

Effectiveness of kinesio video and pelvic rocking exercise video on reducing back pain of third trimester pregnant women

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Abstract

Background: Back pain in pregnant women is a common problem that is often experienced during pregnancy, especially in the third trimester. Back pain in pregnant women not only interferes with the mother's quality of life, but can also affect fetal well-being and the delivery process. In an effort to address the problem of back pain in pregnant women, various physical therapy methods have been developed. Two methods that have gained attention are kinesio techniques and pelvic rocking exercises.

Method: This research is a quantitative research with a pre-experimental study that uses a one group pretest-posttest design with no control group. The sample of this study was third trimester pregnant women at PMB Latifah and PMB Zainab Jambi City with as many as 60 pregnant women. The sampling technique used purposive sampling technique. This research instrument is a questionnaire. Data were analyzed using the Mann Whitney test.

Results: The results showed that in the kinesio taping therapy group it was known that before being given kinesio taping treatment, the scale of back pain felt by respondents was 67% feeling moderate pain and 33% feeling severe pain controlled. After being given kinesio taping, the pain scale felt by respondents was 57% feeling mild pain and 43% feeling moderate pain. In the pelvic rocking exercise therapy group, it is known that before being given pelvic rocking exercise therapy, the scale of back pain felt by respondents is 9% feeling mild pain, 70% moderate pain and 21% severe pain controlled. After being given pelvic rocking exercise therapy, the scale of back pain felt by respondents was 77% mild pain and 23% moderate pain. The results of the mann whitney test obtained p-value = 0.041, p-value <0.05 so that there is a significant difference between the results after kinesio taping and pelvic rocking exercise interventions

Conclusion: Based on the results of the study, it can be concluded that there are differences in the scale of back pain in third trimester pregnant women before being given kinesio taping therapy and pelvic rocking exercise with after being given kinesio taping therapy and pelvic rocking exercise.

Keywords: Back pain; kinesio taping therapy; pelvic rocking exercise therapy.

INTRODUCTION

Back pain is one of the most common health problems experienced by pregnant women, especially during the third trimester of pregnancy. At this stage, rapid fetal growth, hormonal changes, shifts in the body's center of gravity, and increased load on the musculoskeletal system can cause bothersome back pain. Back pain in third trimester pregnant women can have a negative impact on the mother's quality of life

and well-being as well as influence the pregnancy itself (1).

During the third trimester, the growing fetus results in changes in the position of the uterus and pelvic bones, which in turn affects the posture of the expectant mother. Increased weight and changes in hormones such as relaxin, which helps loosen ligaments and joints to prepare for labor, can also cause instability and back pain. Third trimester back pain tends to be localized in the lumbar region

or lower spine and can be constant or periodic in onset (2).

The importance of managing back pain in third trimester pregnant women is to ensure maternal comfort and well-being during this critical stage of pregnancy. In addition to interfering with daily activities, uncontrolled back pain can have an impact on pregnant women's sleep quality, overall quality of life, and mental and physical readiness for labor. Therefore, an in-depth understanding of the causes of back pain in the third trimester and strategies for its prevention and management is essential to better support pregnant women in facing this health challenge (1).

In the third trimester of pregnancy, rapid fetal growth and increased load on the musculoskeletal system can cause increased pressure on the lumbar region and lower back. In addition, the shift in the center of gravity of the pregnant woman's body can also affect posture, which can trigger muscle tension and pain. As a result, back pain can become a significant problem and hinder the daily activities of pregnant women. In managing back pain in pregnant women, there are various physical therapy approaches that can be taken. Kinesio Taping is one technique that has been used to reduce pain and improve muscle support. Meanwhile, Pelvic rocking exercise is a specific exercise that can help strengthen the muscles of the pelvis and lower back (3).

Kinesio tape is a self-adhesive tape that forms a band made of latex material (4). The tape has a thickness and elasticity that is similar to human skin, so it does not restrict movement when used for a long period of about 5 to 7 days without having to worry about movement restrictions and the surface of the skin area it adheres to. The tape is waterproof and can be used during exercise, showering and even swimming and rarely causes skin irritation. The elasticity of this kinesio tape has a stretch potential between 130 - 140% of its original length (5,6).

