COMPARISON OF DYNAMIC SOFT TISSUE MOBILIZATION AND MYOFASCIAL RELEASE FOR MECHANICAL NECK PAIN.

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ABSTRACT

Background: Neck pain is very common condition and large population faces this problem all over world. Having prevalence of 27 per thousand population. Repetitive flexion of neck during studying, sitting, using cell phones were associated with mechanical neck pain. Physical inactivity also causes pain. Working in posture with poor ergonomics, time of work are the important components of mechanical neck pain. Along with computer related work; psychological stress, and prolonged static load20 also plays role in inducing mechanical neck pain. Neck pain is very common condition and large population faces this problem all over world. Repetitive flexion of neck during studying, sitting, using cell phones were associated with mechanical neck pain. **Method:** Participants were selected according to inclusion and exclusion criteria and written consent was taken by participants. Participants were informed about the procedure and its importance and benefit for them. The study was conducted at D. Y. Patil hospital in physiotherapy OPD. Total54 participants participated in the study with mechanical neck pain and they were divided into three groups containing 18 each by simple random sampling. Pretreatment assessment was taken consisting of pain; ranges of cervical flexion, extension, lateral flexion, rotation and disability score. **Result:** To compare the groups before and after, a paired t test was employed. Individual group pre and post values were determined for NPRS, ranges, and NDI; within-group comparison results were significant. P value for group A, B, C was significant i.e. ($p = <0.05$)

Comparison between three groups was done by ANOVA. For group C there was significant difference seen in NPRS score, range of motion and NDI. For NPRS while comparing between three groups mean value of group C was comparatively low. In range of motion group C showed high mean value and SD Considering NDI scores mean value and SD for this outcome measure was found to be lowest in C group as compare to A and B Pair wise comparison between groups was done using Tukey- Post hoc test. **Conclusion:** Study concludes that myofascial release technique is effective in reducing pain, improving ranges and improving functional ability when compared to dynamic soft tissue mobilization and conventional therapy in patients with mechanical neck pain. Thus alternate hypothesis is accepted.

KEYWORDS: Dynamic soft tissue mobilization, myofascial release technique, mechanical neck pain, Neck disability index, range of motion

INTRODUCTION

Neck pain is very common condition and large population faces this problem all over world. Having prevalence of 27 per thousand population[1]. Repetitive flexion of neck during studying, sitting, using cell phones were associated with mechanical neck pain[2]. Physical inactivity also causes pain. Working in posture with poor ergonomics, time of work are the important components of mechanical neck pain[3]. Along with computer related work; psychological stress, and prolonged static load also plays role in inducing mechanical neck pain[4].

Structure of cervical spine-

Cervical spine is the most mobile region of spine consisting of seven vertebrae consisting of typical and atypical type. Structure of vertebra consists of vertebral body, pedicles, lamina, spinous process, vertebral foramen, transverse process. First vertebra is atlas and second is axis. C1 and C2 form a unique articulations and thus have greater mobility of neck. Skull rests on C1 vertebra and forms joint with C2 which is pivot type of joint. Nearly about 50% of nodding movement i.e. flexion and extension takes place at C1 and skull while most of rotation occurs at C1and C2[5]. Cervical spine is more mobile than thoracic and lumbar region. Unlike other parts of spine cervical ha transverse foramina from which vertebral artery passes. Vertebral body of othertypical vertebra are small with transverse diameter greater. Vertebral body compose of cancellous bone covered by cortical thin layer. Cervical vertebra has unique structure called uncinate process projecting out[6]. An enormous, triangular vertebral foramen is present. Bony structures- Pedicles are short and projects posteriorly. While lamina are long narrow and thinner which spinous process are short and projects posteriorly from junction of lamina. Articular facetsare flat and oval. Transverse processes are short and forms passage for artery.

Vertebrae of cervical spine-

Atlas- The atlas, the initial cervical vertebra, the occiput of the head, and the axis interact with one another. Superior articular facet forms with articulation of occipital condyle and an inferior articular facet forarticulation with C2. Consist of anterior arch, postrerior arch and lateral masses. It is first bone of the vertebral column, which is the connection between the skull and the spine. Along with supporting the weight of the skull, it also controls the head's range of motion and movement and serves as the point of attachment for several muscles and ligaments that plays crucial role in head movements[7].

