



A comparative study of efficacy of fascial release techniques [F.R.T] and modified muscle energy technique [M.M.E.T] in mechanical chronic low back pain

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Abstract

Background:

A major problem a human being suffers due to evaluation of spine is Low Back Pain. Almost every human Being on this earth suffers at least once from Low Back Pain in Life .

A key role in management and treatment of Low Back Pain is played by Physiotherapy and almost 30% of cases reporting in Physiotherapy Department are of LBA.

Objective:

The objective of this study is to find out the efficacy of Active isolated Stretch Technique And Therapeutic Kinesio Taping Technique with conventional physiotherapy in patients with Chronic Low back Pain.

Materials and Methods:

A total of 30 individuals between the ages of 40 and 60 were taken in this study having symptoms with chronic low back pain . with Inclusion Criteria 1.Chronic low back pain of more than 3 months with diagnosed iliopsoas tightness. 2Age groups—40 to 60 years. were taken in study. A prospective repeated-measures design was used to determine the efficacy of interventions during a 3 weeks program. and 4 weeks follow up.

Participants taken in study and were randomised into two different groups, designated as groups 1.Control Group and 2.Experimental Group

Results & Conclusions:

A comprehensive Evaluation of these results suggest that the inclusion of application of Active Isolated Stretch techniques in the physiotherapy regime is more effective and the Experimental Group Recovers Faster than the Control Group.

Key Words: A.I.S [Active Isolated Stretch] , K-T Kinesiology Tape, VAS Visual Analogue Scale , LBA [Low Back Ache]

Introduction

Low back pain in human is a major problem which occurs due to acquired lumber curve in human spine. Almost every human Being on this earth suffers at least once from Low Back Pain in Life.

Most of Back Pain occurs due to Mechanical reason and only 3% LBA in patients occur due to nontechnical reasons. We all know that further the Mechanical LBA Pain originates almost 97% due to soft tissue Problems.

LBA is the main cause for health problem in Modern society and it leads to social, Economical and Public health Problem in population at Large.

A key role in management and treatment of Low Back Pain is played by Physiotherapy and almost 30% of cases reporting in Physiotherapy Department are of LBA.

Inspite of Major part of Physiotherapy Department Patients are LBA Patients the treatment protocol and the therapeutic options are inconsistent and not very well accepted.

Physiotherapy plays a major role in the management of LBA. As many as one-fourth of the total number of patients referred to physiotherapy are of LBA.

Critical review of literatures reveals that Fascial Release and Muscle Energy Techniques or exercise are beneficial in patients suffering from chronic low back pain when applied as single-model treatment approaches.

But few studies have looked into the efficacy of Muscle Energy Technique or fascial Release Technique or Mayo-fascial Release Techniques of manual therapy on chronic low back pain and have found that theses techniques relieve pain and normalises function. Evidences suggests greater short-term pain relief from manual therapy than exercise alone,

Objective of study

The objective of this study is to compare the efficacy of fascial Release Technique [F.R.T] And Modified Muscle Energy Technique [M.M.E.T] in comparison with conventional physiotherapy in patients with Chronic Mechanical Low back Pain.

Materials and Methods

Subjects

A total of Active 300 individuals between the ages of 30 and 60 were taken in this study having symptoms with chronic low back pain were participated in this study.

Inclusion Criteria

1. Chronic low back pain of more than 3 months without any radiation to legs.
2. Age groups-30 to 60 years.
3. Sex-male and female.

Exclusion criteria

1. Prolapse with neurologic signs including radiating pain and symptoms requiring surgery.
2. Pregnancy and other gynaecological problems.
3. Spondylolisthesis.
4. Spondylolysis.
5. Suspicion of malignancy.
6. Osteoporosis.
7. Previous back surgery.
8. Known rheumatic, neurologic, or mental diseases.
9. Absence of pain aggravation on active, functional movement tests (i.e., indicating nonorganic symptoms).
10. Other red flags (contra-indications) to manual therapy.

In addition to the above exclusion criteria, subjects in either group should not have any signs or symptoms related to nerve root or cord pathology.

Variables

Independent Variables.

Independent Variables of This Study are

1. Passive Stretch.
2. Fascial release Technique. [F.R.T].
3. Modified Muscle Energy Technique [M.M.E.T].

Dependent Variables of This Study are

1. Average VAS (Visual Analogue Scale) for pain at rest and activity.
2. Patients Assessment Questionnaire.

A prospective repeated-measures design was used to determine the efficacy of interventions during a 4 weeks program and 8 weeks follow up.

Participants taken in study and were randomised into three different groups, designated as groups 1.Control Group 2.Experimental Group I and 3.Experimental Group II.

Tools used

1. Physical therapy Regime [Heat therapy + Interferential Therapy].
2. Passive Stretching of Lower Back Muscles [Piriformis, Quadrates Lumborum and Iliopsoas].
3. Fascial Release Techniques for Lower Back Region as per assessment Requirement.

