

## Effect of Giving Mc. Kenzie Exercise and Warm Compress Against Low Back Pain Intensity in Elderly Patients at RSKBH

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### Abstract

**Introduction:** According to the National Institute of Neurological Disorders and Stroke, in 2020 that disorders that often occur in the elderly are disorders of the musculoskeletal system. The average elderly experiences pain and in most cases, pain occurs in the lower back or also known as LBP. Low Back Pain (LBP) is a common disorder that involves the muscles, nerves, and spine. The pain felt varies from mild to severe pain (National Institute of Neurological Disorders and Stroke, 2020).

**Objective:** The purpose of this study was to determine the effect of giving Mc. Kenzie Exercise and Warm Compress Against Low Back Pain Intensity in the Elderly at RSKBH.

**Methods:** The type of research used in this research is pre-experimental quantitative research with a one-group pre-post test design approach, which means that data that includes independent variables or risk factors for the dependent variable is observed at once and collected at the same time. The population in this study were elderly patients at the RSKBH in 2021 and the sample required in this study was 28 respondents using the purposive sampling method. The researchers analyzed data using a paired t-test.

**Results:** This shows the value of Sig. (2-tailed) is 0.000 < 0.05, so it can be concluded that there is a difference in the value of the pretest and posttest behavior measurements.

**Conclusion:** There is a difference or difference between before and after being given Mc. Kenzie exercise and warm compresses the intensity of low back pain in elderly patients at RSKBH

**Keywords:** elderly, mc. kenzie exercise and warm compress, low back pain

## Introduction

The World Health Organization (WHO) has set four stages of age criteria for the elderly, namely middle age (middle age) aged 45-59 years, elderly (elderly) aged 60-74 years old, elderly (old) aged 75-90 years and old age. very old age >90 years.<sup>1</sup> Data stated by WHO in 2016 that the proportion of the number of elderly starting in 2015 to 2050, will increase by two times or around 12% to 22%. Thus, the number of elderly people will reach 900 million to 2 billion elderly people by the end of 2050. It is currently estimated that in the Southeast Asia region, the number of elderly people will have reached 28,800,000 (11.34%) of the total population and by 2050, this number will be will increase by 3 (three) times the current number of the elderly population. Currently we are entering a period of the aging population, where there is an increase in life expectancy followed by an increase in the number of elderly people. Indonesia experienced an increase in the number of elderly people from 18 million people (7.56%) in 2010, to 25.9 million people (9.7%) in 2019, and is expected to continue to increase where in 2035 to 48.2 million people (15,77%).<sup>2</sup>

According to the National Institute of Neurological Disorders and Stroke, 2020 that disorders that often occur in the elderly are disorders of the musculoskeletal system. The average elderly experiences pain and in most cases, pain occurs in the lower back or also known as LBP. Low back pain (LBP) is a common disorder that involves the muscles, nerves, and spine. The pain felt varies from mild to severe pain (National Institute of Neurological Disorders and Stroke, 2020).<sup>3</sup>

Kirthika (2016) states that low back pain or LBP is a common disorder involving muscles and bones, the source of the pain experienced by this individual is due to injury to soft tissue structures which include muscles, fascia, and ligaments. chronic. Globally, the number of NBP sufferers was 377.5 million in 1990 and increased to 2577.0 million in 2017, due to the sizeable increase in the global population. The highest prevalence of LBP is in South Latin America (13.47%), followed by high-income Asia Pacific (13.16%), and Central Latin America (5.62%). while the lowest in East Asia (3.92%).<sup>4</sup>

While the prevalence of LBP in Indonesia is 18%, LBP increases with age and most often occurs in the fourth decade of life (Ministry of Health, 2018). The population study in the city of Yogyakarta found that there were 2,907 cases in all puskesmas in the city of Yogyakarta. The highest frequency is at the age of 50 years and over6. Acute low back pain is characterized by pain that attacks suddenly and lasts only a short time, from a few days to a few weeks and this pain can disappear or heal. While chronic low back pain pain in chronic low back pain can attack for more than 3 months and this pain can be repeated or recur. The main cause of NBP is the degeneration of the intervertebral disc. Pain occurs because the fibrocartilage on the disc becomes dense and irregular so that when the client moves this area, this friction will cause pain.<sup>5</sup>

