extension, Right & Left Cervical Rotation, Right & Left Cervical side-bending, NPRS, NDI, Retraction Hold Time, and Variation in ISPT where Group B has more improvement than Group A. However, there is on-edge significant difference between the two groups in Cervical flexion and no significant difference between the two groups in pain with ISPT.

In between the group mean-difference variable comparison, the mean \pm SD value of cervical flexion for group A was 7.904 ± 2.93 and for group B was 9.619 ± 2.97 with p-value 0.067. The mean \pm SD value of Cervical Extension for group A was 8.761 ± 2.28 and for group B was 13.619 ± 2.71 with p-value <0.001 . The mean \pm SD of Right Rotation for group A was 7.857 ± 2.26 and for group B was 10.523 ± 4.43 with p-value <0.001 . The mean \pm SD value of Left Rotation for group A was 7.429 ± 2.69 and for group B was 11.143 ± 4.53 with p-value 0.003. The mean \pm SD value of Right side-bending for group A was 6.095 ± 1.37 and for group B was 12.238 ± 1.76 with p-value <0.001 . The mean \pm SD value of Left side-bending for group A was 6.095 ± 1.76 and for group B was 11.904 ± 3.17 with p-value <0.001 .

The mean \pm SD value of NPRS for group A was -2.381 ± 0.49 and for group B was -3.619 ± 1.02 with p-value <0.001 . The mean \pm SD value of NDI for group A was -16.047 ± 5.20 and for group B was -23.85 ± 12.95 with p-value 0.016. The mean \pm SD value of pain with ISPT for group A was -2.238 ± 0.99 and for group B was -2.904 ± 1.76 with p-value 0.140. The mean \pm SD of Retraction Hold Time for group A was 4.00 ± 1.00 and for group B was 8.857 ± 1.79 with p-value <0.001 . The mean \pm SD of variation in LSST for group A was -0.176 ± 0.06 and for group B was -0.561 ± 0.11 with p-value <0.001 . The results show that there is significant difference (p-value = <0.05) in improvement of cervical ROMs, NDI, NPRS, Retraction Hold Time and Variation in LSST between the two groups where Group B showed more improvement than Group A. There is no significant difference between the two groups in improvement of Pain with ISPT. (Table-6)

The comparison of Baseline and end-line values of Group A shows a significant difference in p-value. The mean value (mean \pm SD) of cervical flexion at baseline was 35.71 ± 10.69 and at end-line was 43.62 ± 10.94 and p-value was <0.001 . The mean value (mean \pm SD) of cervical extension at baseline was 45.19 ± 9.87 and at end-line was 53.95 ± 10.55 and p-value was <0.001 . The mean value (mean \pm SD) of Right Rotation at baseline was 50.95 ± 14.13 and at end-line was 58.81 ± 14.47 and p-value was <0.001 . The mean value (mean \pm SD) of Left Rotation at baseline was 49.95 ± 13.67 and at end-line was 57.38 ± 14.59 and p-value was <0.001 . The mean value (mean \pm SD) of Right side-bending at baseline was 30.33 ± 7.80 and at end-line was 36.43 ± 7.97 and p-value was <0.001 . The mean value (mean \pm SD) of Left side-bending at baseline was 30.86 ± 9.19 and at end-line was 36.95 ± 9.12 and p-value was <0.001 .

The mean value (mean \pm SD) of NPRS at baseline was 7.86 ± 1.01 and at end-line was 5.48 ± 1.25 and p-value was <1.001 . The mean value (mean \pm SD) of NDI at baseline was 56.24 ± 16.92 and at end-line was 40.19 ± 17.46 and p-value was <0.001 . The mean value (mean \pm SD) of pain with ISPT at baseline was 4.38 ± 2.84 and at end-line was 2.14 ± 2.71 and p-value was <0.001 . The mean value (mean \pm SD) of Retraction hold time at baseline was 10.76 ± 3.40 and at end-line was 14.76 ± 3.50 and p-value was <0.001 . The mean value (mean \pm SD) of variation in LSST at baseline was 1.38 ± 0.43 and at end-line was 1.02 ± 0.43 and p-value was <0.001 . The results showed that there is a significant difference in baseline and end-line values of Group A. (Table-7)

