ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 11 | November - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

TO COMPARE THE EFFECT OF SLUMP STRETCH AND MUSCLE ENERGY TECHNIQUE ON PAIN AND DISSABILITY IN PATIENTS WITH NON-SPECIFIC LOW BACK PAIN

Physiotherapy

Darshi Joshi* Master Of Physiotherapy, Venus Institute Of Physiotherapy, Swarrnim Startup & Innovation University, Gandhinagar, Gujarat, India.*Corresponding Author

Dr. Nehansi Chauhan Master Of Physiotherapy In Neurological Conditions, Assistant Professor, Venus Institute Of Physiotherapy, Swarrnim Startup & Innovation University, Gandhinagar, Gujarat, India.

Dr. Arvind Kumar Chauhan Master Of Physiotherapy In Orthopedics, Mba, Ph.d., Principal & Professor, Venus Institute Of Physiotherapy, Swarrnim Startup & Innovation University, Gandhinagar, Gujarat, India.

ABSTRACT

Background : non specific low back pain is a common cause of pain and disability in adult population thus it need something more advance then basic holistic treatment approach, In all types and at all stages of LBP, rehabilitation is essential to reassure people and help them make sense of their pain, help them return to activities they enjoy and identify strategies to support recovery and improve function. Specialized care pathways may be needed for specific LBP. There are many studies done on individually on the effect of slump stretch and muscle energy technique but there is no specific evidence that which one is more effective or accurate and more beneficial treatment for low back pain, thus here we will be comparing slump stretch and muscle energy technique and will document the out come by using Visual analog scale and Oswestry disability index to evaluate pain and disability in patients having nonspecific low back pain. **Methodology:** The present student was conducted on people having non specific low back pain of 18-45 years of age. On basis of inclusion and exclusion criteria 60 subjects were selected and informed consent of each was taken. All the subjects were informed about the treatment technique performed on them for treatment of low back pain. After concent of subject general assessment including name age height weight BMI (body mass index) and pre- treatment scale for pain and disability was taken. All subjects were given treatment for 3 weeks **Result:** Total 60 subjects have been participated in the study, which includes active participation of 30 participants in group A where slump stretch intervention was given and 30 participants in group b in which muscle energy technique session was given for 3 weeks. The Statistical Analyses was done by using the software: Statistical Package For Social Science (spss Version 20.0) For Windows. For Experimental group and control group, statistical analyses $p < 0.05$ with class interval 95% were considered as significant results. **Conclusions:** In this study both the techniques were applied slump stretch and muscle energy technique on patients suffering from non specific low back pain and as per the results MET has came out as better and effective technique to cure nonspecific low back pain more accurately when compared.

KEYWORDS

Non specific low back pain, back pain, muscle energy technique slump stretch.

INTRODUCTION:

Low back pain (LBP) describes pain between the lower edge of the ribs and the buttock. It can last for a short time (acute), a little longer (sub-acute) or a long time (chronic). It can affect anyone. LBP makes it hard to move and can affect quality of life and mental well-being. It can limit work activities and engagement with family and friends.

LBP can be specific or non-specific. Specific LBP is pain that is caused by a certain disease or structural problem in the spine, or when the pain radiates from another part of the body.

Non-specific LBP is when it isn't possible to identify a specific disease or structural reason to explain the pain. LBP is non-specific in about 90% of cases.

In all types and at all stages of LBP, rehabilitation is essential to reassure people and help them make sense of their pain, help them return to activities they enjoy and identify strategies to support recovery and improve function. Specialized care pathways may be needed for specific LBP.

An estimated 619 million people live with LBP and it is the leading cause of disability worldwide. LBP is a major public health issue. LBP is often associated with loss of work productivity and thus produces huge economic burden on individuals and on societies.

Scope Of The Problem

In 2020, low back pain (LBP) affected 619 million people globally and it is estimated that the number of cases will increase to 843 million cases by 2050, driven largely by population expansion and ageing (1). LBP is the single leading cause of disability worldwide and the condition for which the greatest number of people may benefit from rehabilitation.

LBP can be experienced at any age, and most people experience LBP at least once in their life.

