

The Effect Of Strecht Exercise On Low Back Pain In Pregnant Women In The Thirty-Third Trimester At Pati I Public Health Center, Pati District

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Abstract. In the third trimester of pregnancy, discomfort in the lower back occurs due to changes in the musculoskeletal system. The impact of back pain can disrupt the quality of life of pregnant women, such as daily activities, walking, exercise, sleep quality, stress, and insomnia. The purpose of this study was to determine the effect of stretch exercises on low back pain in pregnant women in the third trimester at the Pati I Community Health Center, Pati Regency. The benefit of this study is to increase pregnant women's insight into the benefits of stretch exercises in reducing low back pain intensity. This study used a pre-experimental design with a One Group Pre-Test Post-Test approach. The population in this study were pregnant women in the third trimester with low back pain. Sampling used a purposive sampling technique. A total of 27 respondents were given stretch exercises for one month with a frequency of 8 times, performed twice a week for 10 minutes. Univariate analysis was carried out by calculating the average value. Bivariate analysis used the Wilcoxon Signed Rank Test. Statistical test results show a difference in low back pain in pregnant women in the third trimester before and after stretching exercises. The Asymp.Sig (2-tailed) value is $0.000 < 0.05$. Lower back pain before stretching exercises in pregnant women in the third trimester was categorized as severe pain with a mean value of 7.11, while after the intervention, the mean value was 1.52, and the mild pain category. Pregnant women in the third trimester should practice stretching exercises to relieve lower back pain.

Keywords: Stretch Exercise, Low back pain, Pregnant Women in the Third Trimester

INTRODUCTION

Pregnancy is a process that occurs between the meeting of sperm and ovum in the ovary, known as conception, until it grows into a zygote and attaches to the uterine wall, forms the placenta, and then the product of conception grows and develops until the fetus is born. Pregnancy is divided into three periods: the first trimester (before the 14th week), the second trimester (14-28 weeks), and the third trimester (28-40 weeks) (Kasmiati *et al.*, 2023).

During pregnancy, physical and psychological changes occur. Psychological changes in pregnant women include irritability, anxiety, jealousy, increased emotionality, and irritability. Physical changes experienced by pregnant women include uterine enlargement, breast enlargement, endocrine system changes, changes in the urinary system, nausea and vomiting, and low back pain caused by changes in the musculoskeletal system. This is caused by hormonal changes in the supporting and connective soft tissues, which result in reduced muscle flexibility. Low back pain is a type of back pain that affects the lumbosacral region. This pain is caused by a shift in the woman's center of gravity and posture (Kasmiati *et al.*, 2023).

Low back pain during pregnancy causes fear and anxiety, which can increase stress and the drastic physical changes experienced by the mother. Low back pain and anxiety work synergistically and exacerbate each other (Lilis, 2019).

Research shows that more than 50% of pregnant women in the United States, Canada, Iceland, Turkey, Korea, and Israel experience back pain. A 2014 survey by the University of Ulster found that 70% of 157 pregnant women experienced low back pain (Resmi and Tyarini, 2020). In Indonesia, the prevalence of low back pain in various regions reaches 60-80% (Aprilianti, 2015).

Government efforts to reduce the incidence of low back pain in pregnant women in the third trimester include providing massage therapy around the upper and lower back to provide comfort and reduce pain intensity (Wuriani, 2019). Massage is a form of maternal care that increases a sense of security and improves quality of life, especially for pregnant women. Massage can be performed with varying amounts of pressure and stimulation on various myofascial trigger points throughout the body. Massage can stimulate the body to release endorphins, which act as pain relievers and can create a

feeling of well-being. Massage can be performed with varying amounts of pressure and stimulation applied to various myofascial trigger points throughout the body. Massage can stimulate the body to release endorphins, which act as pain relievers and can create a feeling of well-being (Ministry of Health, 2024).

If left untreated, low back pain can lead to long-term back pain, exacerbate postpartum back pain, and develop chronic back pain, which is more difficult to treat or cure. The impact of chronic back pain on pregnant women can disrupt their quality of life, including daily activities, walking, exercise, sleep quality, stress, and insomnia (Octavia and Ruliati, 2020).