The comparison of Baseline and end-line values of Group B shows a significant difference in p-value (p-value= <0.05). In group B, the mean value (mean \pm SD) of cervical flexion at baseline was 35.71 ± 10.68 and at end-line was 45.33 ± 9.81 and p-value was <0.001 . The mean value (mean \pm SD) of cervical extension at baseline was 48.00 ± 11.66 and at end-line was 61.62 ± 10.28 and p-value was <0.001 . The mean value (mean \pm SD) of Right Rotation at baseline was 50.71 ± 13.16 and at end-line was 61.24 ± 12.77 and p-value was <0.001 . The mean value (mean \pm SD) of Left Rotation at baseline was 51.90 ± 13.79 and at end-line was 63.05 ± 13.39 and p-value was <0.001 . The mean

value (mean \pm SD) of Right side-bending at baseline was 30.57 ± 8.94 and at end-line was 42.81 ± 8.71 and p-value was <0.001 . The mean \pm SD of Left side-bending at baseline was 31.24 ± 8.47 and at end-line was 43.14 ± 8.34 and p-value was <0.001 .

The mean \pm SD of NPRS at baseline was 7.67 ± 1.02 and at end-line was 4.05 ± 1.24 and p-value was <0.001 . The mean value (mean \pm SD) of NDI at baseline was 56.00 ± 19.61 and at end-line was 32.14 ± 15.63 and p-value was <0.001 . The mean \pm SD of pain with ISPT at baseline was 4.43 ± 2.58 and at end-line was 1.52 ± 2.4 and p-value was <0.001 . The mean \pm SD of Retraction hold time at baseline was 8.86 ± 2.31 and at end-line was 17.71 ± 3.28 and p-value was <0.001 . The mean value (mean \pm SD) of variation in LSST at baseline was 1.52 ± 0.38 and at end-line was 0.96 ± 0.38 and p-value was <0.001 . The results showed that the difference between baseline and end-line of Group is significant. (Table-7)

Table 3: Demographics of Data

Variable	Total Mean \pm SD	Group A: Bowen Mean \pm SD	Group B: MFR Mean \pm SD
Age (years)	31.52 ± 6.901	31.14 ± 6.44	31.90 ± 7.48

Table 4: Frequency Table of Data

Sr. No.	Variables	Frequency (%)
1.	Gender	Male
		14 (33.3%)
2.	Side Involved	Female
		28(66.7%)
		Right
		13 (31.0%)
3.	TrP Site	Left
		9 (21.4%)
		Bilateral
		20(47.6%)
		Upper Fibers
		8(19.0%)
		Middle Fibers
		7(16.7%)
		Upper + Middle fibers
		15(35.7%)
		Upper + Middle + Lower fibers
		12(28.6%)

Table 5: Frequency Distribution of Group A and Group B

Variables		Group A: Bowen Frequency (%)	Group B: MFR Frequency (%)
Gender	Male	7(33.3%)	7(33.3%)
	Female	14(66.7%)	14(66.7%)
Side Involved	Right	7(33.3%)	6(28.6%)
	Left	5(23.8%)	4(19.0%)
	Bilateral	9(42.9%)	11(52.4%)
TrP Site	Upper Fibers	2(9.5%)	6(28.6%)
	Middle Fibers	3(14.3%)	4(19.0%)
	Upper + Middle fibers	10(47.6%)	5(23.8%)
	Upper + Middle + Lower fibers	6(28.6%)	6(28.6%)

Sr. no.	VARIABLES MEAN DIFFERENCE (End-line- Baseline)	GROUP A: BOWEN Mean \pm SD	GROUP B: MFR Mean \pm SD	P-VALUE
1.	Cervical Flexion	7.904 ± 2.93	9.619 ± 2.97	0.067
2.	Cervical Extension	8.761 ± 2.28	13.619 ± 2.71	<0.001
3.	Right C. Rotation	7.857 ± 2.26	10.523 ± 4.43	<0.001
4.	Left C. Rotation	7.429 ± 2.69	11.143 ± 4.53	0.003
5.	Right Side-bending	6.095 ± 1.37	12.238 ± 1.76	<0.001
6.	Left Side-bending	6.095 ± 1.76	11.904 ± 3.17	<0.001
7.	NPRS	-2.381 ± 0.49	-3.619 ± 1.02	<0.001
8.	NDI	-16.047 ± 5.20	-23.85 ± 12.95	0.016
9.	Pain with ISPT	-2.238 ± 0.99	-2.904 ± 1.76	0.140
10.	Retraction Hold Time	4.00 ± 1.00	8.857 ± 1.79	<0.001
11.	LSST variation	-0.176 ± 0.06	-0.561 ± 0.11	<0.001

