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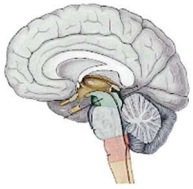

The Effect Of The Combination Of William Flexion Exercise And Myofascial Release Technique On Pain Reduction In Myogenic Low Back Pain Patients In Tailors In Sampang District

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ABSTRACT

Working as a tailor requires a person to sit for long periods of time in an inappropriate position, bending and lifting inappropriate weights causes lower back pain. The aim of this study was to analyze the effect of the combination of William Flexion Exercise and Myofascial Release Technique on reducing pain in sufferers of myogenic Low Back Pain in tailors. The method uses pre-experimental using "One Group Pre-test and Post-test design. research in Sampang District from June 2023 to August 2023. The population of patients who work as tailors in Sampang District is 40 people with a sample of 20 people. The Independent variable (free variable) is the provision of William flexion exercise and myofascial relaxation technique and the Dependent (related variable) is pain due to Myogenic LBP. used a research instrument in the form of a numeric rating scale (NRS) to measure pain before and after intervention. NRS is an effective tool for measuring a pain scale containing a horizontal line using a reference point numbered 0-10. Wilcoxon Rank Test Analysis (0.05). The research results show that female respondents are more dominant than male. Then, in terms of age, the highest percentage is aged 46-50 years. The statistical test results of the Wilcoxon Rank Test obtained $p = 0.000 < a = 0.05$. It can be concluded that the NRS values pre and post physiotherapy with the combination of William Flexion Exercise and Myofascial Release Technique experienced quite significant changes. It is recommended that to prevent pain, the tailor should reduce the curve of the lower back to a minimum while sitting. Wrong sitting positions and sitting for too long should be avoided to minimize the occurrence of pain in the lower back

INTRODUCTION

In this modern era, Indonesia continues to produce quality domestic products. Therefore, many tailors in Indonesia need resources that can help work activities to achieve the goals of an individual or company work system. The resources needed as potential drivers of activities include human resources. One of the home workers in Indonesia is a tailor, namely an industry that operates in the textile sector, such as clothes, trousers, jackets. Sewing work often causes muscle disorders, namely pain in the lower back. Working as a tailor requires a person to sit for long periods of time in an inappropriate position, bending over and lifting inappropriate weights, which causes lower back pain (Rachmat 2019).

The World Health Organization (WHO) reported that the prevalence of non-specific LBP in industrialized countries in 2013 was quite high, ranging from 60%-70%, with a prevalence of 15%-45% per year. The incidence rate in the elderly is 5% per year, children and adolescents have a lower incidence

rate than adults. It is estimated that around 65% to 80% of the human population during their lifetime will experience pain in the back area. Approximately 90% of patients feel better after undergoing therapy for 8 weeks. The remaining 7% of patients feel pain in the lower back area lasts for a long time, approximately 6 months (Karim, 2020).

Many people experience lower back pain when lifting heavy objects with incorrect body posture or because of frequent work that requires standing or sitting for too long. Other causes could be an abnormal body shape, but the abdominal and back muscles may be weakened due to inactivity or sedentary behavior. The complaints described above can be grouped as myogenic low back pain. Myogenic low back pain is pain that occurs in the area between the 12th thoracic vertebra and the hip due to injury to the fascia, muscles, bones in the joints, meniscus and bursa (Mukhiana, 2021)

The role of physiotherapy is very important to overcome pain complaints in LBP cases to reduce pain. Problems with lower back pain can use physiotherapy modalities, including William Flexion Exercise, which is a physical exercise therapy used by physiotherapy to maintain and restore physical health and to keep joints and muscles moving. This exercise can reduce lower back pain and is a form of physical exercise to reduce pressure on the posterior elements of the spine, so as to maintain proper balance between the postural flexor and extensor muscle groups (Halimah et al, 2022). Myofascial Release Technique is a manual therapy technique that uses light pressure along with stretching the painful muscle area (Pradita, 2021)

METHODS

This research uses a pre-experimental design using "One Group Pre-test and Post-test design. research in Sampang District with research carried out from June 2023 to August 2023. The frequency of physiotherapy is carried out 2 times a week and observed for 4 weeks. The population of patients who work as tailors in Sampang sub-district is 40 people with a sample of 20 people. The Independent variable (free variable) is the provision of William flexion exercise and myofascial relaxation technique and the Dependent (related variable) is pain due to Myogenic LBP. used a research instrument in the form of a numeric rating scale (NRS) to measure pain before and after intervention. NRS is an effective tool for measuring a pain scale containing a horizontal line using a reference point numbered 0-10. Wilcoxon Rank Test Analysis (0.05).