Prevalence increases with age up to 80 years, while the highest number of LBP cases occurs at the age of 50–55 years. LBP is more prevalent in women (2).

Non-specific LBP is the most common presentation of LBP (about 90% of cases).

Overview

Low back pain (LBP) describes pain between the lower edge of the ribs and the buttock. It can last for a short time (acute), a little longer (sub-acute) or a long time (chronic). It can affect anyone.

LBP makes it hard to move and can affect quality of life and mental well-being. It can limit work activities and engagement with family and friends.

LBP can be specific or non-specific. Specific LBP is pain that is caused by a certain disease or structural problem in the spine, or when the pain radiates from another part of the body. Non-specific LBP is when it isn't possible to identify a specific disease or structural reason to explain the pain. LBP is non-specific in about 90% of cases.

In all types and at all stages of LBP, rehabilitation is essential to reassure people and help them make sense of their pain, help them return to activities they enjoy and identify strategies to support recovery and improve function. Specialized care pathways may be needed for specific LBP.

An estimated 619 million people live with LBP and it is the leading cause of disability worldwide. LBP is a major public health issue. LBP is often associated with loss of work productivity and thus produces huge economic burden on individuals and on societies.

Scope Of The Problem

Low back pain (LBP) has the highest prevalence globally among musculoskeletal conditions and is the leading cause of disability worldwide. It is the condition where the greatest number of people may benefit from rehabilitation.

People at any age can experience LBP, including children and adolescents. Most people experience LBP at some point in their lives. The peak in the number of cases occurs at 50–55 years, and women experience LBP more frequently than men. The prevalence and disability impact of LBP are greatest among older people aged 80–85 years. Recurrent LBP episodes are more common with ageing.

Chronic LBP is a major cause of work loss and participation restriction and reduced quality of life around the world. Considering the high prevalence, LBP contributes to a huge economic burden on societies. It should be considered a global public health problem that requires an appropriate response.

Signs And Symptoms

Low back pain can be a dull ache or sharp pain. It can also cause pain to radiate into other areas of the body, especially the legs. LBP can restrict a person's movement, which can affect their work, school and community engagement. It can also cause problems with sleep, low mood and distress.

LPB can be acute (lasting under 6 weeks), sub-acute (6–12 weeks) or chronic (over 12 weeks). In most cases of acute LBP, symptoms go away on their own and most people will recover well. However, for some people the symptoms will continue and turn into chronic pain.

People with LBP may also experience spine-related leg pain (sometimes called sciatica or radicular pain). This is often described as a dull sensation or a sharp, electric shock feeling. Numbness or tingling and weakness in some muscles may be experienced with the leg pain.

When associated with LBP, radicular signs and symptoms are often due to involvement of a spinal nerve root. Some people may experience radicular symptoms without LBP, when a nerve is compressed or injured distal to the spinal column.

All these experiences affect well-being and quality of life and often lead to loss of work and retirement wealth, particularly in those who experience chronic symptoms.

Cause And Risk Factors

LBP may be classified as specific or non-specific. Non-specific means that the experience of pain cannot be confidently accounted for by another diagnosis such as an underlying disease, pathology or tissue damage. It is non-specific in about 90% of cases. Risk factors for non-specific LBP include low physical activity levels, smoking, obesity and high physical stress at work.

Specific LBP can be explained by an underlying disease (e.g., cancer), tissue damage (e.g., fracture), or may be referred from other organs (e.g., from kidney or aortic aneurysm).

According to research done in 2020, low back pain (LBP) affected 619 million people globally and it is estimated that the number of cases will increase to 843 million cases by 2050, driven largely by population expansion and ageing (1).

LBP is the single leading cause of disability worldwide and the condition for which the greatest number of people may benefit from rehabilitation. LBP can be experienced at any age, and most people experience LBP at least once in their life.

Prevalence increases with age up to 80 years, while the highest number of LBP cases occurs at the age of 50–55 years. LBP is more prevalent in women (2).