Table 6: Independent T-Test for Between Group Analysis

Sr. no.	VARIABLES	GROUP	BASELINE	END-LINE	P-VALUE
1.	Cervical Flexion	Bowen	35.71±10.69	43.62±10.94	<0.001
		MFR	35.71±10.68	45.33± 9.81	<0.001
2.	Cervical Extension	Bowen	45.19± 9.87	53.95±10.55	<0.001
		MFR	48.00±11.66	61.62±10.28	<0.001
3.	Right C. Rotation	Bowen	50.95±14.13	58.81±14.47	<0.001
		MFR	50.71±13.16	61.24±12.77	<0.001
4.	Left C. Rotation	Bowen	49.95±13.67	57.38±14.59	<0.001
		MFR	51.90±13.79	63.05±13.39	<0.001
5.	Right C. Side-bending	Bowen	30.33± 7.80	36.43± 7.97	<0.001
		MFR	30.57± 8.94	42.81± 8.71	<0.001
6.	Left C. Side-bending	Bowen	30.86± 9.19	36.95± 9.12	<0.001
		MFR	31.24± 8.47	43.14± 8.34	<0.001
7.	NPRS	Bowen	7.86± 1.01	5.48± 1.25	<0.001
		MFR	7.67± 1.02	4.05± 1.24	<0.001
8.	NDI	Bowen	56.24±16.92	40.19±17.46	<0.001
		MFR	56.00±19.61	32.14±15.63	<0.001
9.	Pain with ISPT	Bowen	4.38± 2.84	2.14± 2.71	<0.001
		MFR	4.43± 2.58	1.52± 2.4	<0.001
10.	Retraction Hold Time	Bowen	10.76± 3.40	14.76± 3.50	<0.001
		MFR	8.86± 2.31	17.71± 3.28	<0.001
11.	LSST variation	Bowen	1.38± 0.43	1.20± 0.43	<0.001
		MFR	1.52± 0.38	0.96± 0.38	<0.001

Table 7: Paired t-test for within group analysis

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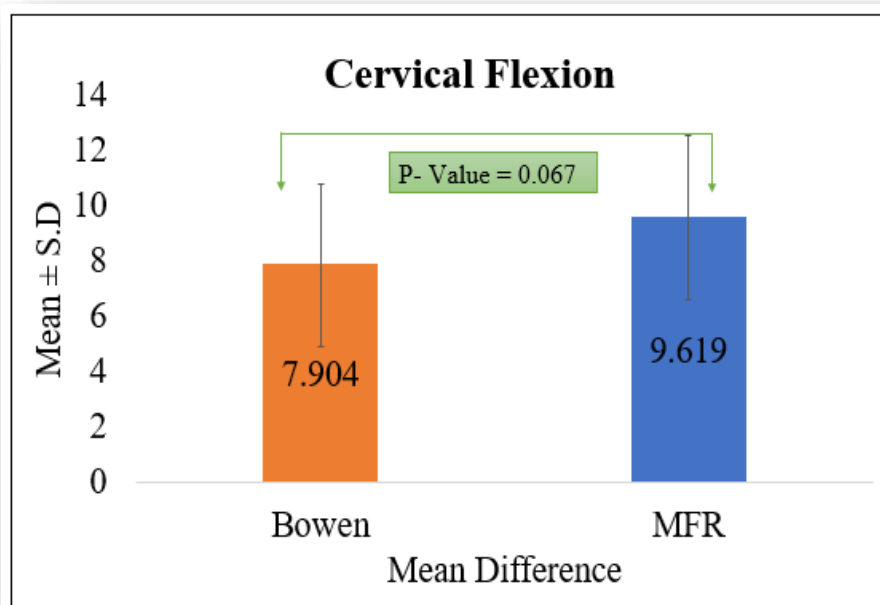