Axis- The axis (C2) is easily identifiable due to its special characteristic i.e. dens which extends superiorly from the anterior portion of the vertebra. It is located in the superior part of the cervical spine below atlas or C1 vertebra, and above the third cervical vertebra or C3. The dens articulates with the atlas anterior arch to produce the medial atlanto axial joint, which facilitates head rotation. Vertebral body, transverse process, and dens make up the anterior components.

Muscles of cervical spine-

Neck muscles help in stabilizing cervical spine and head and perform movement of head and neck[8].

Anterior neck muscles- Superficial Muscles - Platysma, Sternocleidomastoid Suprahyoids - Digastric, Mylohyoid, Geniohyoid, Stylohyoid Infrahyoids - Sternohyoid, Sternothyroid, Thyrohyoid, Omohyoid

Deep Cervical Flexor- The Anterior Capitis Rectus Lateralis Capitis Rectus, Longus Colli and Longus Capitis **Lateral neck muscles –** Scalene- Anterior, Middle, Posterior

Posterior neck muscles-Splenius Capitis, Splenius Cervicis.

Suboccipital Group - Rectus Capitis Posterior Major,Rectus Capitis Posterior Minor,Obliquus Capitis Inferior, Obliquus Capitis Superior.

Transversospinalis Muscles -Semispinalis Capitis, Semispinalis Cervicis, Rotator Cervicis, Multifidus. The cervical vertebrae are unique from other vertebrae in three key ways: Triangular vertebral foramen, Bifid spinous process, Transverse foramen where vertebral artery, symphathetic nerve houses[3].

Movements- Movements which take place at cervical spine are flexion, extension, lateral flexion and rotation[9]. Flexion which is nearly about 50°-60° and extension about 60°-65°[9] which takes place in sagittalplane and around frontal axis. Whereas lateral flexion is considered nearly 40°-45° occuring infrontal plane and sagittal axis and cervical rotation which is nealy75°-80° occuring at horizontalplane and vertical axis.

Muscle and action[9] The rectus capitis, longus colli, sternocleidomastoid, and scalene anterior are the neckflexors.

Neck extensors- levator scapulae, splenius cervicis, splenius capitis, trapezius, erector spinae, rectus capitis posterior. Lateral flexors- scalene anterior, sternocleidomastoid, rectus capitis lateralis.

Cervical rotators- semispinalis cervicis, rectus capitis posterior major. **Assessment of mechanical neck pain**

Generalized pain in the neck caused by prolonged neck postures, neck movement, and pain felt whenthe cervical musculature is palpated without obvious pathology, together with limited motions, is known as mechanical neck pain. The history, objective examination, pain assessment, range of motion, and functional capacity are all included in the evaluation of mechanical neck discomfort. Additionally, specific tests such as the spurling test, endurance test, ULTT (upper limb tension test), and cranial cervical flexion test are carried out to ensure accurate diagnosis. The Numeric discomfort Rating Scale (NPRS) [10, 11] is used to quantify discomfort, the Goniometer is used to measure ranges, and the Neck Disability Index (NDI) is a tool for scoring functional abilities.

The numerical pain rating scale is an assessment tool used to gauge the degree of pain; it ranges from0 to 10, with 10 being the severe pain. NDI i.e. neck disability index is used to score disability of a person due to neck pain which means functional ability of a patient while suffering from neck pain in his daily activities[12,13,14]. Goniometer is a device which is used to measure ranges of joint all ranges including flexion, extension, lateral flexion and rotation are measured by goniometer[15]