According to Mc. Kenzie, Low back pain is characterized by symptoms such as sharp or sudden pain, influenced by attitudes or movements that can relieve or aggravate the complaint, Improves after adequate rest, and worsens after being used for activities, Sometimes the pain radiates to the buttocks or thighs, Occurs abdominal tension or cramping. Sometimes there is morning stiffness or pain. Pain sometimes gets worse when moving in extension, side flexion, rotation, standing, walking, or sitting. Pain is reduced when lying down, especially prone. One of the complications that can be experienced if the pain is not treated is lumbar hyperlordotic and disability disorders. The 2017 Global Burden of Disease Study stated that low back pain was the main cause of moderate to severe disability for the elderly from 1990 to 2017 globally.<sup>6</sup>

The elderly will experience a high level of dependence related to their lives. So the quality of life with NBP is low. Pain occurs because of the emphasis on L4-L5 and L5-S1 due to movement so that muscle spasms in the vertebrae will occur, causing pain. If pain is not handled properly, the maximum lumbar lordotic curve will occur. One of the instruments that can be used to measure pain in low back pain patients is the visual analog scale (VAS). VAS is an instrument that can be used to assess pain intensity using numbers. In the VAS method, the visualization is in the form of a 10 cm line-span, where the left end does not indicate pain, while the right end indicates very severe pain. The VAS scale assessment is 0: no pain, 1-3: mild pain, 4-7 moderate pain, 8-9: severe pain, and 10 very severe pain.<sup>7</sup>

This is by research (Raheswari, 2018) which uses a visual analog scale (VAS) to measure pain levels in low back pain regarding the Differences in the Effect of Core Stability Exercise and Mc. Kenzie Exercise Against Pain Reduction in Low Back Pain in Farmers This study used the measuring instrument VAS (Visual Analogue Scale).<sup>8</sup>

According to the 2018 Nursing Intervention Classification (NIC), interventions for pain nursing problems in patients with low back pain can be done with pharmacological and non-pharmacological interventions. Pharmacological interventions include medication therapy to reduce low back pain (NIC. 2018). The types of treatment used are NSAIDs (ibuprofen, diclofenac sodium, mefenamic acid, piroxicam, Celecox, and so on) and antidepressants if needed, prescription exercise therapy, and psychosocial interventions. Non-pharmacological interventions can use techniques, namely, exercise therapy. : joint mobility and warm compress therapy. One of the joint mobility exercise therapy can use the Mc Method. Kenzie exercise, also known as Mechanical Diagnosis and Treatment (MDT). This therapy includes active exercise therapy that uses repetitive movements or certain positions that can be taught and aims to reduce pain, disability and increase spinal mobility. Mc method therapy. Kenzie can be done with a dose three times a week with repetition of each movement 10 times. After that, do as many as 3 repetitions.<sup>9</sup>

This is by research (Afrian Wiji Pratama et al., 2020) on Mc. Kenzie Exercise and William's Flexion Exercise Effectively Reduce Low Back Pain Intensity. The results showed that the Wilcoxon test was used to determine whether there was a difference in the intensity of LBP before and after exercise. Data analysis showed the intensity of LBP in both groups before doing back exercise was 5 (4-6). In the group that did Mc. Kenzie Exercise and the group that did William's Flexion Exercise found a decrease in LBP intensity to 2 (1-3). There are differences in the intensity of LBP before and after exercise in the Mc group. Kenzie Exercise ( $p = 0.004$ ) and in the William Flexion Exercise group ( $p = 0.004$ ).<sup>10</sup>