Non-specific LBP is the most common presentation of LBP (about 90% of cases)

The longer a person experiences LBP, the more likely that limitations in functioning will manifest. In these contexts, adopting a biopsychosocial approach to assessment and care planning becomes increasingly important. Rehabilitation includes sets of interventions that aim to achieve and maintain independence in daily living and optimal participation in meaningful activities, such as work and community life and to achieve well-being. Interventions for rehabilitation in LBP include non-pharmacologic and pharmacologic options, whereas non-pharmacological interventions have in most cases a high priority.

Non-specific low back pain is usually categorized in 3 subtypes: acute, sub-acute and chronic low back pain. This subdivision is based on the duration of the back pain. Acute low back pain is an episode of low back pain for less than 6 weeks, sub-acute low back pain between 6 and 12 weeks and chronic low back pain for 12 weeks or more.

Non-specific low back pain is defined as low back pain not attributable to a recognizable, known specific pathology (e.g., infection, tumour, osteoporosis, lumbar spine fracture, structural deformity, inflammatory disorder, radicular syndrome, or cauda equina syndrome). [1]

Non-specific low back pain is usually categorized in 3 subtypes: acute, sub-acute and chronic low back pain. This subdivision is based on the duration of the back pain. Acute low back pain is an episode of low back pain for less than 6 weeks, sub-acute low back pain between 6 and 12 weeks and chronic low back pain for 12 weeks or more. [2]

The lumbar spine consists of 5, movable relative to each other, lumbar vertebrae (L1-L5). They are the largest segments of the vertebral column, because it supports greater weight of the body against gravity, as compared to the thoracic or cervical region. Each lumbar vertebra consists of a vertebral body, a vertebral arch and a processus spinosus, a processes transversi and facet joints. The fifth lumbar vertebra has a little bit a different Morphology than the other lumbar vertebrae, it is more cuneiform which accords with the prominence of the Sacro vertebral articulation. Studies also say that the integrity and the anatomy of the body of the lumbar vertebra is multifactorial. [3].

Before making a searching strategy for finding a cause of the non-specific low back pain problematic, it's crucial to understand the functional spinal unit (motion segment, the smallest physiological unit of the lumbar spine). This unit consist of 2 adjacent vertebrae and the intervertebral disc in between and they are strongly connected with all the adjoining ligaments, connecting tissues, facet joint and muscles. The functional unit Is divided in 3 compartments, which each part fulfilled a specific function:

The front lumbar compartment consist the vertebral body and the discus intervertebral is (and also the ligamentum longitudinal anterior / posteriors) → function: support the biggest part of the body weight against gravity and also as a shock absorber. The ligaments play an important role in resisting heavy movements.

The middle lumbar compartment consists the vertebral canalis → function: protection of the spinal cord. Note: the spinal cord ends by the first lumbar vertebrae and then from the second lumbar vertebrae the spinal nerves forms the cauda equina.

The rear lumbar compartment consist the vertebral arch, the processus spinous, the processes transverse and the facet joints. → function: protection against rotation and extreme movements + attachment site for connective tissue and muscles.

In total there are 3 motion direction possible in the lumbar spine: flexion/extension, side bending and rotation.The lumbar spine exhibits a lumbar lordosis, which is a result and a key factor of the evolution to the erect posture. This was an adaptation to the newly acquired function of axial loading. [3]

The back (lumbar) muscles play along with the abdominal, the glutea and the leg muscles an important role in the etiology of low back pain. Studies suggests that that multifidus and paraspinal muscle groups are significantly smaller in patients with chronic low back pain than in control patients who are healthy and on the symptomatic side of patients with chronic unilateral low back pain compared with the asymptomatic side.

