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Added effects of myofascial release on pain and disability in chronic mechanical low back pain

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ABSTRACT

Objectives

To study to find the added effects of myofascial release on pain and disability in Chronic Mechanical Low Back Pain.

Methods

The sample 40 was screened, of which 30 meeting the inclusion criteria were selected. Demographic data and pre examination was done using Oswestry disability index and modified modified schobers test. . Each subject received 9 sessions of treatment thrice a week for three weeks. Post examination was done after completion of 9 sessions. The results obtained from the statistical analysis of the this study supported the hypothesis which stated that myofascial realease is effective On Pain And Disability in chronic mechanical low back pain to reduce pain disability and improve lumbar mobility.

Results

Demographic statistical analysis of Oswestry Disability Index score and modified modified schobers test shows extremely significant improvement in pain related disability and also in Lumbar Flexion and Extension. ($P < 0.0001$)

Conclusion

From the Results of the present study we conclude that MFR can be included as an integral part of specific manual techniques in the management of chronic mechanical low back pain. MFR is effective in reducing pain and functional disability and improving lumbar spine mobility with chronic mechanical low back pain.

Keywords: *Myofascial Release, Chronic mechanical low back pain, Oswestry Disability Index, Modified Modified Schobers Test*

INTRODUCTION

Lumbar muscle spasms are involuntary contractions of the muscles of the lumbar region. Specific movements tend to aggravate pain, and muscle injury may bring with it a palpable muscle spasm. Anatomically, thoracolumbar fascia consists of three layers [1]. The anterior and middle layers arise from the transverse processes of the lumbar vertebrae and join together laterally, encompassing the quadrates lumborum while blending with the fascia of the transverses abdominis and internal oblique abdominis muscles [2]. This creates a direct connection between the bony spine and the deep abdominal muscles and appears to be an important relationship for the dynamic stabilization of the lumbar spine [3-5]. The reason for the pain is not so much the bulging disc itself but the fact that the back muscles are in spasm, usually on one side of the back [6-10]. This is why a person with this type of low back pain characteristically walks tilted over sideways and with great difficulty. Research has proven that fascia, like muscle, has the ability to contract and relax and plays a major role in mobility and stability of joints. Fascia acts as a tensegrity (tension and integrity) model where tension and resistance rely on each other for stability and function [11-13].

Myofascial Release is a specialised physical and manual therapy used for the effective treatment and rehabilitation of soft tissue and fascial tension and restrictions. By targeting specific areas of the fascial system, myofascial therapy can help prepare patients for more aggressive forms of strengthening, or provide pain relief for patients with restricted flexibility and movement, thus allowing patients to return to normal movement and greater function [14-16].

The non-specialized connective tissues forming the fascial planes of the back have received little attention. Myofascial abnormalities may lead to connective tissue fibrosis, increased tissue stiffness and further movement impairment which may contribute to LBP chronicity. As there are very few studies are conducted related to myofascial release therapy for paraspinal muscle spasm to reduce mechanical low back pain [17-20].

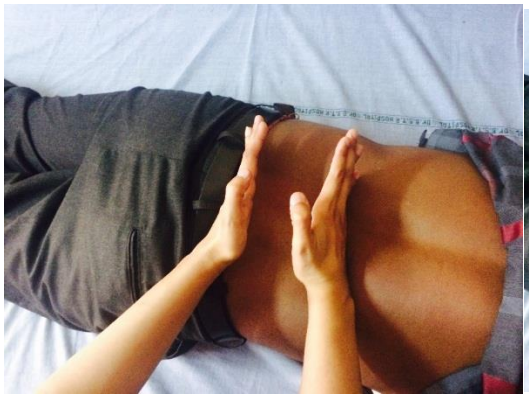
Therefore it is important to find out the added effects of MFR along with conventional treatment On Pain and Disability in Chronic mechanical low back pain.

METHODOLOGY

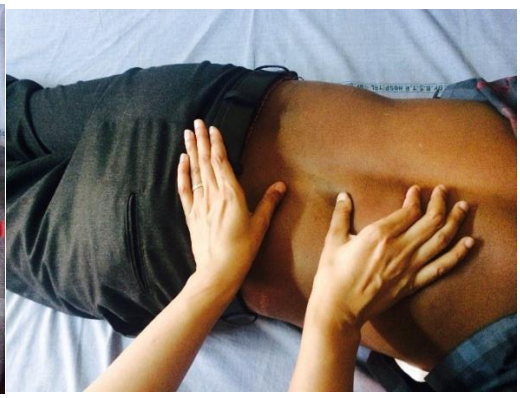
The type of study was Experimental Study with Simple Random Sampling. The Study was carried out at Bhau Sahib Sardesai Talegaon Rural Hospital on 30 subjects meeting following criteria (1)Diagnosed with low back pain by orthopedician (2)ODI score between 20-60% (Falling Under Minimal And Moderate Category (3)Age group of 20-40 years (male and female) (4)Ability to communicate and follow commands (5)Willing to participate. Exclusion criteria were Malignancy, Radiating Pain, Aneurysm, Acute Rheumatoid Arthritis, Advanced Diabetes, Severe Osteoporosis, Healing Fractures, Contagious Skin Diseases, Septic Joint, and Lack of Consent Form.

