

# PRENATAL GENTLE YOGA ON THE INTENSITY OF LOW BACK PAIN IN THIRD TRIMESTER PREGNANT WOMEN

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**Abstract.** Prenatal Gentle Yoga is a series of yoga movements mothers perform during pregnancy from the first to the third. Prenatal Gentle Yoga affects the decrease in the intensity of lower back pain, where the decrease in back pain will run smoothly with several factors, including prenatal gentle Yoga. This study aims to analyze the effect of prenatal gentle Yoga on the intensity of low back pain in third-trimester pregnant women. The research method used is Quasy Experimental with a one-group pre-test-post test design research design. This study used a purposive sampling technique in third-trimester pregnant women who had antenatal care, with several third-trimester pregnant women as many as 45 people and 30 people or respondents were taken. Data was obtained in this study using questionnaires, observation sheets, and checklists to conduct treatment using the Wilcoxon test. Wilcoxon test result  $p=0.000$  means  $<0.05$ . So, it can be concluded that there is an influence of prenatal gentle Yoga on the intensity of low back pain in third-trimester pregnant women. This research is expected to be a reference for Midwives' third-trimester pregnant women and further research to improve mothers' knowledge and behavior towards prenatal gentle Yoga on the intensity of low back pain.

**Keywords:** Prenatal Gentle Yoga, low back pain, Third Trimester pregnant women.

## 1 INTRODUCTION

Pregnancy is a normal process in which physiological, not pathological, changes occur (Gangakhedhar GR, Kulkarni AP, 2021). Pregnancy causes progressive changes in the body's musculoskel-et al system, which ultimately leads to weight gain and symptoms of lower back discomfort, especially in the third trimester (Walyani, SE, 2014; Fiat F et al, 2022). During pregnancy, the lumbosacral region of the back is often painful. Due to changes in the center of gravity and body posture, back discomfort often worsens as pregnancy progresses (Sukeksi, NT, Kostania, G and Suryani, E, 2018)

As many as 16% of pregnant women with back pain have reported the location of the pain in the first trimester, 67% in the second trimester, and 93% in the third trimester (3,4) 68% of pregnant women in Indonesia re-ported experiencing moderate-intensity back pain, and the remaining 32% reported mild-intensity back

pain. Back discomfort is estimated to affect more than 65% of pregnant women, especially in East Java (Khaerunisa H, 2018). Lower back pain occurs due to a shift in the center of gravity, which causes blood flow to the spine to be lower due to the gravitational pressure of the uterus, which especially occurs at the end of pregnancy (Carvalho et al, 2015; Booth FW, Roberts CK, Laye MJ, 2012). Back pain can last a very long time if not treated immediately, increasing the risk of postpartum back pain and chronic back pain (Lichayati I, Kartikasari RI, 2013).

Yoga is a non-pharmacological treatment that can reduce pain, Prenatal Yoga is a kind of traditional Yoga that has been modified for the physical needs of pregnant women. Yoga during the third trimester of pregnancy is a practical way to relieve pain during pregnancy and speed up labor. Prenatal Yoga is a non-pharmacological complementary treatment that helps reduce discomfort (Sindhu P, 2014; Gratz, M. K., & Sola, K. R, 2022).

## 2 METHODE

This study used a quasi-experimental design with a one-group pre-test and post-test design. One group pre-test-post test design is a pre-experimental design in which there are pre-tests (tests before being given treatment) and post-tests (tests after being given treatment) in one group (Sugiyono, 2019). This study will compare the pre-test and post-test values in third-trimester pregnant women before and after being given the Prenatal Gentle Yoga treatment. Then, in the next stage, the pre-test and post-test data will be analyzed to see whether there is a significant effect on third-trimester pregnant women before and after being given the Prenatal Gentle Yoga treatment (Fauzi, 2022)

The population in this study was all pregnant women in the third trimester who had ANC from 28-40 weeks of gestation in June- July 2023, totaling 45 pregnant women. The sample is part of the number and characteristics possessed by the population, namely 30 pregnant women, using a purposive sampling technique. Data processing using editing, coding, scoring, and tabulating.