Non-specific low back pain is defined as low back pain not attributable to a recognizable, known specific pathology (eg, infection, tumour, osteoporosis, lumbar spine fracture, structural deformity, inflammatory disorder, radicular syndrome, or cauda equina syndrome). [1]

Non-specific low back pain is usually categorized in 3 subtypes: acute, sub-acute and chronic low back pain. This subdivision is based on the duration of the back pain. Acute low back pain is an episode of low back pain for less than 6 weeks, sub-acute low back pain between 6 and

12 weeks and chronic low back pain for 12 weeks or more. [2]

Clinically Relevant Anatomy

The lumbar spine consists of 5, movable relative to each other, lumbar vertebrae (L1-L5). They are the largest segments of the vertebral column, because it supports greater weight of the body against gravity, as compared to the thoracic or cervical region. Each lumbar vertebra consists of a vertebral body, a vertebral arch and a processus spinous, a processes transverse and facet joints. The fifth lumbar vertebra has a little bit a different Morphology than the other lumbar vertebrae, it is more cuneiform which accords with the prominence of the Sacro vertebral articulation. Studies also say that the integrity and the anatomy of the body of the lumbar vertebra is multifactorial. [3].

Before making a searching strategy for finding a cause of the non-specific low back pain problematic, it's crucial to understand the functional spinal unit (=motion segment, the smallest physiological unit of the (lumbar) spine). This unit consist of 2 adjacent vertebrae and the intervertebral disc in between and they are strongly connected with all the adjoining ligaments, connecting tissues, facet joint and muscles. The functional unit Is divided in 3 compartments, which each part fulfilled a specific function:

The front lumbar compartment consist the vertebral body and the discus intervertebral is (and also the ligamentum longitude inhale anterior / posteriors) → function: support the biggest part of the body weight against gravity and also as a shock absorber. The ligaments play an important role in resisting heavy movements.

The middle lumbar compartment consist the vertebral canalis → function: protection of the spinal cord. Note: the spinal cord ends by the first lumbar vertebrae and then from the second lumbar vertebrae the spinal nerves forms the cauda equina.

The rear lumbar compartment consist the vertebral arch, the processus spinous, the processes transverse and the facet joints. → function: protection against rotation and extreme movements + attachment site for connective tissue and muscles.

In total there are 3 motion direction possible in the lumbar spine: flexion/extension, side bending and rotation.The lumbar spine exhibits a lumbar lordosis, which is a result and a key factor of the evolution to the erect posture. This was an adaptation to the newly acquired function of axial loading. [3]

The back (lumbar) muscles play along with the abdominal, the glutea and the leg muscles an important role in the etiology of low back pain. Studies suggests that that multifidus and paraspinal muscle groups are significantly smaller in patients with chronic low back pain than in control patients who are healthy and on the symptomatic side of patients with chronic unilateral low back pain compared with the asymptomatic side.

Epidemiology/Etiology

Low back pain (LBP) is the fifth most common reason for physician visits, which affects nearly 60-80% of people throughout their lifetime. The lifetime prevalence of low back pain is reported to be as high as 84%, and the prevalence of chronic low back pain is about 23%, with 11-12% of the population being disabled by low back pain[1]. In the 2010 Global Burden of Disease study the global age-standardised point prevalence of LBP (from 0 to 100 years of age) was estimated to be 9.4%.

The same study showed that prevalence in 2010 was highest in western Europe followed by North Africa/Middle East, and lowest in the Caribbean followed by central Latin America.

Economically LBP is a huge burden, LBP causes more global disability than any other condition. The cost of care for LBP has been reported to be over $50 billion annual. Despite the intense focus and formal research on the care of non-specific LBP Pransky et all reported a five fold increase in the prevalence of LBP over a 15 year period. It should be noted that most of the epidemiology/economic studies have been done in the western industrialised higher resourced countries and these figures will differ globally.

Low back pain is a self limiting condition: 90% of people with LBP will recover in 3-4 months with no treatment. 70% of people with LBP will recover in 1 month with no treatment. 50% of people with LBP will recover in 2 weeks with no treatment. 5% of the remaining 10% will not respond to conservative care (such as physiotherapy). The final 5% are the more challenging cases that don't naturally improve that we as physiotherapists commonly see.

However these figures may be deceptive because although the pain may go away the the re-occurrence rate of LBP is extremely high and these individuals are likely to experience another episode of LBP within 3-6 months. Re-occurrence is a major problem with the re-occurrence rate being approximately 60%.

Non-specific low back pain accounts for over 90% of patients presenting to primary care[12] and these are the majority of the individuals with low back pain that present to physiotherapy.