Prolonged over activity of cervical muscles has found to be a cause of greater muscle fatiguability and reduction in strength and endurance of muscles, joint position sense and range of motion. Physiotherapy is the usually first management option for people with mechanical neck pain[16].Treatment includes mobilization, therapeutic exercises, stretching, traction, other modalities and patient education[17, 18]. According to recent research, soft tissue interventions can relieve neck pain right away. Soft tissue mobilization is very useful in treating soft tissue injuries and conditions [19]. It's a type of manual therapy useful in relaxing muscles, reducing scar tissues, stretching and relaxing fascia which will result in lengthening of fascia[20, 21]. Soft tissue injuries involving sprains, strains, tendinitis etc. are few examples of soft tissue injuries. Dynamic soft tissue mobilization is a manual therapy technique which consists of manual therapy along with combination of therapist delivered treatment and active participation of patient[21]. Dynamic soft tissue is a blend of traditional massage techniques with a dynamic element that lengthens muscles. It targets on web like fascia which in turn results in increase muscle mobility, increase blood flow and decreases pain and increase its functional ability. Dynamic soft tissue mobilization works to increase muscle length, effects on tight area in combination with classic massage and dynamic component[22]. It is a technique which identifies the target area to be treated and treatment is focused according to that target area. Myofascial release is manual application which decreases pain and improve function[23.] Muscle trigger points are mostly found in muscles like upper trapezius, levator scapulae, scalene which leads to mechanical neck pain[24]. Myofascial release is specific set of muscle and soft tissue stretching technique which is guided entirely by feedback from targeted tissue. Any limitation of muscle or fascia prevents efficient movement which causes pain[25]. Myofascial release along with conventional treatment is effective in relieving pain. Myofascial release generally involves slow sustained pressure to restricted fascia directly or indirectly. Fascia, or tough connective tissue, is found all over the body. Muscle is supported and surrounded by fascia throughout the body. Patients with myofascial pain syndrome benefit best from myofascial release technique[25].

Many other conditions like TMJ disorders, fibromyalgia, migrane headaches etc. can be treated by MFR [26, 27]. Muscle tightness restricts motion and shows deviations in alignment which can be relieved by MFR. Here we will see effect of dynamic soft tissue mobilization and MFR and its comparison on mechanical neck pain.

MATERIALS & METHODOLOGY

The study was carried out in the physiotherapy outpatient department of the Dr. D. Y. Patil Medical College Hospital and Research Institute in Kolhapur. Based on the inclusion and exclusion criteria, 48 subjects with acute and subacute mechanical neck pain were chosen for the study. **Inclusion criteria** All genders willing to participate, age group- 20-35years, acute and sub-acute mechanical neck pain diagnosed by certified Physiotherapist. **Exclusion criteria** Cervical spondylosis with radiculopathy, recent cervical fracture, recent trauma, whiplash injury, neoplasia, infectious, or inflammatory processes, Congenital anomalies, previous neck surgery, therapeutic intervention past one month.

PROCEDURE

Ethical clearance certificate was obtained. Participants were selected according to inclusion and exclusion criteria and written consent was taken by participants. Participants were informed aboutthe procedure and its importance and benefit for them. The study was conducted at D. Y. Patil hospital in physiotherapy OPD. Total 54 participants participated in the study with mechanical neck pain and they were divided into three groups containing 18 each by simple random sampling. Pretreatment assessment was taken consisting of pain; ranges of cervical flexion, extension, lateralflexion, rotation and disability score (as shown in fig). Pain was assessed using numerical pain rating scale while ranges were measured using universal goniometer and disability score was measured using neck disability index. Participants were randomly allocated in three groups using graphad software. Group A was treated by conventional physiotherapy treatment which consist of hot moist pack for ten minutes followed by stretching of levator scapulae, trapezius and sternocleidomastoid three repetitions with thirty seconds hold (as shown in fig).Group B was treated by giving Dynamic soft tissue mobilization where patient was in

prone lying position and deep longitudinal strokes were applied then again deep longitudinal strokes were applied to neck muscles while passively extending the neck and again same was done by asking patient to actively extend neck (as shown in fig).It was given 5 repetition with 20 sec rest. Along with this we added HMP for ten minutes and stretching for levator scapulae, trapezius and sternocleidomastoid was given sternocleidomastoid with three repetitions for thirty seconds hold. Group C was treated by Myofascial release technique Participants were in relaxed prone lying position and therapist perform it for 8min with 20 seconds rest time on neck muscles. Along with this we added HMP for ten minutes and stretching for levator scapulae, trapezius and sternocleidomastoid was given with three repetitions for thirty seconds hold. Pre and post stretching for all above muscles were given in all groups. Protocol was conducted for two weeks for three days per week. Total six sessions were given for each patient. After completion of treatment post treatment assessment like pain score, ranges of cervical spine and neck disability scores were taken. So post treatment again was measure using NPRS, NDI and goniometer and post values were recorded. Interpretation of this comparison between groups was done on basis of pre andpost treatment assessment. Statistical analysis was done using paired t test, ANOVA and Tukeys posthoc test and results were concluded accordingly.