Figure 6: Between Group Comparison of Cervical Flexion

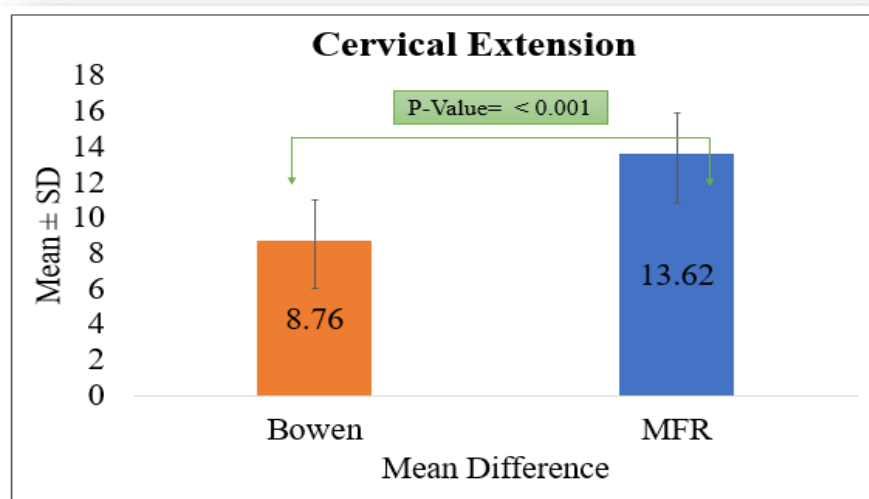


Figure 7: Between group Comparison of cervical Extension

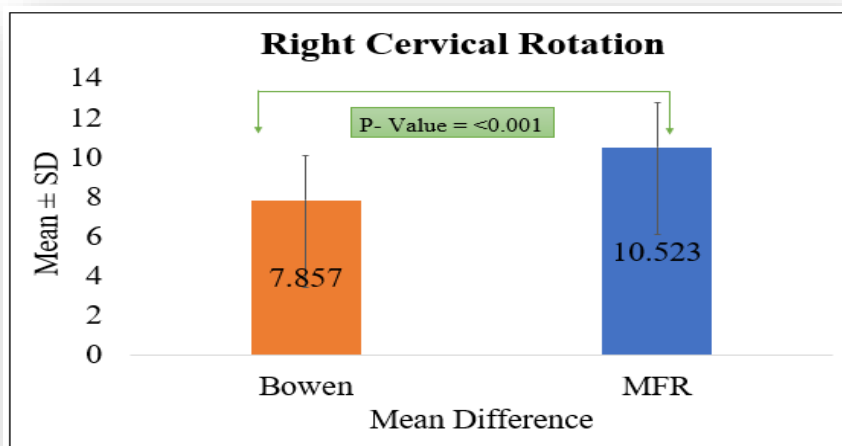


Figure 8: Between Group Analysis of Right Cervical Rotation

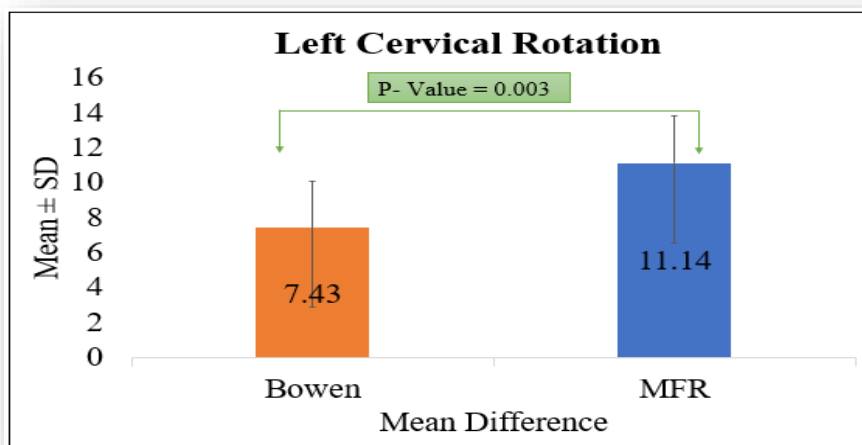


Figure 9: Between Group Analysis of Left Cervical Rotation

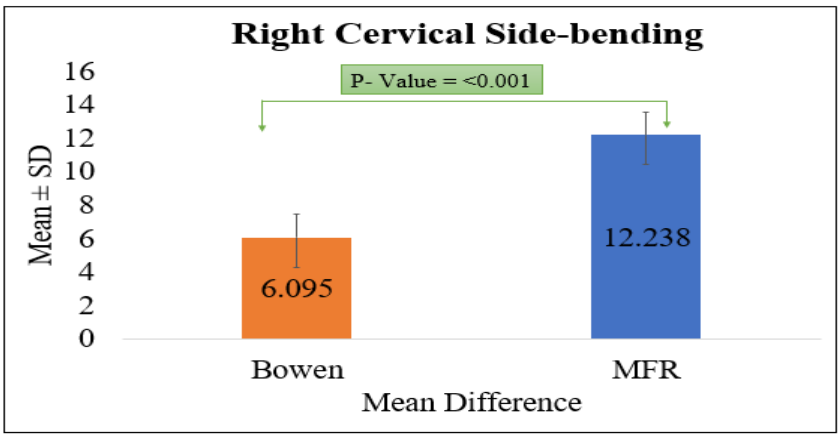


Figure 10: Between group Comparison of Right Side-bending

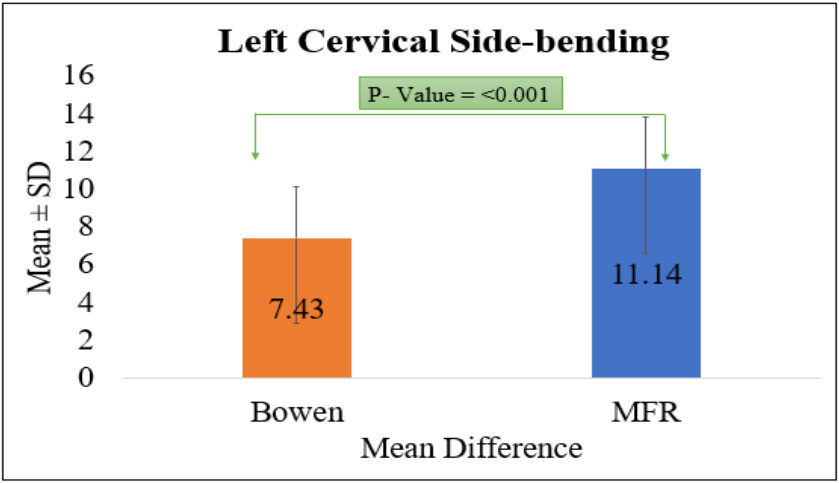


Figure 11: Between Group Comparison of Left Side-bending