According to research (Putri & Hasina, 2020) about the difference between cupping therapy and warm compresses on lower back pain levels in the elderly, the results of the study using the Wilcoxon test showed that there was an effect of cupping therapy ( $p = 0.002$ ) and warm compresses ( $p = 0.001$ ) on the level of pain before and after being given the intervention.<sup>11</sup> According to research (Yanti & Ihsan, 2019) on the Effect of Hip Movement Exercises (Stretching) and Warm Compresses on Reducing Low Back Pain Intensity in the Elderly in Dusun Due Parangina Village, Sape District, Bima Regency, it was found The results showed that the t value for warm compresses was 9 while the t value for stretching exercises was 10,585, this means that  $H_0$  is rejected and  $H_a$  is accepted, that is, stretching exercises have more effect on decreasing the intensity of low back pain in the elderly if compared to giving warm compresses.<sup>12</sup>

The Halimun Surgery Special Hospital (RSKBH) is a hospital for treating degenerative diseases. Based on RSKBH medical record data from April to June 2021, it was found that one of the most common medical diagnoses was patients with low back pain. A total of 54 cases.

The average patient was in the middle age elderly stage and the average age was between 45-60 years. Researchers conducted a preliminary study of 10 people with low back pain. 10 patients said pain occurred between 1 - 3 months. 5 patients said the pain was on a scale of 5.3 patients said the pain was on a scale of 4 and 2 patients said the pain was on a scale of 3. On average patients said if pain occurs the patient will experience pain in the lumbar region, pain can radiate to the abdomen so that the stomach will stiffen. Some patients say the pain will make the patient sweat to wince in pain, some patients also say if the pain occurs, the heart palpitates, experiences muscle stiffness, and is difficult to move. 10 patients said they had done warm compresses to reduce pain but the pain only decreased slightly and did not return for long. Of the 10 patients said they had never done mc exercise. Kenzie to reduce pain.

Based on the above background, the researcher is interested in researching "The Effect of Mc. Kenzie Exercise and Warm Compresses on the Intensity of Low Back Pain in Elderly Patients at RSKBH". The purpose of this study was to determine the effect of giving Mc. Kenzie Exercise and Warm Compress Against Low Back Pain Intensity in the Elderly at RSKBH.

## Methods

The type of research used in this research is pre-experimental quantitative research with a one-group pre-post test design approach, which means that data that includes independent variables or risk factors for the dependent variable is observed at once and collected at the same time. The population in this study, which became the research population, were elderly patients at RSKBH. The sampling technique used was purposive sampling so that a sample of 28 respondents was obtained. The instruments in this study were the tools used for data collection, namely the VAS observation sheet. This study did not test the validity and reliability because the instruments used were standardized and the tools used were standardized. In this study, the analysis used the Shapiro-Wilk test. This research has passed the ethical test at the Health Research Ethics Commission with a certificate, Number: 1721/Sket/Ka-Dept/RE/STIKIM/VIII/2021.

## Results

### Univariate Test

**Table 1.** Frequency distribution of characteristics of low back pain

Characteristics	Frequency (n)	Percentage (%)
<b>Age</b>		
45-50	15	53,50%
50-55	9	32%
55-60	4	14,30%
<b>Gender</b>		
Perempuan	18	64%
Laki-Laki	10	35,70%
<b>Pain Intensity Before</b>		
No Pain	N/A	N/A
Mild Pain	2	7,1
Moderate Pain	22	78,6
Severe Pain	4	14,3
Very Severe Pain	N/A	N/A
<b>Pain Intensity After</b>		
No Pain	N/A	N/A
Mild Pain	16	57,1
Moderate Pain	12	42,9
Severe Pain	N/A	N/A
Very Severe Pain	N/A	N/A