Several pharmacological and non-pharmacological approaches can be used to relieve low back pain. Pharmacological measures include the use of opiates (narcotics), non-opiates/nonsteroidal anti-inflammatory drugs (NSAIDs), adjuvant medications, or coanalgesics. Opiate analgesics include opium derivatives such as morphine and codeine. Non-pharmacological methods that can be done are by means of warm compresses, relaxation techniques, hypnotherapy, massage (Kasmiati et al., 2023b), Do pelvic exercises, such as pregnancy gymnastics, gymball exercises, regular leg stretching, or Kegel exercises, massage, Stretch Exercise, Kinesiotapping (Rejeki, 2018).

Stretching exercises are exercises performed by people with low back pain to relieve pain. Back exercises performed during pregnancy are one of the movements performed in prenatal gymnastics, aimed at optimally restoring biomechanics/disabilities in the posterior and anterior muscles, and helping muscles regain stability. Stretching exercises are easy to perform, can be done independently at home, and are less expensive (Lailiyana, Hamidah, and Wahyuni, 2019).

This is supported by research conducted by Rusmawati, Niah *et al.* in 2021 entitled "The Effectiveness of Pelvic Tilt Exercise on Reducing Back Pain in Third Trimester Pregnant Women in Cimanggu Village, Cimanggu Community Health Center, Pandeglang Regency, 2021." The study, conducted by 48 respondents, showed a significant increase in pain reduction, with a mean score before pelvic tilt exercise therapy of 2.25 to 3.85, and a P-value of 0.000 (Rusniawati, 2022).

A study conducted by Sari, Silvi Amalia in 2022 entitled "The Effect of Back Stretch Exercise on Low Back Pain in Third Trimester Pregnant Women at the Sukabumi Probolinggo Community Health Center" with 10 respondents obtained the results of the statistical test used was a paired sample t-test with a p value of 0.00 ($p > 0.05$). This means that there is an effect of providing Back Stretch Exercise on Low Back Pain in third trimester pregnant women at the Sukabumi Probolinggo Community Health Center (Sari, 2022).

METHODS

This study uses a one group pre and post test design technique, by taking measurements before and after treatment is given, in this study Low Back Pain measurements will be taken before Stretch Exercise, then Low Back Pain will be taken after Stretch Exercise. The population in this study were all pregnant women in the third trimester who experienced Low Back Pain as many as 35 pregnant women, with a sample of 27 people. Sampling used Purposive Sampling technique, namely selecting samples according to inclusion and exclusion criteria. In this study using the NRS instrument, Numeric Rating Scale (NRS), In this method the intensity of pain will be asked to the patient, then the patient is asked to point to a number according to the degree/level of pain felt, the degree of pain is measured on a scale of 0-10.

RESULTS AND DISCUSSION

Low Back Pain Incidence in Third Trimester Pregnant Women Before Stretch Exercises at the Pati I Community Health Center, Pati Regency. Data collected before stretching exercises were performed on third-trimester pregnant women with low back pain. Twenty-two (81.5%) of pregnant women had severe pain. Three (11.1%) had very severe pain, and two (7.4%) had moderate pain.

Back pain is a common complaint in pregnant women, caused by the forward shift of the body's core gravity (Lilis, 2019). Back pain during pregnancy is common, especially in the second and third trimesters. Back pain during pregnancy causes fear and anxiety, which can increase stress and the drastic physical changes experienced by the mother (Kasmiati *et al.*, 2023).

Previous research by Laliyana *et al.* (2024) found that the average intensity of low back pain before stretching exercises was 6.20 (moderate pain score). According to researchers, this is because in the third trimester of pregnancy, changes occur in the musculoskeletal system, caused by hormonal changes in the supporting and connecting soft tissues, which results in reduced flexibility, low back pain in pregnant women will worsen if not treated, so efforts need to be made to reduce low back pain.