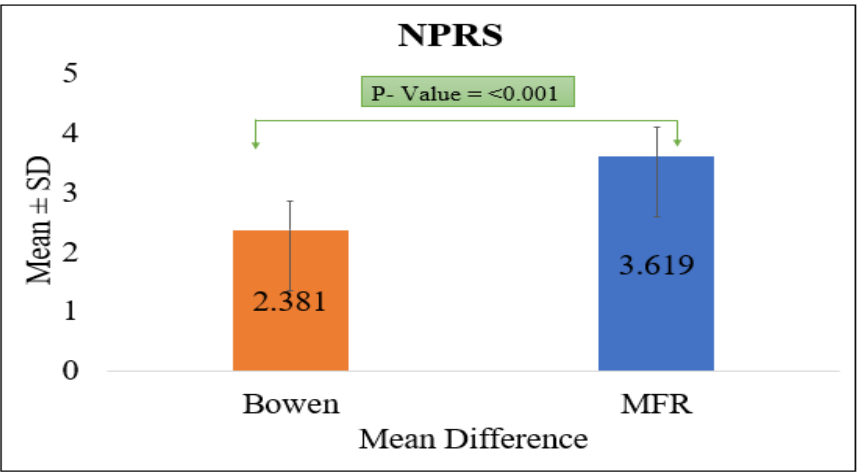


Figure 12: Between Group Comparison of NPRS

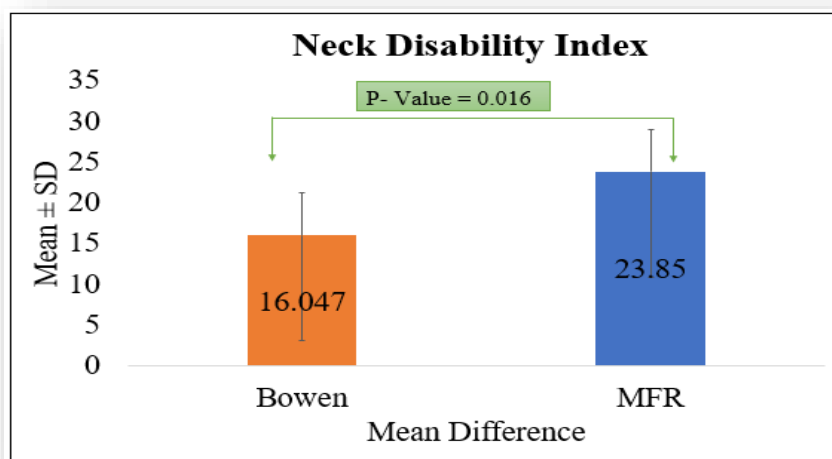


Figure 13: Between group comparison of NDI

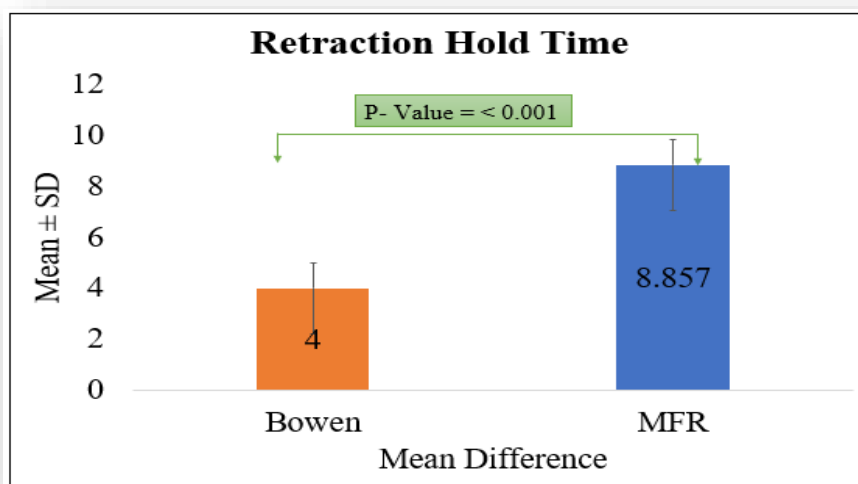


Figure 14: Between Group Comparison of Retraction Hold Time

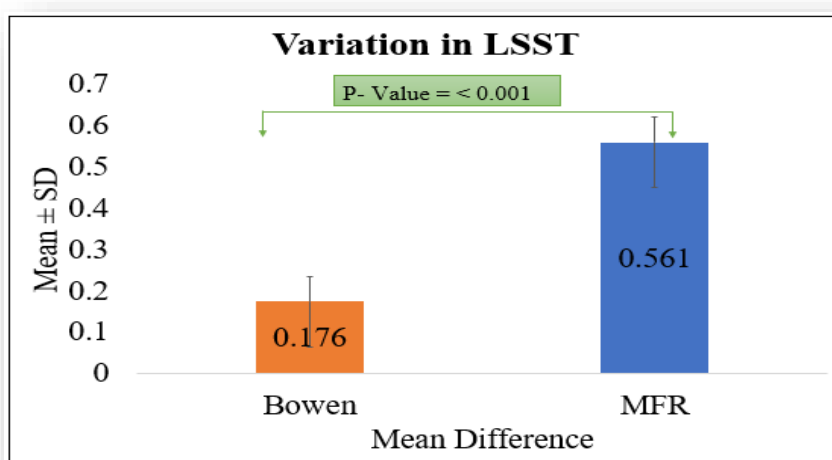


Figure 15: Between Group Compariosn of LSST Variation

DISCUSSION

The current study was principally designed to compare the short-term effectiveness of Bowen technique and MFR on neck pain, cervical ROMs and disability trapeztitis patients. It was also aimed to see the effects of both the techniques on scapular motion and position. Within the group analysis showed both the techniques to be effective in decreasing neck pain and increasing Cervical ROMs, Neck disability and scapular motion. Between the group analysis showed significant difference between effectiveness of MFR and Bowen Technique on most of the outcome measures i.e. Cervical ROMs, NPRS, NDI, Retraction Hold Time and Variation in LSST where MFR was more effective than Bowen technique.