RESULTS AND DISCUSSION

Table 1. characteristics of the patients

	Variable	frequency	Presentase (%)
Gender	Male	3	15
	Female	17	85
Age	36-40	2	10
	41-45	3	15
	46-50	9	45
	51-55	6	30

The results of this study describe the characteristics of the patients. Table 1 shows that female gender is more dominant than male. Then, in terms of age, the highest percentage is aged 46-50 years

Tabel 2. The effect of the combination of William Flexion Exercise and Myofascial Release Technique

Variabel	Median (Min-Max)	Nilai - P
Nilai NRS Pre	5,00(2,00-6,00)	0,000
Nilai NRS Post	2,00(0,00-3,00)	

From Table 2 above, it can be concluded that the NRS values pre and post physiotherapy with the combination of William Flexion Exercise and Myofascial Release Technique experienced quite significant changes as seen from the results of the Wilcoxon test.

1. General Characteristics

Based on table 1, the largest number of sufferers who experience myogenic low back pain is that a study states that women, due to hormonal factors than men (Pradita, 2021), increase in the hormone estrogen in women occurs during the pregnancy process and the use of contraceptives, causing the hormone relaxin increases and affects joint and ligament weakness, especially in the waist area, because it is one of the causes of low back pain due to instability in muscle performance in the lower back area.

Women experience lower back pain more often because women's muscles are smaller and only two-thirds stronger (60%) than men's muscles, especially the muscles of the arms, back and legs. With these natural conditions, women have a higher risk of developing musculoskeletal disorders than men, especially those of productive age (Sugathot 2022).

As age increases, bone degeneration occurs and this situation begins to occur when a person is 30 years old, that is when degeneration occurs in the form of tissue damage, tissue replacement into scar tissue and a reduction in fluid which causes the stability of the bones and muscles to decrease (Rahmawati, 2021).

While the highest age for experiencing LBP is 46-55 years old, a study states that the prevalence of LBP increases significantly with increasing age. Workers aged 45 -65 years are more likely to experience low back pain than younger workers. According to a study among textile workers, those aged ≤ 35 years were found to have a 9 times greater risk than workers aged < 35 years. The increase in the incidence of low back pain with increasing age was due to increased disc degeneration and decreased elasticity of the ligaments (Andriani, 2023).

2. The effect of William Flexion Exercise and Myofascial Release Technique on reducing pain

Based on table 2, the Wilcoxon test results state that the p-value = 0.00 <0.05, which means that there is an effect of reducing pain after being given a combination of William Flexion Exercise and Myofascial Release Technique. The results of this study are in line with research (Putri, 2023) that William Flexion Exercise is effective for reducing pain. This is because the back in William flexion exercise can dilate the blood vessels so that blood circulation is smooth so that nutrients are distributed optimally and can activate the release of the endorphin system in the blood, which reduces pain and is followed by reduced muscle spasms. The William flexion exercise method involves

repetitive movements and has a muscle adaptation component to minimize pain, disability and increase spinal mobility and can also help reduce pain by reducing intradiscal pressure (Halimah, 2022).

The William flexion exercise movement is an exercise that uses the principle of stretching the muscles in the dorso lumbar area and strengthening the abdominal area. This trunk movement causes the muscles to contract concentrically and eccentrically with the organ's Golgi tendon mechanism, receptors on the tendons that are sensitive to stretch, when activated they will relax. This causes the emergence of a reciprocal inhibition mechanism, which is a mechanism for the work of agonist and antagonist muscles so that there is increased flexibility in the muscles (Zahratur, 2021).

The addition of the myofascial release technique has a pressure mechanism on the trigger point area of the myofascial tissue which can provide a release effect between the fascia and the skin and muscle tissue so that muscle spasm is reduced by increasing flexibility and reducing extrafausal tissue. Reducing spasms will cause tension and inflammation to subside. This occurs due to the release of acetylcholine which can increase blood circulation to normal and oxygen needs in the tissues are achieved optimally with the output of reducing pain and muscle relaxation (Fitri, 2023).

The myofascial release technique uses mechanical pressure which can reduce adhesion between tissues and reduce muscle tension in muscle fibers, activates the autonomic nervous system by stimulating interstitial type III and IV nerve receptors which respond to light touch which ends in the Ruffini fascia so that it responds to pressure by reducing sympathetic nerve activity , increases the activity of gamma motor neurons and relaxes intra-fascial smooth muscles, the pressure given by a physiotherapist can reduce ischemia that occurs due to increased local blood circulation of the skin and muscles, reduces sympathetic nerve activity and releases relaxation hormones and endorphins and removes metabolic waste and supplies oxygen. Parasympathetic stimulation that alters serotonin, corisol, endorphin and oxytocin reduces pain perception. Reduction of sympathetic nerve reflexes can reduce pain sensitivity by reducing stress on myofascial tissue by relaxing tension in smooth muscle soft tissue (Sartoyo, 2021).

Giving a combination of William flexion exercise and myofascial release technique can increase blood circulation significantly, the movements and pressure applied in these two therapies quickly cause vasodilation resulting in increased blood flow and blood volume which has an impact on reducing pain. So the combination of William flexion exercise therapy and myofascial release technique in patients with myogenic low back pain has been proven to have an effect on reducing back pain.

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CONCLUSIONS AND RECOMMENDATIONS

From the results of this study, it can be concluded from 20 respondents that there was a significant effect of reducing pain after giving a combination of William flexion exercise and myofascial release technique to patients with myogenic low back pain.

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