Table 1 shows the frequency distribution of 28 low back pain characteristics based on ages 45-50 as many as 15 (53.6%), ages 51-55 as many as 9 (32.1%), and ages 55-60 as many as 4 (14.3%). Distribution of the frequency of characteristics by gender, 18 women (64.3%) and 10 men (35.7%). Of the 28 respondents the average description of the intensity of low back pain pre-administration of Mc. Kenzie exercise and warm compresses in elderly patients whose pretest minimum value = 1 where the mean = 3.07. The pretest experienced mild pain (1 to 3) in as many as 2 people (7.1%) and the pretest experienced moderate pain (4 to 6) in as many as 22 people (78.6%) while the pretest experienced severe pain (7 to 9 ) as many as 4 people (14,3%). Of the 28 respondents the average description of the intensity of low back pain after administration of Mc. Kenzie exercise and warm compresses in elderly patients whose posttest minimum value = 1 where the mean = 2.43. posttest experienced mild pain (1 to 3) as many as 16 people (57.1%) and for the posttest experienced moderate pain (4 to 6) as many as 12 people (42.9%).

### Bivariate Analysis

Bivariate analysis in this study to determine the effect of giving Mc. Kenzie exercise and warm compresses the intensity of low back pain in elderly patients at RSKBH. Before the analysis use the T-Test Dependent or Paired Sample T-Test with the assumption that the data is normally distributed. The normality test in this study used the Shapiro – Wilk test because the respondents were less than 50 and the data generated was numerical.

**Table 2.** Normality Test of Shapiro – Wilk Data

Low Back Pain Intensity	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Before	.201	28	.005	.930	28	.063
After	.187	28	.013	.929	28	.059

Based on table 2 shows the results of the normality test with the Shapiro-Wilk test, there were significant results of low back pain before mc administration. Kenzie exercise and warm compresses were significant at 0.063 while lower back pain after administration of mc. Kenzie exercise and warm compresses are significant at 0.059 where these results show a p-value > 0.05. So it can be concluded that the data on the intensity of low back pain in elderly patients pre and post mc. Kenzie exercise and warm compresses were normally distributed.

**Table 3.** T-Test. Test

Variable	Mean	SD	df	Sig. (2 tailed)
Low back pain intensity before and after intervention	2.036	0.036	27	0.000

Based on table 3 shows that from the results of the dependent or paired t-test, the sample t-test shows that the average lower back pain is pre and post-administration of mc. Kenzie exercise and warm compresses of 2.036, and the p-value = 0.000 < or 0.05, then H0 is rejected and Ha is accepted, meaning that there is an effect of giving mc. Kenzie exercise and warm compresses the intensity of low back pain in the elderly at RSKBH.

## Discussion

### Univariate

#### Characteristics of low back pain based on age and gender in elderly patients at RSKBH

Based on the results of the study, most of the elderly who experienced low back pain were at the age of 45-50 years as many as 15 respondents (53.6%). The results of this study are by the results of research from Raheswari (2018) with the title "Differences in the Effect of Core Stability Exercise and Mc. Kenzie Exercise on Reducing Pain in Lower Back Pain in

Farmers”, it was found that most of the respondents who experienced low back pain were in the age group of 35-59 years.

This is to the research conducted by Putri & Hasina (2020) under the title "Differences in Cupping Therapy and Warm Compresses on Low Back Pain in the Elderly" it was found that most of the respondents who experienced low back pain were at the age of 45-59 years as many as 9 people. of 15 respondents.<sup>11</sup> According to Latif (2011) low back pain usually begins to be felt in those in the second decade and the highest incidence is found in the fifth decade. One of the causes of intervertebral disc degeneration is age. The disc will undergo structural changes. The fibrocartilage becomes dense and irregular which is the cause of low back pain. So that respondents who are in their middle age will be at risk of developing low back pain.<sup>13</sup>

The assumption of this study, respondents who experience low back pain are mostly aged 45-50 years. Where the average respondent has experienced changes in the musculoskeletal system, especially changes in the intervertebral disc. The intervertebral disc is stiff and hard so when doing activities the respondent is easy to experiences low back pain.