The procedures in this research include 1) identifying the problem and research objectives, 2) determining the research design, 3) compiling research instruments, 4) providing a pre-test in the form of an observation sheet for the back pain scale, 5) providing treatment with yoga exercises, 6) providing a post-test in the form of an observation sheet for the back pain scale, 7) analyzing the test results, 8) making conclusions from the research results, 9) making a research report.

The data collection technique uses tests; the test instrument is a pain scale observation sheet filled in before and after giving yoga exercise treatment. The pain scale used is based on a pain scale with a scale range of 0 – 10. Patients are asked to rate their pain using the Numerical Rating Scale (NRS). 0 means no pain, while ten means the patient is in extreme pain and cannot stand it. If patients are asked to fill out a questionnaire form using a scale of 1-10, it is easy to interpret this measurement accurately (Sudoyo, 2014).

Data analysis uses the Wilcoxon test and calculates the N-Gain value using the normalized gain (Meltzer, 2002). The normalized gain score criteria can be seen in Table 1.

**Table 1.** N-Gain Value Criteria

<b>N Gain</b>	<b>Category</b>
$g > 0,7$	High
$0.3 \leq g \leq 0.7$	Medium
$g < 0.3$	Low

**Table 2.** Category of N-Gain Effectiveness Interpretation

<b>Percentage (%)</b>	<b>Interpretation</b>
< 40	Ineffective
40 - 55	Less effective
56 - 75	Effective enough
> 76	Effective

### 3 RESEARCH RESULTS

#### 3.1 Pre-Test of the Effect of Prenatal Gentle Yoga on the Intensity of Lower Back Pain in Third-Trimester Pregnant Women.

**Table 3.** Pre-Test Results of the Effect of Prenatal Gentle Yoga on the Intensity of Lower Back Pain in Third Trimester Pregnant Women.

<b>Pre-Test</b>	<b>Frequency</b>	<b>Percentage</b>
No Pain (0)	0	0%
Mild Pain (1-3)	10	33,3%
Moderate Pain (4-6)	20	66,7%
Severe Pain (7-9)	0	0%
Very Severe Pain (10)	0	0%
Total	30	100%

Source: Research Data, 2023

Table 3 shows the pre-test results of the effect of Prenatal Gentle Yoga on the intensity of low back pain in third-trimester pregnant women; as many as ten people experienced mild pain with a percentage (33.3%), and as many as 20 people experienced moderate pain with a percentage (66, 7%).

### 3.2 Post-Test The Effect of Prenatal Gentle Yoga on the Intensity of Lower Back Pain in Third Trimester Pregnant Women

**Table 4.** Post-Test Results of the Effect of Prenatal Gentle Yoga on the Intensity of Lower Back Pain in Third Trimester Pregnant Women.

Post-Test	Frekuensi	percentage
No Pain (0)	10	33,3%
Mild Pain (1-3)	20	66,7%
Moderate Pain (4-6)	0	0%
Severe Pain (7-9)	0	0%
Very Severe Pain (10)	0	0%
Total	30	100%

Source: Research Data, 2023

Table 4 shows the post-test results of the effect of Prenatal Gentle Yoga on the intensity of low back pain in third-trimester pregnant women; as many as ten people no longer experience pain with a percentage (33.3%), and as many as 20 people experience mild pain with a percentage (66.7%).

