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Differences in the Level of Anxiety of Pregnant Women in the Third Trimester in Facing Their Delivery Prenatal Yoga

<u>Kadek Sudiari</u>^{1*}, Ni Wayan Armini¹, Asep Arifin Senjaya¹, Ni Wayan Ariyani¹, Gusti Ayu Eka Utarini¹

¹ Poltekkes Kemenkes Denpasar, Indonesia

*Corresponding author: kadeksudiari8@gmail.com

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ABSTRACT

Background: The Maternal Mortality Rate in Bali Province in 2019 was 67.6 per 100,000 live births and in 2020 it has increased to 83.8 per 100,000 live births. Psychological changes that occur in pregnant women often cause anxiety, especially in third trimester pregnant women. Pregnant women who experience excessive anxiety will have a negative impact so it can trigger uterine contractions. It is proven that anxiety in pregnancy can be reduced through physical exercise, one of which is yoga. Yoga in pregnancy is more effective in reducing anxiety, because in yoga besides doing physical exercises pregnant women are equipped with positive affirmations so that mothers can accept physiological changes during pregnancy and childbirth. This writing aims to determine the difference in the level of anxiety of third trimester pregnant women in dealing with labor given prenatal yoga at the Pratama Agung Medika Clinic. **Method**: Using a quasi-experimental design with a one groups pretest-posttest design, it was carried out in February-April 2023. Respondents in this writing were 33 pregnant women in their third trimester who met the inclusion and exclusion criteria. Retrieval of data in this writing using a questionnaire to determine the level of anxiety of pregnant women. **Result**: The results of this study indicate a significance level of α 0.05 with a p value <0.001. Value (Z count) -4.583 > (Z table) 1.96. **Conclusion**: This means that h_0 is rejected and H_a is accepted or there are differences in the level of anxiety in third trimester pregnant women before and after prenatal yoga.

Keywords: Prenatal Yoga, Anxiety, Pregnancy



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INTRODUCTION

Pregnancy is a physiological process that occurs in every woman, pregnancy can occur due to the meeting of sperm cells and egg cells in the uterus¹. Many things can happen to the mother during pregnancy, both physical changes and psychological changes in the mother. Changes that occur during pregnancy tend to cause mothers to feel anxious and this anxiety will increase as the mother's gestational age increases. If this anxiety is not treated immediately, it can cause problems for the mother and baby, especially during childbirth, including weak maternal uterine contractions, prolonged maternal labor, fetal distress, and increased maternal blood pressure due to anxiety².

The percentage of anxiety experienced by pregnant women in several countries varies. In high-income countries the percentage of antenatal anxiety is estimated to reach 7-20%³. Meanwhile, in low- and middle-income countries it reaches more than 20%. In Indonesia, around 28.7% of 107,000,000 people experience anxiety. A person who experiences protracted anxiety will cause anxiety disorders which are at risk of experiencing stress and depression. Women who experience anxiety during pregnancy are more likely to experience abnormal labor and can even have complications resulting in maternal and fetal death. The Maternal Mortality Rate is a measure of the quality of health services for mothers. Based on data from WHO, in 2017 the maternal mortality rate was 211 per 100,000 live births⁴. The maternal mortality rate in Indonesia in 2015 was 35 per 100,000 live births⁵. In 2020, the maternal mortality rate in Bali Province increased from $67.6 \text{ per } 100,000 \text{ live births in } 2019 \text{ to } 83.8 \text{ per } 100,000 \text{ in } 2020^6.$

During the pregnancy process, physiological, and hormonal changes occur. Psychological changes that occur in pregnant women often cause anxiety, especially in pregnant women in the third trimester, this is due to the enlargement of the womb and the closer the delivery process is. The anxiety index during pregnancy in third trimester pregnant women varies greatly, from mild to severe symptoms⁷. Anxiety in pregnant women is an emotional response that occurs due to the mother's concerns about the welfare of herself and the fetus, the birth process, the period after giving birth and when she has changed her role to become a mother8.