Non-specific low back pain can caused by: Traumatic injury , Lumbar sprain or Leg pain is a frequent accompaniment to low back pain, arising from disorders of neural or musculoskeletal structures of the lumbar spine. Differentiating between different sources of radiating leg pain is important to make an appropriate diagnosis and identify the underlying pathology. Some specific causes of leg pain need to be managed in a different way to simple non-specific low back pain.

Self-care

Self-care is an important part of managing LBP and returning to meaningful life activities.

There are several ways to reduce symptoms and help prevent further episodes of non-specific low back pain:

- Being physically active
- Optimizing mental well-being
- Maintaining a healthy body weight
- Not smoking tobacco
- Getting good sleep
- Being engaged in social and work activities
- Making ergonomic adjustments in the workplace.

Education and support can help people with low back pain to develop strategies to self-manage and cope with the symptoms. This helps to reduce the impact of the disease and improve well-being.

WHO response

WHO is taking action to extend access to care for people with low back pain in different ways:

WHO Rehabilitation 2030 Initiative:

The Package of Interventions for Rehabilitation provides information on essential interventions for rehabilitation (including assistive products), and human and material resources for 20 health conditions, including low back pain.

UN Decade of Healthy Ageing:

WHO recommends a reorientation of health and care systems to promote healthy ageing and address the diverse needs of older persons. The Integrated Care for Older People (ICOPE) approach promotes the person-centred assessment of the older person to guide the design of personalized, health and social care, including long-term care interventions. Specific recommendations are provided to prevent the loss of locomotor and psychological capacity because of pain.

The WHO Guideline on management of chronic primary low back pain in adults (under development) will provide evidence-based recommendations about non-surgical care in primary and community care settings.

Need Of The Study

- There are many studies done on individually on the effect of slump stretch and muscle energy technique but there is no specific evidence that which one is more effective or accurate and more beneficial treatment for low back pain
- The slump stretch is effective in reducing pain and improving function in patients with non-specific low back pain.
- The muscle energy technique is an instant pain relief technique used for musculoskeletal anomalies.
- Thus, need of the study is to understand and compare the effect of slump stretch and muscle energy technique on pain and disability in patients with non-specific low back pain.

Objective Of The Study
The study is a comparative study with the aim to determine the effectiveness of slump stretch compare with muscle energy technique on pain and disability in patience with non-specific low back pain condition.

Study Design And Study Setting
Study Design: This study is a randomized clinical trial designed to compare the effects of slump stretching and muscle energy technique on pain and disability in patients with non-specific low back pain.
Study Duration: The study duration is 4 weeks.
Population: Adults aged 30 to 60 years with non-specific low back pain.

Selection Criteria:
A. Inclusion Criteria:
- Adults of age group between 30 to 60 years.
- Both male and female included.
- Patients having low back pain and limitation in straight leg raise (SLR) unilaterally more than 15 degrees.
- Patients experiencing pain and muscle weakness in the buttock and distal thigh.

B. Exclusion Criteria:
- Patients with nerve root compromise, neurological signs, or disc herniation.
- Individuals with spinal stenosis.
- Patients with mental health conditions.
- Individuals with previous spine surgery.

Sampling Method and Sample Size: The sampling method used is simple random sampling. The sample size includes 30 patients, divided equally into two groups of 15 each.

Outcome Measures:
1. **Pain Assessment Scale:** Visual Analogue Scale (VAS).
2. **Disabilities Scale:** Oswestry Disability Index (ODI).

Methodology
Baseline Assessment: All participants will undergo a baseline assessment, which includes measuring pain intensity using the Visual Analogue Scale (VAS) and disability level using the Oswestry Disability Index (ODI).

Group Assignment: Participants will be randomly assigned to one of two groups:
1. Group A (Slump Stretching Protocol)
Objective: To improve neural mobility and reduce pain in patients with non-specific low back pain.

Session Structure:
Frequency: Twice a week.
Duration: Each session lasts approximately 30 minutes.

Exercises:
Slump Stretching:
Initial Position: The patient sits on the edge of a treatment table with their legs hanging freely.

