

## Model of Short Wave Diathermy Therapy and Mc Kenzie Therapy in Reduces Myogenic Low Back Pain

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### ABSTRACT

Background. Myogenic low back pain is low back pain caused by disorders or abnormalities in the musculoskeletal elements without accompanying neurological disorders.

Objective. To determine the effect of shortwave diathermy (SWD) and Mc. Kenzie on reducing myogenic low back pain. Methods. This research is a type of preexperimental one group pretest and posttest research to determine the effect of an intervention carried out on the object of research. The sample consisted of 30 respondents at the Siti Hajar Physiotherapy Clinic in Medan. Samples were grouped in one treatment given short wave diathermy (SWD) intervention and Mc. Kenzie. Results. The results of the wilcoxon signed rank test hypothesis test before and after the intervention were p value 0.003 where  $p < 0.05$ . Conclusion. short wave diathermy (SWD) and Mc. Kenzie can reduce myogenic low back pain, there is an effect of giving short wave diathermy (SWD) and Mc. Kenzie on reducing myogenic low back pain at Siti Hajar Physiotherapy Clinic in Medan.

**Keywords:** *Myogenic low back pain, SWD, Exercise therapy*

### INTRODUCTION

Low back pain is a physical and biological problem, most of the low back pain is caused by abnormalities in motion, low back pain can also be seen from functional and physical errors, adaptation of the movement of the wrong posture can also make problems in the vertebrae (Rizki, Pratama, and Anggita 2021)

A wide range of acute to chronic diseases can be treated with physiotherapy. Low back pain is one of the cases that is often treated with physiotherapy. The causes of low back pain are very complete and cannot be understood in a nutshell. One of the main factors that can be seen is vertebral structure and vertebral physiology that is not in accordance with functional activities, mobility and functional stability (Setiya & Rahayu, 2021).

Myogenic low back pain associated with stress back muscles, tendons and ligaments that usually arise when doing excessive daily activities, such as sitting or standing too long as well as lifting heavy loads in the wrong way. This pain is not accompanied

by paresthesia, weakness or neurological deficits. When coughing or sneezing the pain does not radiate to the limbs (Putri et al., 2023). Low back pain is mostly suffered by individuals who lift a lot of heavy weights in the wrong position or because their usual work forces them to stand or sit for long periods of time.

#### **Bunch of Symptoms**

- 1) Pain occurs intermittently or intermittently.
- 2) The condition arises due to insufficient movement being produced during soft tissue shortening.
- 3) The nature of the pain is sharp or sudden, affected by postures or movements that can either alleviate or aggravate the complaint.
- 4) Improves after adequate rest and worsens after exertion.
- 5) Pain that occurs in the region does not radiate to the leg (absence of neurological disorders).

#### **Complications**

Basically, people with myogenic low back pain will continue to carry out daily activities but the patient will try to position his body so that heavier pain complaints do not appear. With this, if people with myogenic low back pain do not get a good treatment program,

they will experience more severe complications such as lordosis.

### Pathology

Myogenic low back pain arises due to potential damage or pathological changes in the lumbar region due to trauma to the myofascial elements after the patient performs excessive activity due to the lumbar position being used for too long so that excessive muscle contraction occurs. Then the soft tissue in the back area, especially the lumbar which consists of muscles and ligaments, becomes tense and maximally stretched beyond the normal tolerance limit. As a result of the stress of soft tissue elements for a long time, it causes muscle spasm and blood flow around muscle tissue becomes not smooth, which can cause pain (Ehrlich, 2003).

Muscle spasm is a prolonged muscle contraction in response to circulatory and metabolic changes. Spasm is also said to be "muscle guarding", namely involuntary muscle contraction in response to acute pain or damage to the structure through which the muscle passes. In this case, spasm is the link of ischemia spasm pain.

### METHOD

This study used a pre experimental design with a one group pre-test and post-test design. This study only uses one group of subjects, measurement of research variables is carried out before and after the intervention. The effect of the intervention can be seen from the difference in measurement results before and after the intervention (Sugiyono, 2017). The population in this study were all patients diagnosed with myogenic low back pain at Siti Hajar Physiotherapy Clinic. The sample used was 30 respondents. Data analysis using the wilcoxon signed rank test.

### RESULT AND DISCUSSION

**Table 1. Mean pain scores before and after intervention**

Pain value	Group Teratment	
	Pre	Post
Average	6,63	2,87±
±SB	±1,189	0,937
Minimal	5	1
Maksimal	8	5

Before the intervention of the treatment group with Short Wave Diathermy (SWD) intervention and Mc. Kenzie has a mean value of low back pain is 6.63 and a standard deviation of 1.189 with a minimum value of 5 and a maximum of 8. Approximately a month after the intervention the mean value of low back pain decreased to  $2.87 \pm 0.937$ , and a minimum value of 1 and a maximum value of 5. The results of the analysis showed that of the 30 treatment group samples had a mean value of low back pain before the intervention of  $6.63 \pm 1.189$  and after the intervention of the 30 samples had a mean value of low back pain of  $2.87 \pm 0.937$ . The results of the analysis test with the Wilcoxon test showed  $p = 0.000$  or  $p < 0.05$ . Thus in this hypothesis test it is proven that Short Wave Diathermy (SWD) intervention and Mc.Kenzie exercise therapy can reduce low back pain in myogenic low back pain sufferers.

### CONCLUSION

Based on the results of the study, it can be concluded that short wave diathermy (SWD) and mc. kenzie exercise therapy can reduce myogenic low back pain.

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