Pregnant women who experience excessive anxiety will affect the development and growth of the fetus in the womb. This condition can result in stunted fetal growth or intrauterine growth restriction (IUGR) and disturbances in the fetal heart rate if the pregnancy is approaching delivery. Several research results show that anxiety in pregnant women is related to the incidence of babies with low birth weight (LBW)⁹. The results of other research found that anxiety among pregnant women is related to the high incidence of caesarean section (SC), both planned and unplanned¹⁰.

Yoga is a sport that has been proven to reduce anxiety during pregnancy. Yoga was chosen because it is cheap, easy to implement, and beneficial for physical and psychological health. Apart from that, in yoga there are positive affirmation exercises which can provide calm so that the mother is able to accept the changes that occur in her pregnancy11. Yoga in



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pregnancy is more effective in reducing anxiety, because in yoga, apart from physical exercise, pregnant women are equipped with positive affirmations so that mothers can accept physiological changes during pregnancy and childbirth¹¹.

Research conducted by Hayati and Maharani¹² on the Effect of Prenatal Gentle Yoga on the Anxiety Level of Pregnant Women Facing Childbirth shows that prenatal gentle yoga has a significant effect on reducing the anxiety level of pregnant women in facing childbirth with a pvalue <0.001. The results of Ashari, Pongsifeld and Mikhrunnisai¹³ research on the Effect of Prenatal Yoga Exercises on Reducing Anxiety in Pregnant Women in the Third Trimester show that yoga exercises in the prenatal stage have an influence on reducing the incidence of anxiety in pregnant women with a p-value of 0.000.

This research was conducted at the Pratama Agung Medika Clinic, Klungkung Regency because prenatal yoga is routinely carried out in that place and until now there has never been any research on the effect of prenatal yoga on anxiety levels in that place. Based on an initial survey conducted in August 2022 at the Pratama Agung Medika Clinic, the number of pregnant women in the third trimester was 35 people and in September 2023 there were 30 people. Based on interviews with twelve people interviewed, ten people said they were anxious about giving birth and said they did not understand the benefits of prenatal yoga practice, two people said it was normal.

Based on the background above, researchers want to conduct more in-depth research on the differences in anxiety levels of pregnant women in the third trimester when facing childbirth using prenatal yoga. The aim of this research was to determine the differences in

anxiety levels of pregnant women in the third trimester when facing childbirth by prenatal yoga at the Pratama Agung Medika Clinic, Klungkung Regency.

METHOD

This research uses a quasi-experimental research method with a one group pretestposttest design. This research was carried out at the Pratama Agung Medika Clinic, Klungkung Regency in February 2023 - April 2023. The population in this study was third trimester pregnant women who came to the Pratama Agung Medika Clinic from February to April 2023. The number of samples in this study was 33 respondents with non-probability sampling technique, a type of purposive sampling which is determined based on inclusion and exclusion criteria. The inclusion criteria in this study were pregnant women in the third trimester who were willing to be respondents in the study, all pregnant women who had a history of pregnancy in the third trimester who were at the Pratama Agung Medika Clinic and had good relationships with their family and people around them. The exclusion criteria in this study were pregnant women who did not fully participate in prenatal yoga from the beginning to the end of the study and did not comply with the SOP. The type of data collected is primary data obtained from the results of the STAI questionnaire to assess the level of anxiety in pregnant women before and after treatment. The data analysis method used in this research is univariate and bivariate analysis with statistical tests using the Wilcoxon test.

RESULTS

Pratama Agung Medika Clinic was established to assist the community in obtaining

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optimal, fast, and affordable healthcare services, supporting the government's efforts to improve public health. Pratama Agung Medika Clinic always prioritizes patient satisfaction by providing comprehensive facilities, including general services, dental care, maternal and child health services, a laboratory, home care, and serving patients with national health insurance program (BPJS). Additionally, prenatal yoga classes are available every Monday and Thursday from 3:00 PM to 6:00 PM, guided by trained midwives with prenatal yoga instructor certification.