Procedure:
The patient slumps their back and shoulders forward while keeping their neck straight. The therapist then gently extends the patient's knee on one side until they feel a stretch along the back of the leg. The patient flexes their ankle to intensify the stretch. This position is held for 20-30 seconds and repeated 3-5 times on each leg.

Progression:
Gradual increase in the stretch duration up to 60 seconds as tolerated.
Incorporating neck flexion to enhance the stretch if the patient can tolerate it.

Dynamic Neural Mobilization:
Initial Position: Similar to the slump stretch, but with active movement.

Procedure:
The patient extends one knee while simultaneously extending their ankle and flexing their neck.
They return to the initial position and repeat this movement 10-15 times. This exercise is performed on both legs.

Therapist's Role:
Ensuring the patient maintains the correct posture.
Monitoring for any signs of discomfort or adverse reactions.
Providing feedback and adjustments to optimize the effectiveness of the stretch.

Patient Education:
Instruction on performing the slump stretch at home.
Emphasis on maintaining good posture and avoiding positions that may aggravate symptoms.

2. Group B (Muscle Energy Technique Protocol)
Objective: To improve muscle function and reduce pain in patients with non-specific low back pain.

Session Structure:
Frequency: Twice a week.
Duration: Each session lasts approximately 30 minutes.

Techniques:
Post-Isometric Relaxation (PIR):

Initial Position: The patient lies supine or prone, depending on the target muscle group.

Procedure:
The therapist positions the patient's muscle into a stretch.
The patient is instructed to contract the stretched muscle gently against the therapist's resistance for 5-10 seconds.
After the contraction, the patient relaxes and the therapist gently stretches the muscle further.
This process is repeated 3-5 times per muscle group.

Reciprocal Inhibition (RI):
Initial Position: The patient is positioned to target the specific muscle group.

Procedure:
The therapist places the muscle to be treated into a slight stretch.
The patient is asked to contract the antagonist muscle gently.
As the antagonist muscle contracts, the therapist assists the stretch of the target muscle.
This is held for 5-10 seconds and repeated 3-5 times.

Therapist's Role:
Guiding the patient through each contraction and relaxation phase.
Adjusting the force and duration of contractions based on the patient's feedback and tolerance.
Ensuring proper alignment and technique to maximize effectiveness and safety.

Patient Education:
Providing information on proper body mechanics.
Teaching gentle stretching exercises to perform at home.
Advising on lifestyle modifications to prevent recurrence of low back pain..

Monitoring and Supervision: All exercises and techniques will be administered and monitored by qualified physical therapists to ensure correct performance and to adjust the interventions as needed.

Follow-Up Assessments: At the end of the 4-week intervention period, participants will be reassessed using the VAS and ODI to measure changes in pain intensity and disability levels.

Data Collection and Analysis: Data from the baseline and follow-up assessments will be collected and statistically analysed to compare the effectiveness of slump stretching and muscle energy techniques in reducing pain and disability.

RESULT
Total 60 Subjects Have Been Participated In The Study, Which Includes Active Participation Of 30 Participants In Group A Where Slump Stretch Intervention Was Given And 30 Participants In Group B In Which Muscle Energy Technique Session Was Given For 3 Weeks.

The Statistical Analyses Was Done By Using The Software: Statistical Package For Social Science (Spss Version 20.0) For Windows.

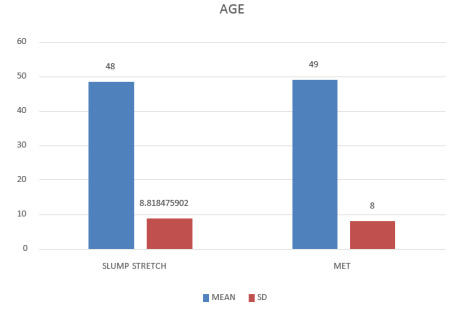
Distribution Of The Data In Both The Groups Was Analysed By Using Test Of Normality: Shapiro-Wilk Test. But The Data Was Not Normally Distributed, So Non-Parametric Test Was Applied.