RESULT

Pre and post comparison within group was done by paired t test. Within group comparison values were significant individual group pre and post values were calculated for NPRS, ranges and NDI.P value for group A, B, C was significant i.e. ($p = <0.05$) Comparison between three groups was done by ANOVA. For group C there was significant difference seen in NPRS score, range of motion and NDI. For NPRS while comparing between three groups mean value of group C was comparatively low. In range of motion group C showed high mean value and SD. Considering NDI scores mean value and SD for this outcome measure was found to be lowest in C group as compare to A and B. Pairwise comparison between groups was done using Tukey- Post hoc Test.

Table 1

Pre Post Comparison in Group A (By using paired t-test)

Group A		Time Point	Mean	S.D.	P-value
NPRS		Pre	5.89	2.17	1.64E-10*
		Post	4.33	2.20	
ROM	Flexion	Pre	31.11	2.59	3.97E-08*
		Post	34.28	2.99	
	Extension	Pre	36.22	4.01	3.05E-03*
		Post	38.56	3.24	
	Right Lateral Flexion	Pre	30.22	2.58	7.21E-09*
		Post	34.89	3.22	
	Left Lateral Flexion	Pre	27.67	3.34	3.78E-07*
		Post	30.44	2.55	
	Right Rotation	Pre	34.78	3.23	3.29E-12*
		Post	39.78	2.65	
	Left Rotation	Pre	35.22	3.54	1.52E-07*
		Post	40.28	1.53	
NDI		Pre	25.06	2.65	7.10E-09*
		Post	20.89	1.84	

(* indicates P-value (<0.05) is significant

Table 1. Represents analysis of group A where pre and post values of NPRS, ranges and NDI aregiven.

For **NPRS** pre mean and SD are (5.89, 2.17) and post values are (4.33, 2.20) with p valueobtained is 1.64E-10*

For range of motion-

Flexion- pre mean and SD value are (31.11,2.59) and post values are (34.28,2.99) with p value obtained is 3.97E-08*

Extension - pre mean and SD value are (36.22,4.01) and post values are (38.56,3.24) with p value obtained is 3.05E-03*

Lateral flexion right - pre mean and SD value are (30.22,2.58) and post valuesare (34.89,2.55) with p value obtained is 7.21E-09*

Lateral flexion left- pre mean and SD value are (27.67,3.34) and post values are (30.44,2.55) with p value obtained is 3.78E-07

Right rotation- right- pre mean and SD value are (34.78,3.23) and post values are (39.78,2.65) with p value obtained is 3.29E-12*

Left rotation left- pre mean and SD value are (35.42,3.54) and post values are (40.28,1.53) with p value obtained is 1.52E-07*

NDI - pre mean and SD value are (25.06, 2.65) and post values are (20.89, 1.89) with p valueobtained is 7.10E-09*

Table 2

Pre Post Comparison in Group B (By using paired t-test)

Group B		Time Point	Mean	S.D.	P-value
NPRS		Pre	6.33	1.68	1.78E-11*
		Post	4.17	1.54	
ROM	Flexion	Pre	34.56	5.36	1.79E-08*
		Post	46.11	3.61	
	Extension	Pre	32.06	7.11	1.37E-05*
		Post	46.28	5.07	
	Right Lateral Flexion	Pre	36.28	2.95	0.010*
		Post	38.89	2.76	
	Left Lateral Flexion	Pre	30.89	3.45	1.11E-12*
		Post	39.22	2.67	
	Right Rotation	Pre	43.67	3.03	1.50E-13*
		Post	50.33	3.07	

	Left Rotation	**Pre**	43.22	10.15	0.0003*
		Post	52.67	3.48	
NDI		**Pre**	25.50	4.46	1.46E-09*
		Post	16.50	2.92	

(* indicates P-value (<0.05) is significant)

Table 2. Represents – pre and post values of group B for NPRS, ranges and NDI consist of meanvalue, SD and p value of all measures.