4. Modified Muscle Energy Technique M.M.E.T for [Piriformis, Quadrates Lumborum and Iliopsoas] Depending on Assessment of patient's condition.
5. Visual Analogue Scale (VAS) VAS used in order to assess pain. Most widely and commonly used method given by Bond & Pilously (1966). The patient is presented with a strip of papers with a line 10 cm. long is used, where zero considered as, no pain and 10 as worst pain felt ever.

1	2	3	4	5	6	7	8	9	10
No pain			Moderate pain				Severe pain		

6. Patients Assessment Questionnaire

In Assessment questionnaire used in order to assess and record the data of the patient comprising history, physical examination and score record on follow up.

IV. Procedure

Procedure used for different treatment techniques were

1. Physiotherapy Regime [Hot Packs for 20 Minutes with Interferential Therapy for 20 minutes for all Groups.
2. Control Group Received Passive stretch for set of Lower Back Muscles.

Set of 3 passive stretch once per day for 4 weeks.

3. Experimental Group I Received Indirect Fascial Release Technique for Involved area for 20-30 minutes/per day for 4 weeks.
4. Experimental Group II received M.M.E.T for lower Back muscles as per M.M.E.T protocol that is 4 repetition 10 sec. hold with 20% strength of Contraction for each involved Muscle once/day For 4 weeks.
5. Pacific Medical University, Institute's ethical approval obtained dated 01/09/2021, PMU/ PMCH/IEC/2021/186A/13. All participants completed information and consent form at recruitment.

V. Data Collection

Patients were assessed for pain on day 1st, 7th, 15th and 30th.

These score were recorded on the questionnaire chart.

For pain assessment visual analogue scale was used.

Analysis and Results

In Table No. 1 a comparison of pain between control group and experimental group I shows, (M-7.85, 7.25), on 7th day in control group and experimental group 1 respectively, (t = 1.46, at non significance level of 0.05). On 15th day (M -7.6, 6.3, t-2.6, at the significance level of 0.02), whereas on 30th day mean is 7.45 and 5.75 respectively with t value of 2.8 at significance level of 0.02. This shows significant improvement in pain perception from 15th day after the application of physical therapy.

In Table No. 2 a comparison of pain between control group and experimental group II shows (M-7.85 5.8, t-4.59 at significance level of 0.001), on 7th day. On 15th day (M-7.6, 2.6, t-12.43 at statically significance level 0.001). Whereas on 30th day mean was 7.45 and 1.5 with t value of 17.12 at significance level of 0.001. This shows highly significant improvement in the pain condition due to application of physical therapy regime in experimental group II, better than control group.

Table 3 shows comparison of pain between experimental group I and experimental group II. On 7th day (M -7.25, 5.8, t-3.36, at significance level 0.01. On 15th day (M-6.3, 2.6, t-7.41, at significance level 0.001). Where as on 30th day mean was 5.75 and 1.5 with t value of 7.87 at significance level of 0.001. This table shows that experimental group II, improves better than experimental group 1.

Table 1: Comparison of pain between control group and experimental group I

Sr. No.	Control Group	Mean	S.D.	S.E.	Experimental Group I	Mean	S.D.	S.E.	t Value	Significance
1.	7 th day	7.85	1.35	0.30	7 th day	7.25	1.25	0.28	1.46	0.05
2.	15 th day	7.6	1.27	0.28	15 th day	7.3	1.84	0.41	2.6	0.02
3.	30 th day	7.45	1.43	0.32	30 th day	5.75	2.34	0.52	2.8	0.02

Table 2: Comparison of pain between control group and experimental group II

Sr. No.	Control Group	Mean	S.D.	S.E.	Experimental Group II	Mean	S.D.	S.E.	t Value	Significance
1.	7 th day	7.85	1.35	0.30	7 th day	5.8	1.47	0.33	4.46	0.001
2.	15 th day	7.6	1.27	0.28	15 th day	2.6	1.27	0.28	12.43	0.001
3.	30 th day	7.45	1.43	0.32	30 th day	1.5	0.61	0.14	17.12	0.001

Table 3: Comparison of pain between control group I and experimental group II

Sr. No.	Control Group	Mean	S.D.	S.E.	Experimental Group II	Mean	S.D.	S.E.	t Value	Significance
1	7 th day	7.25	1.25	0.28	7 th day	5.8	1.47	0.33	3.36	0.001
2	15 th day	6.3	1.84	0.41	15 th day	2.6	1.27	0.28	7.41	0.001
3	30 th day	5.75	2.34	0.52	30 th day	1.5	0.61	0.14	7.87	0.001

Conclusion

Evaluation of these results concludes that the inclusion of application of F.R.T/M.M.E.T techniques in the physiotherapy regime is more effective than the passive stretch and the study also suggests that the MMET Technique is more effective in reducing the pain in Chronic Low Back Pain patients than the F.R.T. Technique.

This study was aimed to demonstrate the acceleration in the recovery of patients with Mechanical Chronic low back pain. It would be interesting to ascertain that

- Whether, the recovery is permanent or transient.
- Whether, these results are affected by placebo effect or not.
- The study can be further extended for the athletes having acute low pack pain with radiating pain. Therefore, these are the interesting area which could form a basis for further research.

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