Mean And Standard Deviation Were Calculated For The Numeric Data. For Both Experimental Groups Pre And Post Data Wilcoxon Signed Rank Test Was Used.

And Comparison Of Mean Of Between The Groups Was Analysed Using Mann-Whitney U Test. For Experimental Group And Control Group, Statistical Analyses $P < 0.05$ With Class Interval 95% Were Considered As Significant Results.

Table: 1 Age Distribution In Both Groups

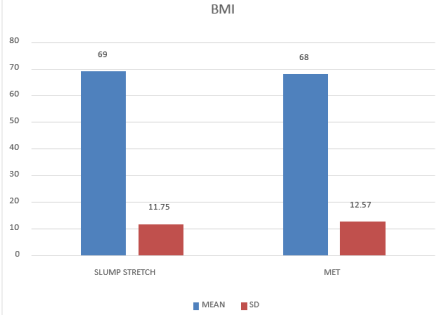
GROUPS	MEAN ± SD OF AGE
SLUMP STRECH	48 ± 8.8184759
MET	49 ± 8.68900746



Graph: 1 Age Distribution In Both Groups

Table: 2 Body Mass Index Of Both Groups

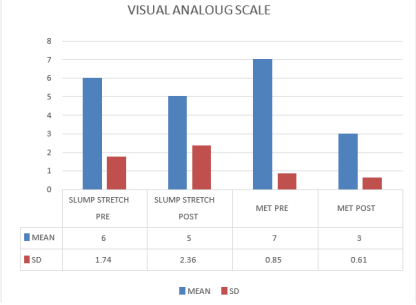
GROUPS	MEAN ± SD OF BMI
SLUMP STRECH	69 ± 11.75
MET	68 ± 12.57



Graph: 2 Body Mass Index Of Both Groups

Table: 3 Mean And Sd Of Vas In Slump Stretch And Met Group

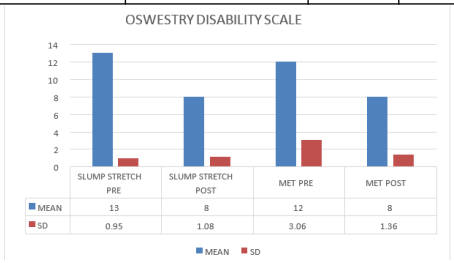
GROUPS		MEAN ± SD	T VALUE	P VALUE
SLUMP STRETCH	VAS PRE	6 ± 1.74	0.915	0.916
	VAS POST	5 ± 2.36		
MUSCLE ENERGY TECHNIUE	VAS PRE	7 ± 0.85	0.728	0.903
	VAS POST	3 ± 0.61		



Graph: 3 Mean And Sd Of Vas In Slump Stretch And Met Group

Table : 4 Mean And Sd Of Oswestry Disability Scale In Slump Stretch And Met Group

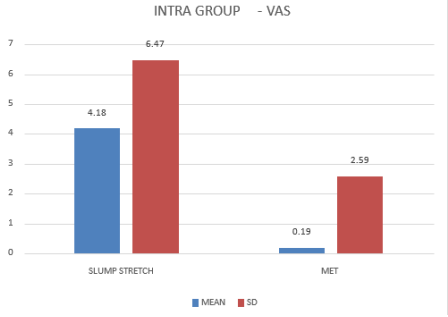
GROUPS		MEAN ± SD	T VALUE	P VALUE
SLUMP STRETCH	OSWESTRY PRE	13 ± 0.95	0.132	0.936
	OSWESTRY POST	8 ± 1.08		
MUSCLE ENERGY TECHNIUE	OSWESTRY PRE	12 ± 3.06	0.929	0.907
	OSWESTRY POST	8 ± 1.36		



Graph : 4 Mean And Sd Of Oswestry Disability Scale In Slump Stretch And Met Group

Table : 5 Mean Difference Of Vas In Both Groups

	GROUPS	MEAN ± SD	P VALUE
VAS	SLUMP STRETCH	4.18 ± 6.47	<0.001
	MUSCLE ENERGY TECHNIQUE	0.90 ± 2.59	0.027



Graph : 5 Mean Difference Of Vas In Both Groups

Table : 6 Mean Difference Of Oswestry Disability Scale In Both Group

GROUPS		MEAN ± SD	P VALUE
OSWESTRY DISABILITY SCALE	SLUMP STRETCH	10.5 ± 0.065	<0.001
	MUSCLE ENERGY TECHNIQUE	10 ± 0.85	0.038