P value- NPRS 1.78E-11*; flexion 1.79E-08*, extension 1.37E-05*, right lateral flexion 0.010*,left LF 1.11E-12*, right rotation 1.50E-13*, left rotation 0.0003*, NDI 1.46E-09*

Table 3

Pre Post Comparison in Group C (By using paired t-test)

Group C		Time Point	Mean	S.D.	P-value
NPRS		**Pre**	7.67	1.33	3.90E-14*
		Post	1.72	0.96	
ROM	**Flexion**	**Pre**	32.94	6.31	1.37E-10*
		Post	50.06	1.21	
	Extension	**Pre**	38.28	5.41	4.76E-09*
		Post	53.67	3.24	
	Right Lateral Flexion	**Pre**	30.22	4.53	1.10E-11*
		Post	45.17	1.54	
	Left Lateral Flexion	**Pre**	30.94	3.99	1.72E-12*
		Post	45.06	1.73	
	Right Rotation	**Pre**	45.33	4.55	1.25E-13*
		Post	57.22	3.51	

	Left Rotation	**Pre**	45.67	4.31	
		Post	57.50	3.42	3.13E-14*
NDI		**Pre**	24.83	4.60	
		Post	11.83	4.00	6.22E-13*

(* indicates P-value (<0.05) is significant)

Table 3, represents – pre and post values of group C for NPRS, ranges and NDI consist of meanvalue, SD and p value of all measures.

P value- NPRS 3.90E-14*; flexion 1.37E-10*, extension 4.76E-09*, right lateral flexion 1.10E-11*, left LF 1.72E-12*, right rotation 1.25E-13*, left rotation 3.13E-14*, NDI 6.22E-13*

Table 4

Between Group Comparison (By using ANOVA)

Outcome Measures		Group A		Group B		Group C		P-value
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
NPRS		4.33	2.20	4.17	1.54	1.72	0.96	0.000012*
	Flexion	34.28	2.99	46.11	3.61	50.06	1.21	2.01E-22*
	Extension	38.56	3.24	46.28	5.07	53.67	3.24	7.07E-15*
	Right Lateral Flexion	34.89	3.22	38.89	2.76	45.17	1.54	1.73E-15*

ROM	**Left Lateral Flexion**	30.44	2.55	39.22	2.67	45.06	1.73	1.32E-23*
	Right Rotation	39.78	2.65	50.33	3.07	57.22	3.51	8.87E-22*
	Left Rotation	40.28	1.53	52.67	3.48	57.50	3.42	6.92E-23*
NDI		20.89	1.84	16.50	2.92	11.83	4.00	4.09E-11*

(* indicates P-value (<0.05) is significant)

Table 4 represents; between group comparison of A, B, C with help of ANOVA

Where p values of each are as follows NPRS -0.000012*; flexion- 2.01E-22*, extension -7.07E-15*,right LF- 1.73E-15*, left LF- 1.32E-23*, right rotation- 8.87E-22*, left rotation-6.92E-23*, NDI-4.09E-11*

Table 5

Pairwise Comparison (By using Tukey-Post hoc Test)

Variable		Pairwise Comparison		Mean		Abs(Mean Diff)	P-value
		Group 1	Group 2	Group 2	Group 1		
NPRS		A	B	4.33	4.17	0.167	0.9504
		A	C	4.33	1.72	2.611	<0.0001
		B	C	4.17	1.72	2.444	<0.0001*
	Flexion	A	B	34.28	46.11	11.833	<0.0001*
		A	C	34.28	50.06	15.778	<0.0001*

ROM		B	C	46.11	50.06	3.944	0.0003*
	Extension	A	B	38.56	46.28	7.722	<0.0001*
		A	C	38.56	53.67	15.111	<0.0001*
		B	C	46.28	53.67	7.389	<0.0001*
	Right Lateral Flexion	A	B	34.89	38.89	4.000	0.0001*
		A	C	34.89	45.17	10.278	<0.0001*
		B	C	38.89	45.17	6.278	<0.0001*
	Left Lateral Flexion	A	B	30.44	39.22	8.778	<0.0001*
		A	C	30.44	45.06	14.611	<0.0001*
		B	C	39.22	45.06	5.833	<0.0001*
	Right Rotation	A	B	39.78	50.33	10.556	<0.0001*
		A	C	39.78	57.22	17.444	<0.0001*
		B	C	50.33	57.22	6.889	<0.0001*
	Left Rotation	A	B	40.28	52.67	12.389	<0.0001*
		A	C	40.28	57.50	17.222	<0.0001*
		B	C	52.67	57.50	4.833	<0.0001*
NDI		A	B	20.89	16.50	4.389	0.0002*
		A	C	20.89	11.83	9.056	<0.0001*
		B	C	16.50	11.83	4.667	<0.0001*

Table 5 represents – pairwise comparison using Tukey post hoc test. here comparison of all pair ofgroup is done like comparison A and B, A and C, B and C,

DISCUSSION

In our study we have compared treatment between three groups consisting of myofascial release technique, Dynamic soft tissue mobilization and conventional physiotherapy treatment According to statistical analysis all treatments given to group A, B, C were significant. There was significant difference seen in group C which was treated by myofascial release technique in comparison with other groups. Myofascial release technique is one of the effective technique which helps in relieving tightness of muscle by releasing fascia. Many studies shows its effect on tension type headache, nonspecific neck pain etc. According to Rafael lomas vega; myofascial release technique is better than multimodal program which includes ultrasound, TENS and massage in patients with neck pain. myofascial release technique has concluded as better treatment choice for neck pain independently when compared with multimodal program treatment.