Based on the results of the study of Most Gender, it was found that the most were women with a total of 18 respondents (64.3%). The results of this study are from the research conducted by Putri & Hasina, (2020) under the title "Differences in Cupping Therapy and Warm Compresses Against Low Back Pain in the Elderly".<sup>11</sup>

The results of this study are supported by Zelin and Fatmawati's (2019) (14) research conducted entitled "Age and Gender Relationship with Low Back Pain Complaints at Gamping 1 Health Center, Sleman Yogyakarta". 18 respondents. When the ovaries stop functioning, women will experience a decrease in the hormones estrogen and progesterone, where estrogen and progesterone help to absorb calcium for bones.<sup>14</sup>

The researcher assumes that the results of the study showed that the average respondent who experienced low back pain occurred in the female gender, this is because the average respondent is already at the menopause stage where the hormones estrogen and progesterone are no longer produced. So that calcium can not enter perfectly into the bones. Therefore, female respondents are at risk of experiencing low back pain.

### **Description of the Frequency Distribution of Low Back Pain Intensity Before Mc. Kenzie Exercise and Warm Compresses for the Elderly at RSKBH**

The results of the study of 5 classifications of pain intensity obtained from patients with low back pain before being given mc. Kenzie exercise and warm compresses that the average patient was on a moderate scale of pain intensity (4-6) as many as 22 people (78.6%).

The results of this study are the results of Putri and Hasina's research (2020) with the title "Differences in Cupping Therapy and Warm Compresses on Lower Back Pain Levels in the Elderly". as many as 14 people.<sup>12</sup> The results of this study are supported by the research of Afrian Wiji Pratama et al (2020) with the title "Mc. Kenzie Exercise and William's Flexion Exercise Effectively Reduces Low Back Pain Intensity, it is found that the intensity of pain experienced by low back pain is on average with moderate pain intensity scale (4-6).<sup>10</sup> According to Moayed (2013) Low back pain is a type of somatic pain that originates from the bones, muscles, and joints. The pain intensity obtained from somatic pain in the average pain intensity is on a moderate to severe scale.<sup>15</sup>

The researcher assumes that the intensity of pain before the mc. Kenzie and warm compresses, it was found that respondents were at moderate pain intensity, namely pain on a scale (4-6) this is because, the pain produced is a type of deep somatic pain originating from the bones, muscles, and joints in the lumbar L4-L5 and L5-S1. In respondents who experience

moderate pain intensity, the patient undergoes physiological changes where the patient will experience changes such as diaphoresis, changes in TTV, palpitations, and so on.

### **Description of the Frequency Distribution of Low Back Pain After Mc. Kenzie Exercise and Warm Compresses for the Elderly at RSKBH**

The results of the study from 5 classifications of pain intensity were obtained by patients with low back pain after being given mc. Kenzie exercise and warm compresses that the average patient is in pain intensity with a mild scale (1-3) as many as 16 people (57.1%).

The results of this study are by the results of Putri and Hasina's research (2020 with the title "Differences in Cupping Therapy and Warm Compresses Against Low Back Pain in the Elderly" obtained pain intensity after the intervention, the average pain intensity is on a mild scale (1-3) which is as much as 11 people.<sup>12</sup> The results of this study are supported by the research of Afrian Wiji Pratama et al (2020) with the title "Mc. Kenzie Exercise and William's Flexion Exercise Effectively Reduces Low Back Pain Intensity". with a mild pain intensity scale (1-3).<sup>10</sup>