Kinesio taping can facilitate lymphatic activity, and endogenous analgesic mechanisms and increase microcirculation. Kinesio taping has a recoil effect that can lift

the skin and provide a separation space between the muscle and the skin, so that lymphatic circulation can be smoother and blood with muscle movement (7). According to Chien-Tsung Tsai (8) Kinesio taping can also reduce muscle tone that is experiencing tension due to unstable neuromuscular control and will facilitate through mechanoreceptors on the skin for the desired movement and will provide a sense of comfort in the area that is paired with this kinesio taping (5).

Pelvic rocking exercise is an exercise that makes small movements in the pelvis. Kapoor (9) in their research stated that exercise can help reduce pain, stress, improve mood and health. Women who exercise show reduced incidence of dysmenorrhea and have a more positive effect than women who just sit around. One exercise that can reduce menstrual cramps and related symptoms is pelvic rocking exercise. In addition, pelvic rocking exercise can reduce pain in the lower back (9).

The benefits of pelvic rocking exercise according to Thabet (10), which can improve blood flow, relax abdominal muscles, reduce pelvic pain and reduce pressure on nerve centers, pelvic organs and the digestive tract. Exercise can increase the release of several neurotransmitters including natural endorphins (the brain's natural painkillers), catechol, estrogen, dopamine and endogenous opiate peptides, as well as changing the reproduction of hormone secretion, suppressing prostaglandins from being released and increasing the estrone-estradiol ratio which acts to reduce endometrial proliferation and drain blood flow from the uterus (10).

Although there are previous studies that have investigated the positive effects of these two methods on back pain in pregnant women, studies that directly compare the effectiveness of kinesio video and pelvic rocking exercise Video are still limited. Therefore, this study aims to determine the effectiveness of kinesio taping and pelvic rocking exercise treatment on back pain in third trimester pregnant women at PMB

Latifah and Zainab Jambi City in 2023. Researchers want to see if there are significant changes in efforts to reduce the scale of back pain levels of third trimester pregnant women at PMB Latifah and Zainab Jambi City.

METHOD

This study is a quantitative study with a type of pre-experimental research that uses a one group pretest-posttest design without a control group. The sample of this study were third trimester pregnant women at PMB Latifah and PMB Zainab Jambi City as many as 60 pregnant women. The sampling technique used purposive sampling technique. The sample of this study was divided into two groups, namely the group given kinesio taping therapy and the group given Pelvic rocking exercise therapy. Each group numbered 30 third trimester pregnant women. Measurement of back pain will be done before and after the intervention using a visual analog pain scale (VAS). This research instrument is a questionnaire. Data were analyzed using the Mann Whitney test.

RESULTS

Based on the research data, the following results were obtained:

Table 1. Frequency Distribution of Neck Pain Levels of Third Trimester Pregnant Women Before Being Given Kinesio Taping Treatment at PMB Latifah and PMB Zainab Jambi City 2023

Back Pain Scale	n	%
Moderate pain	20	67.0
Severe pain controlled	10	33.0
Total	30	100.0

Based on table 1, the results show that the frequency distribution of back pain levels of Trimester III pregnant women before being given kinesio taping with a moderate pain scale of 4-6 as many as 20 respondents (67%), and a controlled severe pain scale of 7-9 as many as 10 respondents (33%).

Table 2. Frequency Distribution of Neck Pain Levels of Third Trimester Pregnant Women After Being Given Kinesio Taping Treatment at PMB Latifah and PMB Zainab Jambi City 2023

Back Pain Scale	n	%
Mild Pain	17	57.0
Moderate pain	13	43.0
Total	30	100.0

Based on table 2, the results show that the frequency distribution of back pain levels of Trimester III pregnant women after being given kinesio taping with mild pain scales 1-3 as many as 17 respondents (57%), and moderate pain scales 4-6 as many as 13 respondents (43%).