THE CHARACTERISTICS OF RESEARCH SUBJECTS

The characteristics of respondents based on research results at the Pratama Agung Medika Clinic in 2023 are presented in Table 1.

Table 1.
Characteristics of Research Subjects at the Pratama Agung Medika Clinic.

Characteristics	f	%
< 20 years old	0	0
20 – 30 years old	29	87.9
>30 years old	4	12,1
Doesn't work	20	60,6
Private sector	13	39,4
High school	13	39,4
University	20	60,6
Primigravida	14	42,4
Multigravida	19	57,6

Table 1 above provides an overview of respondents' characteristics, including age, occupation, education level, and parity. According to the table, the majority of respondents were in the 20-30 age range, accounting for 87.9% or 29 respondents. Most respondents were not employed, comprising

60.6% or 20 respondents. In terms of education, a significant proportion had completed high school or university, with tertiary education being the majority at 60.6% or 20 respondents. Additionally, the majority of respondents were multigravida, representing 57.6% or 19 respondents.

Anxiety Levels of Third Trimester Pregnant Women Before Implementing Prenatal Yoga in Preparation for Childbirth

The results of anxiety level observations among third-trimester pregnant women facing labor before implementing prenatal yoga at Pratama Agung Medika Clinic in Klungkung Regency 2023 are presented in Table 2 below:

Table 2.
Anxiety Levels of Third-Trimester Pregnant
Women Before Prenatal Yoga Practice in
Preparation for Childbirth.

Anxiety levels	F	%		
Mild	8	24,2		
Moderate	24	72,7		
Severe	1	3,0		
Total	33	100		

According to Table 2 above, out of the 33 respondents studied, the majority, specifically 24 respondents (72.7%), were categorized as experiencing moderate anxiety before prenatal yoga.

Based on the research and data analysis, it is evident that among the 33 respondents studied, the majority (72.7%) experienced moderate anxiety before engaging in prenatal yoga. Additionally, 24.2% reported mild anxiety, while 3.0% experienced severe anxiety. These findings indicate that most respondents face anxiety when preparing for the birth process.



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subjective Anxiety is а individual often experience, which manifests dysfunctional behavior which is defined as feelings of difficulty and distress regarding events that are not known with certainty¹⁴. The cause of the anxiety experienced by respondents in this study was due to the mother's concerns about the welfare of herself and the fetus, the birth process, the period after giving birth and when she changed her role to become a mother. This is in line with what was stated by Alza⁸.

According to Tyastuti¹⁵, several factors influencing maternal anxiety include the mother's age, occupation, education, and pregnancy history. As indicated in Table 2, the majority of respondents fell within the 20-30 age group, comprising 87.9% of the sample. Age is closely linked to one's level of maturity; typically, older individuals demonstrate greater mental maturity, rational thinking, wisdom, and emotional control, resulting in improved stress management.

Analyzing factors such as education, employment status, and pregnancy history, it's evident that 20 respondents (60.6%) are housewives or do not work, while 13 respondents (39%) are employed in the private sector. According to Tyastuti¹⁵, the anxiety experienced by pregnant women is often associated with their employment status. Working pregnant women commonly worry about job security during pregnancy and postpartum periods. Pregnancy history also plays a significant role in maternal anxiety. Firsttime pregnancies tend to generate different anxieties compared to subsequent pregnancies. This distinction arises because women with prior pregnancy experience have already faced the challenges of pregnancy care. Negative experiences in previous pregnancies

heighten anxiety and fear of a repeat experience¹⁶. This observation aligns with our study's findings, where all primigravida respondents exhibited moderate anxiety when facing childbirth before engaging in prenatal yoga. In contrast, multigravida mothers displayed varying anxiety levels: 8 respondents (42.1%) reported mild anxiety, 10 respondents (52.6%) reported moderate anxiety, and one respondent (5.3%) reported severe anxiety. Further investigation by researchers revealed that the mother with severe anxiety had a history of abortion during her first pregnancy.

experienced by pregnant Anxiety women is a significant concern for healthcare professionals, especially midwives, who serve as primary caregivers for pregnant women. This is because anxiety during pregnancy can have a profound the intrauterine impact on development¹⁷. environment and fetal According to Rubertsson et al¹⁸, anxiety has the potential to increase the fear of childbirth threefold and raise the likelihood of cesarean section by 1.7 times. High levels of anxiety during pregnancy can also influence the neurological development of the fetus, which in turn affects the child's cognitive, emotional, and behavioral development throughout childhood¹⁹.