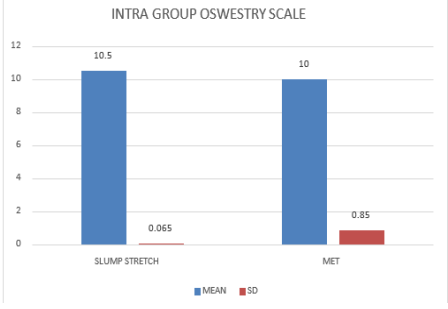


Table : 6 Mean Difference Of Oswestry Disability Scale In Both Group

DISCUSSION

The study was conducted to know the best possible result of physiotherapy techniques slump stretch and MET to cure non specific low back pain and which technique is better competitively so we could use it for the treatment of patients having low back pain and which do not get worsen with time and physical disability can be combat by helping patients live their independent and pain free life after curing low back pain.

Low back pain (LBP) is a major cause of physical disability in the world. The origin of this condition can be due to differents causes, with a specific cause or of unknown mechanical origin,being characterized as unspecific. In this case a physical therapy treatment approach with manual therapy is relevant, which includes the muscle energy technique (MET) classified as a common conservative treatment for pathologies of the spine, mainly in LBP and disability. This study assessed the effectiveness of the muscle energy technique on nonspecific low back pain. Low back pain is currently one of the most widespread public health problems faced by the industrialized world, as it affects a large portion of the population and constitutes a heavy burden on national health and welfare systems in terms of diagnostics, treatment, absenteeism and early retirement. Added to that is the psychosocial impact caused by the untimely withdrawal of otherwise active people from their daily activities. It is estimated that roughly 80% of the population ends up suffering from back pain at some point in their lives. The occurrence of acute low back pain is high, with some-where between 15% and 30% of the population developing this condition, mostly in adulthood. That said, epidemiological studies have shown an increase in mechanical lumbago in children, teenagers and young adults. Estimates put accumulated prevalence in this population at 30%.3–5The secondary causes of lumbago in the younger population has always been a medical concern, as it is considered "red flag" when back pain affects this age group. However, nonspecific low back pain is still the main cause among this population.

CONCLUSION

The study concludes that both technique are effective in decreasing pain and disability due to non-specific low back pain.

But if we compare both the technique Muscle Energy Technique is working more efficiently for reducing low back pain on immediate basis and risk of disability in patient with low back pain is also less as MET give pain relief and posture correction resulting in confidant and independent life style.

There is significant improvement in VAS and Oswestry disability scale in patient with nonspecific low back pain by giving Muscles energy technique This MET can be used as a treatment protocol for curing low back pain patients.

REFERENCES

1) GBD 2021 Low Back Pain Collaborators. Global, regional, and national burden of low back pain, 1990-2020, its attributable risk factors, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. Lancet Rheumatol 2023: 5: e316-29.
2) GBD 2019: Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. https://vizhub.healthdata.org/gbd-results/.
3) Prabhu, L. V., et al. "Vertebral body integrity: a review of various anatomical factors involved in the lumbar region." Osteoporosis international 18.7 (2007): 891-903. Level of evidence 2A
4) Fortin, Maryse, and Luciana Gazzi Macedo. "Multifidus and paraspinal muscle group crosssectional areas of patients with low back pain and control patients: a systematic review with a focus on blinding." Physical therapy (2013). Level of evidence 2A
5) Effect of slump stretching versus lumbar Mobilization with exercise in subjects with Non-radicular low back pain: a randomized Clinical trial Amit Vinayak Nagrale, Shubhangi Pandurang Patil, Rita Amarchand Gandhi,Ken Learman
6) Muscle energy technique for non-specific low-back pain Helge Franke1, Gary Fryer2, Raymond WJG Ostelo3, Steven J Kamper4