Procedure

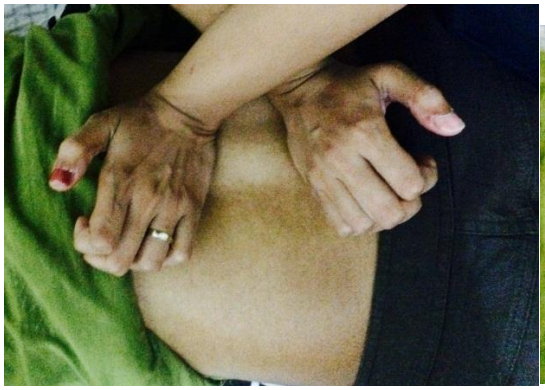
With the permission of principal madam and guidance of the guide, project was started. All procedure was explained to the subjects. Written consent was taken from subjects. The sample 40 was screened, of which 30 meeting the inclusion criteria were selected. Demographic data and pre examination was done. Subjects were assessed with Oswestry Disability Index and Modified-Modified Schobers Test. Each subject received 9 sessions of treatment thrice a week for three weeks. Post examination was done after completion of 9 sessions.



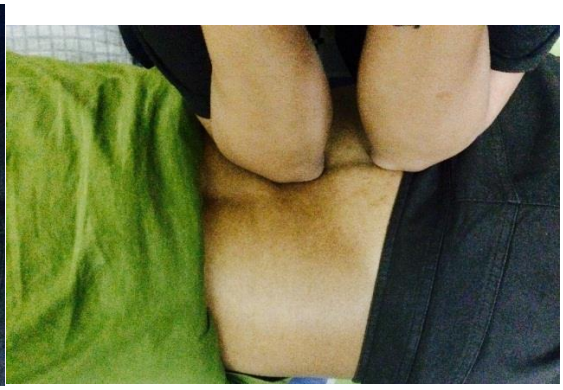
MFR with ulnar border technique



MFR with thumb pad technique



MFR with heel of the hands



MFR with elbows

Treatment Protocol

Conventional TENS given with Freq 150 hz, Duration 10 mins, Site- Paraspianl muscles of lumbar region. Static back and abs(Isometric) exercises, cat camel exercises, Bridging activities, knee to chest to improve muscular strength endurance to improve toning to decrease pain and to correct posture. Repetitions 10 with 10 seconds hold.

Core muscle strengthening- abdominal crunches, prone on elbows, transverse abdominis strengthening exercises with 10 repititions.

Transverse abdominis strengthening exercises- Lie flat on your back with your knees bent and your feet flat on the floor. Breathe in. As you breathe out, activate TA using above cues and let one knee straighten out with control. Breathe in and bend the knee back up so that your foot is again flat on the floor. Repeat with the other knee. Repeat 10 times.

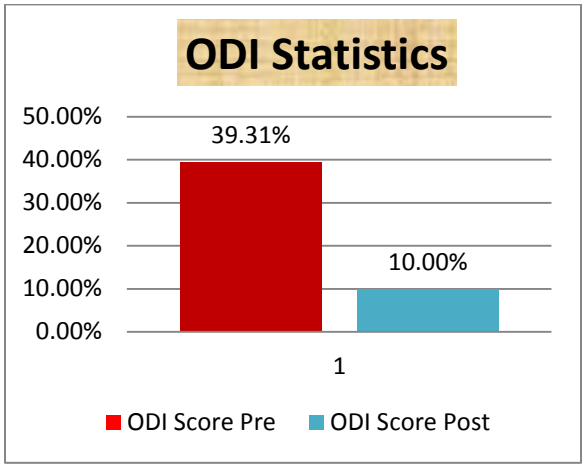
Myofascial release technique (Duration 20 mins): Cross hand release technique, ulnar border, Heel of the hands, on elbows, thumb pad technique. Stretch holding period - 10 to 15 seconds

Statistical analysis was done using paired t test.