Aarti welling and Peeyusha Nitsure: in their study included subjects with neck pain along with referred pain to unilateral limb with duration of less than one month concluded that myofascial release is not only effective on mechanical neck pain but also shows its effect on neck pain with radiating nature, here they included fifteen participants with neck pain along with radiating pain to unilateral upper limb with age group 20-25yrs and subjects were treated with gross MFR technique [28].

In study effectiveness of direct vs. indirect technique myofascial release in management of tension type headache conducted by Ajimsha concluded the effectiveness of direct vs indirect MFR in patients with tension type headache. Here subjects with tension type headache were selected and treated with direct MFR, indirect MFR and control intervention which consist of slow stroking withfinger pads. Outcome measures used in this study are NDI, NPRS and goniometer with excellent reliability (ICC = 0.88) for NDI and (ICC=0.67) for NPRS in patients with neck pain[29].

Effect of PIR vs MRT on pain, functional disability, range of motion, quality of life in managing

nonspecific neck pain where patients were treated for 2weeks and stated conclusion that PIR was much better in improving pain, disability, cervical ROM and quality of life than MRT. Zugui wuet.al studied effect of MFR in treating chronic low back pain which concluded that MFR has its excellent benefit on pain and physical function but study stated that MFR show no effects on balance, trunk mobility, mental health and quality of life in subjects with low back pain [45].

One of RCT shows effect of dynamic soft tissue mobilization technique on pain, improving flexibility when compared with PNF stretching on hamstring muscle tightness in subjects with osteoarthritis. DSTM plays major role in reducing pain as well as improving range of motion. Dynamic soft tissue mobilization is a structured technique where most affected area of tightness is focused and treated which helps in releasing tight tissue. According to one study dynamic soft tissue mobilization is effective than classic soft tissue mobilization in patients with hamstring tightness. DSTM is said to be better in relieving muscle tightness when compared with passive stretching which was found out to be effective in cricketers improving their performance.

In present study it is proved that MFR has an immediate significant effect on relieving neck pain andimproving range of motion of neck movements Dynamic soft tissue mobilization is not as beneficial as MFR but it is said to be beneficial than active release technique in terms of improving flexibility which was measured using sit and reach flexibility test. Bismas Das demonstrated that MRT is effective technique but proved less successful in comparison with soft tissue release techniques which were performed along superfiscial back line.

One of the study by Saroj kumar Yadav stated that effect of Bowen technique Versus DSTM on tightness of hamstring muscle where the change in DSTM was (7.133 + 1.383) with shift of 24.71% and for Bowens it was (11.233 + 3.148) with shift of 37.91% [31]. Study which aimed to found out effect of DSTM with retro walking on flexibility and dynamic balance in young collegiates. Statistical analysis stated improvement with p value of < 0.05 which proved that there is significant improvement in flexibility and dynamic balance.

One RCT concludes beneficial effect of muscle energy technique when compared with DSTM

in kabbadi players thus study proved that muscle energy technique shows more improvement; it is one of the commonly used technique having its positive impact on various conditions [32]. According to one study by syed shahzad and his collegues dynamic soft tissue mobilization is equally effective as proprioceptive neuromuscular stretching for hamstring tightness in patients with osteoarthritis. Studyincluded patients with osteoarthritis where one group was treated with PNF and other by DSTM withoutcome measures like active knee extension test, VAS, and knee injury and osteoarthritis outcome score (KOOS). In our study we found that dynamic soft tissue mobilization is effective in reducing pain, improving ranges of neck and decreasing NDI scores when compared with conventionalphysiotherapy.

CONCLUSION

Study concludes that myofascial release technique is effective in reducing pain, improving ranges and improving functional ability when compared to dynamic soft tissue mobilization and conventional therapy in patients with mechanical neck pain.

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