### 3.3 Results of the Wilcoxon Test on the Effect of Prenatal Gentle Yoga on the Intensity of Lower Back Pain in Pregnant Women in the Third Trimester

**Table 5.** Results of the Wilcoxon Test on the Effect of Prenatal Gentle Yoga on the Intensity of Lower Back Pain in Pregnant Women in the Third Trimester

Ranks				
		N	Mean Rank	Sum of Ranks
Post-test Prenatal Gentle Yoga - Pre-test Prenatal Gentle Yoga	Negative Ranks	30 <sup>a</sup>	15,50	465,00
	Positive Ranks	0 <sup>b</sup>	,00	,00
	Ties	0 <sup>c</sup>		
	Total	30		

Test Statistics	
	Post-test Prenatal Gentle Yoga – Pre-test Prenatal Gentle Yoga
Z	-4,968 <sup>b</sup>
Asymp. Sig. (2-tailed)	,000

Source: Research Data, 2023

Based on the results of the Wilcoxon test calculations on the overall data, it was found that a significance value (sig.) of 0.000 was less than 0.05; this indicated that there was an effect of Prenatal Gentle Yoga on the intensity of low back pain in third-trimester pregnant women. The results of the calculation of the N-Gain score show the effectiveness of the yoga exercise method applied to pregnant women in the third trimester. The results of the N-Gain score, according to the interpretation of its effectiveness, are in the effective category with an average of 79.28% (> 76%), while

based on the N- The gain of the method used is in the high category with an N-Gain score of 0.79 ( $g > 0.7$ ).

## **4 DISCUSSION**

### **4.1 Intensity of Lower Back Pain in Pregnant Women in the Third Trimester Before Prenatal Gentle Yoga**

The intensity of back pain before prenatal gentle Yoga was carried out in third-trimester pregnant women with 30 respondents; most experienced moderate intensity back pain with 20 respondents (66.7%).

Lower back pain is a disturbing sensation that causes discomfort in the back area. This discomfort affects the back area from the ribs or lower costal angle to the coccyx or lumbosacral spine. Apart from that, additional areas of the body can experience back pain, including the upper back and groin (Sinclair M et al, 2014; Vrbanić TS. Krizobolja, 2011)

Changing body center of gravity, enlarged uterus, posture, sleeping position, increased hormones, twin pregnancies, history of pain from previous pregnancies, and obesity are variables that may contribute to lower back discomfort in pregnant women (Mafikasari, A and Kartikasari IR, 2015)

Intensity of Lower Back Pain in Third Trimester Pregnant Women After Prenatal Gentle Yoga. The intensity of back pain after prenatal gentle Yoga was carried out in third-trimester pregnant women with a total of 30 respondents; most experienced a decrease in the intensity of back pain to a mild intensity with a total of 20 respondents (66.7%).

Prenatal gentle Yoga is generally beneficial for overall body health, blood circulation, digestion, focus and mental clarity (Mardiyanti and Anggasari, 2021). Another benefit of prenatal gentle Yoga is reducing back pain. Yoga has several benefits for back pain, and these are especially important because back discomfort can cause long-term problems after giving birth. Many positions that relieve stress and tension in the lower back are taught in yoga classes.

### **4.2 Analysis of Lower Back Pain Intensity in Third-Trimester Pregnant Women Before and After Prenatal Gentle Yoga**

Results of the Wilcoxon Test Statistical Test, based on the output of the statistical test, it is known that Asymp.Sig. (2-tailed) It is worth 0.000. Because this value is  $< 0.05$ , it can be concluded that  $H_a$  is accepted or means that Prenatal Gentle Yoga influences the intensity of lower back pain in third-trimester pregnant women.

## **5 CONCLUSIONS AND SUGGESTIONS**

Based on the results of research and data processing that has been carried out, it can be concluded that Prenatal Gentle Yoga influences the intensity of lower back pain in third-trimester pregnant women before and after prenatal gentle Yoga. In contrast, the magnitude of the influence of the yoga exercise method applied shows

the N score. -According to the effectiveness interpretation, the gain is in the effective category with an average of 79.28%, while based on the N-Gain method used, it is in the high category with an N-Gain score of 0.79 ( $g > 0.7$ ). The suggestion that researchers can give is that future researchers are expected to be able to develop a method or frequency of yoga exercises for pregnant women in the third tri-mester so that the effects shown on mothers and babies can be seen before and after being given yoga exercises.

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