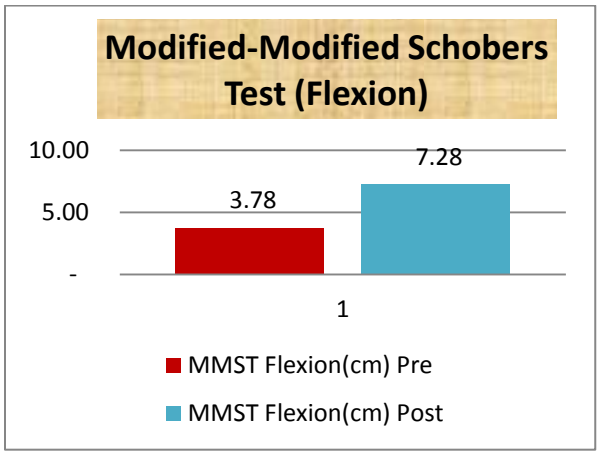
RESULTS

Demographic statistical analysis of Oswestry Disability Index score which shows extremely significant improvement pain related disability.

	Pre ODI	Post ODI	Difference
Mean	39.31%	10.00%	
Standard Deviation (SD)	2.812	1.856	1.985
P Value	< 0.0001		

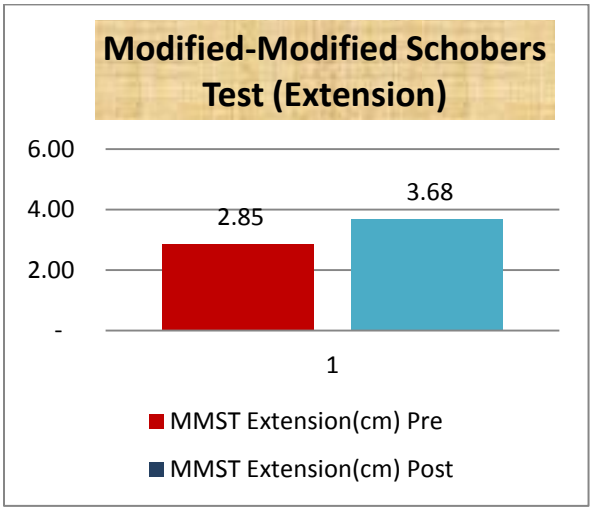


Sr. No	MMST Flexion(cm)	
	Pre	**Post**
Mean	3.78	7.28
Standard Deviation (SD)	0.5649	0.6254
P Value	< 0.0001	



P value < 0.0001, considered extremely significant

Sr. No	MMST Extension(cm)	
	Pre	**Post**
Mean	2.85	3.68
Standard Deviation (SD)	0.4158	0.3438
P Value	< 0.0001	



P value < 0.0001, considered extremely significant

DISCUSSION

The clinical trial was conducted to study the added effects of myofascial release On Pain and Disability in chronic mechanical low back pain to reduce pain disability and to improve lumbar mobility using oswestry disability index and modified modified schobers test.

The results obtained from the statistical analysis of the our study supported the hypothesis which stated that there will be effect of myofascial release On Pain And Disability in chronic mechanical low back pain to reduce pain disability and improve lumbar mobility.

Myofascial release therapy helps alter the scar tissue matrix by the redistribution of internal fluids, breakdown of restrictive intermolecular cross-links and elongation of collagenous tissue. It also helps in improving the vascular and lymphatic circulation. It helps in reducing the tone and pain which occurs due to deeper pathology. This could have been one of the factors contributing to the improvement noted to the components of Oswestry Disability Index like pain intensity, prolong sitting and standing and also quality of sleep.

Lumbar exercises concentrate on strengthening with the abdominal muscles, to be able to give stabilization of the spine. Rehabilitation programs or preventative rehabilitation programs that focus on strengthening lumbar muscles combined with core stability and proprioception reduces the risk of low back pain. **Ajimsha MS et al ….** In his research, MFR was used as an adjunct to specific back exercises is more effective than a control intervention for chronic mechanical Low Back Pain. The same result we have noted in our study as we treated subjects with the same core exercises like curl ups, bridging, transverse abdominal strengthening exercises, prone on elbows, knee to chest, cat-camel exercises.

Abdominal crunches given to the subjects strengthen the abdominal musculature by actively flexing the trunk through concentric muscle action, isometric contractions during the hold portion and eccentric muscle actions during the return to the starting position.

Subjects showed a statistical significant improvement in lumbar spine ROM after the intervention period in patient with CLBP. The improvement in ROM can be explained by reduction of pain and a proposed hypothesis by **Hong 1999**.

The findings of this study are looking forward to see MFR as an integral part of specific manual techniques directed at the low back muscles dysfunction. MFR are effective in reducing pain and functional disability and improving lumbar spine mobility in patients with CLBP.