Bowen technique is a gentle soft tissue technique that involves cross- fiber movements called Bowen moves to release any tension in fascia. (35) Bimal Kumar, J in 2017 compared the effectiveness of Bowen technique with METs on hamstring tightness and concluded Bowen technique to be more effective than METs in improving Range of motion and hamstring flexibility (35). Aneri Jhaveri, Dr. Payal Gahlo conducted a study to compare the effects of MFR with METs in chronic trapeztitis. The conclusion of their study was that MFR significantly improves the neck pain, cervical disability and cervical ROMs.(2) On comparison of baseline and end-line outcome measures of both groups, the results of present study also confirms the effectiveness of Bowen technique and MFR in Improving cervical ROMs, where MFR has shown greater improvement in Cervical ROMs.

A study done to determine the effectiveness of Bowen technique in treatment of Low back pain concluded it be effective in improving lumbar ROMs, decreasing pain and improving general health satisfaction. Another study conducted by. mishra, et. el. compared MFR with Active Release Technique and established the effectiveness of MFR in improving neck disability, cervical ROMs and decreasing pain in patients with upper trapezius spasm (24). The results of present study also come in agreement with conclusion of previous literature and shows both the MFR and Bowen techniques to be effective in decreasing neck pain. Although MFR proves to be more effective than Bowen in decreasing pain on NPRS.

Myofascial Release technique is a non-invasive soft-tissue mobilization technique. Laimi, K., et al in 2018 proposed that due to the stretch and pressure applied over Trp, there is blanching of the inflamed area or nodule which is followed by sudden hyperemia when pressure is released. Thus, MFR improves pain, disability and ROMs when they are applied over TrPs (30). A study done to find out the treatment effects of Bowen therapy along with adjunct physiotherapy protocol proposed that the Bowen technique is efficacious in decreasing neck disability in acute trapeztitis (34).

The above proposal is consistent with the results of the study conducted by mishra, daxa; prakash, r. harihara; mehta, jigar; dhaduk, Ankita to compare MFR with Active Release Technique. The study established the effectiveness of MFR in improving neck disability, cervical ROMs and decreasing pain in upper trapezius spasm (24). The present study also provides the evidence for effectiveness of MFR and Bowen technique in improving Neck disability in trapeztitis patients where MFR proved to be more effective than Bowen.

A study conducted in 2017 to determines the effects of Bowen technique in pressure pain threshold and postural sway suggested significant improvement in postural control and pain threshold in subjects.(39) Another study done on hamstring tightness subjects to compare the effects of Muscle Energy Techniques with Bowen Technique supported the effectiveness of Bowen Technique In improving muscle strength and Muscle flexibility (35). The present study also shows improvement in the pain in ISPT, increase in Retraction hold time and decrease in variation in LSST in group A thus referring to improvement in the scapular motion and position due improved trapezius muscle strength and flexibility.

The present study also supports the result of study done by Vijay Kage , Pavan Joshi in 2017, who concluded MFR to be more effective than Sub-occipital release in improving pain, functional disabilities and tender points in subjects with non-specific neck pain.(40) When comparing the outcome measures, the current study showed MFR to be effective in Increasing Retraction Hold

time and decreasing pain with ISPT and Variation in LSST which indicated an improvement in scapular kinematics. Thus, the current study is also in conformity with the existing literature regarding short-term effectiveness of Bowen and MFR technique on Neck pain, Neck disability, Cervical ROMs, and Scapular motion.

CONCLUSION

The study concluded both MFR and Bowen Technique are effective in decreasing pain and improving Cervical ROMs, Neck disability and scapular motion. There is a significant difference between the effectiveness of two techniques on Cervical ROMs, cervical Pain, Neck disability and Scapular motion and position. MFR is more effective than Bowen's technique in improving the outcome measures.

5.1. LIMITATIONS OF THE STUDY

- The sample size of the study could not meet the calculated sample size due to prevailing COVID conditions and lockdown.
- The classification of participants based on the severity of trapezitis (mild, moderate, severe) was not done.

5.2. RECOMMENDATIONS

- Further studies should be conducted in different body regions and in different musculoskeletal conditions to establish the effectiveness of Bowen's technique in wider clinical practice.
- The studies should be conducted to elaborate the physiologic mechanism of action of Bowen's technique in detail.

Conflict of Interest: Nill

Funding: Nill

Ethical Approval: The study was approved from IRB Committee of the University

Permission to Publication: Not Applicable

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