Low Back Pain in Third Trimester Pregnant Women After Stretching Exercises at the Pati I Community Health Center, Pati Regency. Data collected after stretching exercises were performed on third-trimester pregnant women with low back pain. Seven respondents (63.0%) had mild pain. Seven respondents (25.9%) had no pain, and three (11%) had moderate pain.

Stretching is a muscle stretching technique that effectively distributes oxygen throughout the body and is a fundamental part of optimal performance. Before beginning any activity, stretching, or warm-up, is essential (Kasmianti *et al.*, 2023). One of the advantages or benefits of stretching is preventing/correcting hyperlordosis. Research shows that physical exercise in pregnant women can reduce pain and improve back pain complications (Octavia and Ruliati, 2020).

Exercise has been shown to increase endorphin levels in the blood by 4-5 times (Dina, 2021). Therefore, the more exercise you do, the higher your endorphin levels, which can reduce pain (Kasmianti *et al.*, 2023). Previous research conducted by Mulhimatil (2024) found that the intensity of back pain in pregnant women in the third trimester before abdominal stretching had a minimum scale of 3 and a maximum scale of 9, with a mean of 5.89 and a standard deviation of 1.272. Meanwhile, pain intensity after abdominal stretching was a minimum scale of 1 and a maximum scale of 5, with a mean of 3.19 and a standard deviation of 1.209.

The researcher believes that stretching exercises are a useful physical exercise for stretching muscles, thereby reducing pain levels. Exercise has been shown to increase endorphin levels in the blood by 4-5 times. The more exercise performed, the higher the endorphin levels, which can reduce pain.

Differences in Low Back Pain in Third Trimester Pregnant Women Before and After Stretching Exercises at the Pati I Community Health Center in Pati Regency. After data processing, it was found that the pain level of pregnant women before stretching exercises was a minimum of 5, with a maximum score of 9 respondents, with a mean of 7.11, and a standard deviation of 1.155. After stretching exercises, the minimum score was 0, with a maximum score of 4 respondents, with a mean of 1.52, and a standard deviation of 1.122. The statistical test results showed an Asymp.Sig value (2-tailed) of 0.000 $< \alpha$ (0.05), thus H_a was accepted, indicating a difference in low back pain in third trimester pregnant women before and after stretching exercises at the Almaira Medika Inpatient Clinic in Lampung in 2025.

One of the pains experienced by pregnant women is back pain. Back pain is one of the most common discomforts during pregnancy. By the seventh month, many women experience lower back pain, and some even experience upper back pain. Most pregnant women experience varying degrees of back pain. As pregnancy progresses, a woman's posture changes to compensate for the weight of the growing uterus. The shoulders are pulled back due to the enlarged abdomen, and to maintain balance, the spine curves inward. Sacroiliac joint relaxation, which accompanies changes in posture, causes varying degrees of back pain after excessive strain, fatigue, bending posture, or lifting (Yuliani, Rofiasari, & Lestari, 2023).

One way to reduce pain is through exercise. Exercise has been shown to increase endorphin levels in the blood by 4-5 times (Wuriani, 2019), so the more exercise you do, the higher your endorphin levels, which can reduce pain (Sari, 2022). Previous research conducted by Mulhimmatul Rifa'ah *et al.* (2020) titled "The Effect of Abdominal Stretching on Back Pain in Third Trimester Pregnant Women." The average score before abdominal stretching was 5.89, while after abdominal stretching it was 3.19. There was a significant decrease (p -value = 0.000), indicating that abdominal stretching has an effect on back pain in pregnant women. The researcher's assumption is that stretching exercises are one way to reduce back pain in pregnant women. Continuous practice will be more effective.

CONCLUSION

Most respondents at the Pati I Community Health Center, Pati Regency, before doing Stretch Exercise had a severe level of pain of 22 respondents (81.5%) and after doing Stretch Exercise had a mild level of pain of 17 respondents (63.0%). There is a difference in Low Back Pain in Pregnant Women in the Third Trimester before and after doing Stretch Exercise at the Pati I Community Health

Center, Pati Regency with an Asymp.Sig (2-tailed) value <0.05, which means that Stretch Exercise has an effect on Low Back Pain.

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