Increasing in lumbar mobility is the resultant of combined findings of pain reduction and core muscle strengthening.

CONCLUSION

From the Results of the present study we conclude that MFR can be included as an integral part of specific manual techniques in the management of chronic mechanical low back pain. MFR is effective in reducing pain and functional

disability and improving lumbar spine mobility with chronic mechanical low back pain.

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REFERENCES

[1]. Effects of myofascial release techniques on pain, physical function, and postural stability in patients with fibromyalgia: Guillermo A Matarán-Peñarrocha, Manuel Arroyo- Morales, Manuel Saavedra-Hernández, Cayetano Fernández-Sola, Carmen Moreno-Lorenzo

[2]. Staud R, Price DD, Robinson ME, Vierck CJJr, Body pain area and pain-related negative affect predict clinical pain intensity in patients with fibromyalgia. J Pain 2004; 5: 338–343. Google Scholar Medline

[3]. Consensus Document on Fibromyalgia: the Copenhagen Declaration. J Musculoskel Pain 1, 1993, 295–312.

[4]. Jones KD, Horak FB, Winters-Stone K, Fibromyalgia is associated with impaired balance and falls. J Clin Rheumatol 15, 2009, 16–21. Google Scholar Medline

[5]. Chaitow L. Fibromyalgia syndrome. A practitioner's guide to treatment London: Churchill Livingstone, 2003, 9–9. Google Scholar

[6]. Bialosky JE, Bishop MD, Price DD, The mechanism of manual therapy in the treatment of musculoskeletal pain: a comprehensive model. Man Ther 14, 2009, 531–538. Google Scholar Medline

[7]. Liptan GL. Fascia: A missing link in our understanding of the pathology of fibromyalgia. J Bodyw Mov Ther 14, 2010, 3–12. Google Scholar Medline

[8]. Vleeming A, Mooney V, Stoeckart R. Movement, stability and lumbopelvic pain London: Churchill Livingstone, 2007, Google Scholar

[9]. Schleip R. Fascial plasticity – a new neurobiological explanation. J Bodyw Mov Ther 7, 2003, 104–116. Google Scholar

[10]. Arcos-Carmona IM, Castro-Sánchez AM, Matarán-Peñarrocha GA, Efectos de un programa de ejercicios aeróbicos y técnicas de relajación sobre el estado de ansiedad, calidad del sueño, depresión y calidad de vida en pacientes con fibromialgia: ensayo clínico aleatorizado. Med Clin (Barc) 2011DOI:10.1016/j, medcli.2010.09.045. Google Scholar Medline

[11]. Effectiveness of Myofascial Release in the Management of Chronic Low Back Pain in Nursing

[12]. Professionals MS Ajimsha et al. J Bodyw Mov Ther 18(2), 2013, 273-281.

[13]. Effects of myofascial release therapy on pain related disability, quality of sleep and depression in older adults with chronic low back pain b.arun. *professor, k.g.college of physiotherapy, k.g.hospital, coimbatore, tamil nadu, india. International Journal of Physiotherapy and Research, Int J Physiother Res 2(1), 2014, 318-23. ISSN 2321-1822

[14]. Hartvigsen J, Christensen K, Frederiksen H. Back pain remains a common symptom in old age. A population-based study of 4486 Danish twins aged 70–102. Eur Spine J. 12, 2003, 528–534.

[15]. Andersson GB. Epidemiological features of chronic low-back pain. Lancet. 354(9178), 1999, 581-5.

[16]. Knauer SR, Freburger JK, Carey TS. Chronic low back pain among older adults: a population-based perspective. J Aging Health. 22(8), 2010, 1213- 34

[17]. Helme R D, Gibson S.J. Pain in older people. In: Crombie, IK. editor. Epidemiology of Pain. Seattle: IASP 1999, 103-112.

[18]. Thomas E, Peat G, Harris L, Wilkie R, Croft PR. The prevalence of pain and pain interference in a general population of older adults: cross-sectional findings from the North Staffordshire Osteoarthritis Project (NorStOP) Pain. 110, 2004, 361–368.

[19]. Weiner DK, Haggerty CL, Kritchevsky SB, et al. How does low back pain impact physical function in independent, well-functioning older adults? Evidence from the health ABC cohort and implications for the future. Pain Med. 4, 2003, 311– 320.

[20]. Tiffany Fielda,b,, Maria Hernandez-Reifa , Miguel Diegoa , Monica Fraserc. Lower back pain and sleep disturbance are reduced following massage therapy. Journal of Bodywork and Movement Therapies 11, 2007, 141–145.

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