According to Vanderah (2007), the process of spreading pain has 4 processes, namely: transduction, transmission, modulation, and descending modulatory system. First, transduction begins with a stimulus that is converted into electrical signal nociceptors. There are 3 types of nerve fibers involved in stimulus processing, namely A-beta, A-delta, and C fibers. These 3 fibers are responsible for destroying pain. Transmission is the second stage of processing pain signals. Information from the peripheral nerves is transmitted to the spinal cord and then to the thalamus and ends in the cortex. The receiver and sender of information are primary afferent neurons. The third stage or called (modulation) this process represents the changes that occur in the nervous system in response to stimuli. The process occurs in the dorsal horn of the spinal cord. The nociceptive system has descending pathways that originate from the frontal cortex, hypothalamus, and other brain areas to the midbrain and medulla oblongata. The fourth stage is Descending modulatory systems. Activation of the descending system by endorphins occurs via specific receptors called opioid receptors. This system is activated in the midbrain. These decreased pain-modulating neurons are in charge of releasing neurotransmitters in the spinal cord serotonin and norepinephrine and activating small interneurons containing small interneurons in the spinal cord to release opioid peptides. The released serotonin and norepinephrine act as inhibitors of the release of pain transmitters as well as inhibit secondary pain-transmitting cells.<sup>16</sup>

According to Garland (2012), the pain process in the nervous system is when there is a painful stimulus from outside or inside the body, information about this stimulus in body tissues will be transduced through nerve pathways and channeled through the peripheral nervous system to the central and autonomic nervous systems. Nociception is the process by which information about tissue damage is transmitted to the brain. Nociception is mediated by receptors known as nociceptors. Nociceptors can be found on the skin, joint surfaces as well as on internal surfaces, but nociceptors are more commonly found in the skin. Nociceptors travel from receptors to the spinal cord or brain.<sup>17</sup>

The researcher's assumption in the results of this study was that a decrease in moderate pain intensity changed to mild intensity due to Mc. Kenzie exercise and warm compresses inhibit the transmission and modulation processes. So that when the respondent intervened mc. Kenzie and warm compresses the resulting pain perception is low. Warm compresses are effective in reducing low back pain through a mechanism, namely vasodilation of blood vessels and releasing pain-reducing substances, namely endorphins and enkephalins, thereby blocking the transmission of pain stimulus pain. Mc. Kenzie exercise is effective in reducing pain

because when doing exercise the body will produce an increase in endorphins 4-5 times in the blood which functions as a natural sedative, causing a sense of comfort and blocking the transmission of pain stimulus pain.

### **Bivariate Analysis**

#### **Effect of Giving Mc. Kenzie Exercise and Warm Compress Against Low Back Pain Intensity in the Elderly at RSKBH.**

Based on table 3 shows that the results of the dependent t-test or paired Sample T-Test show that the average low back pain intensity before and after administration is 2,036, and the p-value = 0.000 < or 0.05 then H<sub>0</sub> is rejected and H<sub>a</sub> is accepted, meaning that there is the effect of giving mc. Kenzie exercise and warm compresses the intensity of low back pain in elderly patients at RSKBH.

This is in line with the research conducted by Suputri et al., (2018) under the title "The influence of Mc. Kenzie Extension Exercise Against the Level of Lower Back Pain Scale" with the result that the level of decrease in the low back pain scale was seen from the results of statistical analysis using a computer program using the Wilcoxon Test at a significance level of  $p < 0.05$ , the result was that  $p = 0.000 < (0.05)$  which means H<sub>0</sub> is rejected and H<sub>a</sub> is accepted. These results indicate that there is a significant effect between Mc. Kenzie Extension Exercise on the level of lower back pain scale reduction in employees of the Karangasem District Samsat Office.<sup>18</sup>

According to research conducted by Putri & Hasina, (2020) under the title "Differences in Cupping Therapy and Warm Compresses Against Low Back Pain in the Elderly." Almost all of the warm compress group (93.3%) before being given treatment-experienced moderate pain, and after receiving treatment most of them ( 73.3%) to mild pain. Based on statistical tests with the Wilcoxon signed-rank test in the warm compress group,  $p = 0.001$ , which means that there is also an effect of warm compresses on pain levels before and after the intervention.<sup>11</sup>

According to Moayed (2013), low back pain is a type of deep somatic pain that originates from the bones, muscles, and joints. where deep somatic pain originates in the bones, muscles, and joints. The pain intensity obtained from somatic pain in the average pain intensity is on a scale of moderate to severe.<sup>15</sup>