Table 3. Frequency Distribution of Neck Pain Levels of Third Trimester Pregnant Women Before Being Given Pelvic Rocking Exercise Treatment at PMB Latifah and PMB Zainab Jambi City 2023

Back Pain Scale	n	%
Mild Pain	3	9.0
Moderate pain	23	70.0
Severe pain controlled	4	21.0
Total	30	100.0

Based on table 3, it is obtained that the frequency distribution of back pain levels of Trimester III pregnant women before being given kinesio taping with mild pain scale 1-3 as many as 3 respondents (9%), moderate pain scale 4-6 as many as 23 respondents (70%), and severe pain scale controlled 7-9 as many as 4 respondents (21%).

Table 4. Frequency Distribution of Neck Pain Levels of Third Trimester Pregnant Women After Being Given Pelvic Rocking Exercise Treatment at PMB Latifah and PMB Zainab Jambi City 2023

Back Pain Scale	n	%
Mild Pain	23	77.0
Moderate pain	7	23.0
Total	30	100.0

Based on table 4, the results show that the frequency distribution of back pain levels of Trimester III pregnant women after being given kinesio taping with mild pain scales 1-3 as many as 23 respondents (77%), and moderate pain scales 4-6 as many as 7 respondents (23%).

Table 5. The Effect of Kinesio Taping and Pelvic Rocking Exercise on the Level of Back Pain of Third Trimester Pregnant Women at PMB Latifah and PMB Zainab Jambi City in 2023

Pain Scale	Mean	p-value
Kinesio Taping Therapy		
Before	6.03	0,000
After	3.50	
Pelvic Rocking Exercise Therapy		
Before	4.93	0.000
After	2.87	

Based on the descriptive distribution in table 5, it was found that the average level of back pain of third trimester pregnant women before being given kinesio taping therapy was 6.03 and after being given kinesio taping therapy the average level of back pain of third trimester pregnant women became 3.50. Based on the Wilcoxon signed ranks test with a p-value of 0.000 (p-value <0.05) which means that there is a significant difference between the results before and after the kinesio taping treatment intervention in third trimester pregnant women.

Table 5 also shows that the average level of back pain in trimester III pregnant women before being given pelvic rocking exercise treatment is 4.93 and after being given pelvic rocking exercise treatment to 2.87. Based on the Wilcoxon signed ranks test with a p-value of 0.000 (p-value <0.05) which means that there is a significant difference between the results before and after the pelvic rocking exercise treatment intervention in third trimester pregnant women.

Table 6. Effectiveness of Kinesio Taping and Pelvic Rocking Exercise Treatment on the Level of Back Pain of Third Trimester Pregnant Women at PMB Latifah and PMB Zainab Jambi City in 2023

Pain Scale	N	Mean Rank	p-value
Kinesio Taping	30	34.93	0.041
Pelvic Rocking Exercise	30	26.07	

Based on table 6, it is known that the level of back pain of third trimester pregnant women after the intervention of kinesio taping and pelvic rocking exercise through the Man-Whitney test with a p-value of 0.041 (p-value <0.05) which means that there is a significant difference between the results after the intervention of kinesio taping and pelvic rocking exercise.

The results showed that there was a decrease in the scale of back pain felt by respondents after being given kinesio taping. Before being given kinesio taping, the average pain scale was 6.03 and decreased to 3.50 after being given kinesio taping. The decrease in pain after kinesio taping can be caused by several mechanisms associated with this intervention. Kinesio Taping provides external support to areas affected by pain, such as the lower back. This can help improve posture and reduce the pressure acting on the spine and associated muscles. This structural support can help relieve muscle tension that can cause pain. Kinesio Taping tape placed over the skin can help stimulate blood circulation in the affected area. This increased blood flow can bring more nutrients and oxygen to inflamed or strained tissues, helping to reduce inflammation and speed up the recovery process.

Based on the Wilcoxon test, the Wilcoxon signed ranks test with a p-value = 0.000 (p-value <0.05) which means that there is a significant difference between the results before and after the kinesio taping intervention in third trimester pregnant women, so that the kinesio taping intervention against back pain in third trimester pregnant

women is proven effective in reducing the pain scale.