Low back pain is a deep somatic type where degeneration of the intervertebral disc will be stimulated so that the trigger for pain transduction, modulation of transmission, and descending modulation of the system occurs. Treatment of low back pain can be pharmacological or non-pharmacological. Pharmacological treatments include analgesics, anti-inflammatory drugs, muscle relaxants, etc. And non-pharmacological treatments such as warm compresses (Thermotherapy). According to the 2018 Nursing Intervention Classification (NIC), independent nursing interventions in patients with acute low back pain can be carried out with non-pharmacological interventions. Non-pharmacological interventions can use techniques, namely exercise techniques: joint mobility and warm compress therapy.<sup>3</sup>

One of the joint mobility exercise techniques can use is the Mc Method. Kenzie exercise, also known as Mechanical Diagnosis and Treatment (MDT). This therapy includes active exercise therapy that uses repetitive movements or certain positions that can be taught and aims to reduce pain, and disability and increases spinal mobility.<sup>6</sup>

Warm compresses are a therapeutic method by uses warm temperatures to cause physiological effects. Giving warm compresses helps reduce or prevent muscle spasms during activities, facilitates blood flow, and provides a sense of relaxation for muscles so that they can work optimally. Warm compresses are effective in reducing low back pain through a

mechanism, namely vasodilation of blood vessels and releasing pain-reducing substances, namely endorphins and enkafelins, thereby blocking the transmission of pain stimulus pain. Warm compresses can help increase blood flow to parts of the body that feel pain so that they can block the inflammatory products of bradykinin, histamine, and prostaglandins. In addition, warm compresses can provide a sense of comfort that reduces pain. Mc. Kenzie exercise is effective in reducing pain because when doing exercise the body will produce an increase in endorphins 4-5 times in the blood which functions as a natural sedative, causing a sense of comfort and blocking the transmission of pain stimuli.<sup>6</sup>

The assumption of the researcher from the results of this study was that there was an effect of giving mc. Kenzie exercises and warm compresses in elderly patients at RSKBH. This is because, at the time of pain in the transmission phase, the blood vessels conduct a constriction phase, causing the afferent nerves to release neurotransmitters in the spinal cord, namely serotonin, and norepinephrine. The serotonin and norepinephrine are released to act as inhibitors of pain transmitter release as well as to inhibit pain transmission cells. The intervention of warm compresses improves the process of vasoconstriction into vasodilation and stimulates the hormones endorphins and enkafelins, causing a sense of comfort. therapy mc. Kenzi results in lower back stability. therapy mc. Kenzie trains the intervertebral disc so that when it is moved it becomes flexible. When exercised, it will increase the hormone endorphins 4-5 times in the blood which functions as a natural sedative, causing a sense of comfort. Increased endorphins can reduce pain and can reduce pain during contractions.

## **Conclusions**

Researchers Get an overview of the characteristics of low back pain (Age and Gender) with the effect of giving Mc. Kenzie Exercise and Warm Compress Against Low Back Pain Intensity. The age of the respondents obtained was mostly at the age of 45-50 years. Meanwhile, based on gender, the majority were found to be women with a total of 18 respondents (64.3%). Researchers get an idea about the intensity of low back pain before giving Mc. Kenzie Exercise and Warm Compresses in the elderly with low back pain at RSKBH. The average pain scale was obtained on a moderate pain scale of 4-6 for 22 respondents. Researchers got an idea about the intensity of low back pain after giving Mc. Kenzie Exercise and Warm Compresses in the elderly with low back pain at RSKBH. The average pain scale is obtained on a mild pain scale of 1-3, which is 16 respondents

Based on the results of this study, researchers get a picture that the intervention of Mc. Kenzie Exercise and Warm Compresses affect the intensity of low back pain in elderly patients at RSKBH

## **Conflict of Interest Declaration**

The researcher states that this research is free from conflicts of interest, both individuals and organizations

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