Research conducted by Suyani (11) shows that there is a decrease in the intensity of back pain in the pre-test and post-test results. This can be seen from the mean value of the post test which is smaller than the mean pre test with a difference of -3.467 where the negative result means that there is a decrease in the average result, with a mean value during the pre test of 5.87 while during the post test of 2.40. The results of the study obtained a p value of 0.000 <0.05, so it can be seen that there is a significant difference between the results of the pre test and post test.

Research conducted by Anisa (12) This application identifies the effectiveness of kinesio taping on the back pain scale of third trimester pregnant women. The results of the application of kinesio taping showed a decrease in the scale of back pain in third trimester pregnant women, namely from pain scale 4 to pain scale.

Research conducted by Muh Tahir (13) kinesio taping can produce a decrease in pain in patients with low back pain, with an average pain reduction of 2.70; The value of pain actuality before giving the intervention was 6.90 ± 1.774 and after giving the intervention obtained a value of 4.20 ± 1.508 with an average difference of 2.70 ± 2.003 .

The researcher draws the conclusion that there is a decrease in back pain after being given a kinesio taping intervention in third trimester pregnant women, namely a decrease in back pain level scores before being given a kinesio taping intervention and after being given kinesio taping.

Based on the results of data processing, the effect of pelvic rocking exercise on reducing back pain in third trimester pregnant women at PMB Latifah and PMB Zainab Jambi City in 2023 before being given the pelvic rocking exercise intervention, namely pregnant women who experienced moderate back pain as many as 23 respondents (70%), and controlled severe pain scale as many as 4 respondents (21%). Whereas after being given the pelvic rocking exercise intervention,

pregnant women who experienced mild pain were 23 respondents (77%), and a moderate pain scale was 7 respondents (23%).

Based on the Wilcoxon signed ranks test with p-value = 0.000 (p-value <0.05) which means that there is a significant difference between the results before and after the pelvic rocking exercise intervention in third trimester pregnant women, so that the pelvic rocking exercise intervention on back pain in third trimester pregnant women is proven to be effective in reducing the pain scale.

Jamieson's theory says that pelvic rocking is an effective way to relax the lower body, especially the pelvic region. This technique is often recommended during labor. To increase relaxation and allow the force of gravity to assist the baby's passage through the birth canal. Thus allowing the progress of the labor process to be faster. In addition, pelvic rocking exercise can reduce lower back pain (9).

Research conducted by Agustin (14) After doing pelvic rocking exercises, most of the eleven people (67%) experienced mild pain, this is due to the movements in pelvic rocking exercises that can help in stretching or stretching the muscles and joints of the pelvis so as to reduce muscle tension and reduce pain intensity. In addition, movements that can be done lying down, crawling or standing can also reduce the pressure of the fetal head on the joints of the pelvis so that the intensity of pain felt by pregnant women will decrease along with this exercise. Suwanti's research found that before being given pelvic rocking care with a scale of 6, and after being given pelvic rocking care 3 times to a scale of 4. With a numerical rating scale measurement questionnaire (15).

Based on Man-Whitney with p-value = 0.041 (p-value <0.05) which means that there is a significant difference between the results after the intervention of kinesio taping and pelvic rocking exercise. The implementation of the intervention in this study, as many as 60 respondents who took part in the study from the beginning to the end, it can be concluded that the results of the intervention

provided included 40 respondents who experienced mild back pain and as many as 20 other respondents experienced moderate back pain.

CONCLUSIONS

Some conclusions obtained from this study include the average value of the back pain scale of third trimester pregnant women before being given kinesio taping treatment 6.03 and pelvic rocking exercise 4.93. The average value of the back pain scale of third trimester pregnant women after being treated with kinesio taping 3.50 and pelvic rocking exercise 2.87. Based on the Wilcoxon Signed Ranks test with a p-value of 0.000 (<0.05) which means that the treatment of kinesio taping and pelvic rocking exercise in third trimester pregnant women is proven effective. Based on the Mann-Whitney test with a p-value of 0.041 (<0.05) which means that there is a significant difference between the results after the treatment of kinesio taping and pelvic rocking exercise. With the conclusion that kinesio taping and pelvic rocking exercise treatment proved effective. to reduce back pain in third trimester pregnant women at PMB Latifah and PMB Zainab.

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