Level of Anxiety of Pregnant Women in the Third Trimester in Facing Childbirth After Implementing Prenatal Yoga

The results of observations of the anxiety levels of pregnant women in the third trimester in facing childbirth after implementing prenatal yoga once a week with a duration of 60 minutes for one month at the Pratama Agung Medika Clinic, Klungkung Regency 2023 are presented in Table 3 below:



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Table 3.

Level of Anxiety of Pregnant Women in the Third Trimester in Facing Childbirth After Implementing Prenatal Yoga

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Anxiety level	f	%				
Mild	28	84,8				
Moderate	5	15,2				
Severe	0	0				
Total	33	100				

Based on table 3 above, it can be seen that 33 respondents studied, after doing prenatal yoga, the majority of respondents were categorized as experiencing moderate anxiety, namely 28 respondents (84.8%). Based on the results of research and data analysis, it is evident that prenatal yoga has a positive impact on reducing anxiety levels among third-trimester pregnant women facing childbirth. Among the 33 respondents studied, the majority reported experiencing moderate anxiety (84.4%), while 15.2% experienced no anxiety, and none reported severe anxiety. These results indicate a significant decrease in anxiety levels among respondents after participating in prenatal yoga.

Prenatal yoga is a modification of hatha yoga adapted to the conditions of pregnant women. The aim of prenatal yoga is to prepare pregnant women physically, mentally, and spiritually to face the birth process²⁰. The prenatal yoga movements performed by pregnant women consist of 18 movements, namely centering exercises, breathing exercises (pranayama), warming up, core movements consisting of stabilization (mountain pose/ tadasana, tree pose/ vrksasana, cow pose-cat pose/ bitilasana marjarisana), stretching (stretching neck muscles, standing lateral stretch ardhakati chakrasana, triangle trikonasana, revolved head to knee pose / parivrtta janu sirsasana, twisting variation/janu sirsasana, stretching waist muscles, knee muscles and feet), preparation for the birth process which consists of bound angle pose/baddha konasana, garland pose/malasana and pushing exercises. Relaxation movements consist of melting heart pose (anahatasana) and a comfortable sleeping position (savasana).

Prenatal yoga encompasses a range of movements, such as relaxation techniques, posture adjustments, breathing exercises, and meditation. These movements are deliberately performed at a slower pace, tailored to the physical abilities of pregnant women²¹. The practice of yoga is known to alleviate muscle tension and enhance focus and concentration, thereby promoting mental tranquility and instilling confidence in expectant mothers as they approach the birthing process¹⁷.

In this study, prenatal yoga sessions were conducted once a week, each lasting 60 minutes, and held four times over the course of one month. The sessions were led by trained midwives at the Pratama Agung Medika Clinic. During the implementation process, all respondents actively participated in every training session and displayed great enthusiasm, successfully following all the instructed movements. According to Einion¹¹, engaging in prenatal yoga can help pregnant women achieve relaxation, calmness, and reduced anxiety during pregnancy.

Differences in the Anxiety Levels of Pregnant Women in the Third Trimester in Facing Childbirth Before and After Doing Prenatal Yoga at the Pratama Agung Medika Clinic

The analysis used in this research is a non-parametric statistical test, namely the Wilcoxon signed rank test to compare differences in the anxiety levels of third



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trimester pregnant women in facing labor before and after prenatal yoga at the Pratama Agung Medika Clinic 2023. The results of the Wilcoxon signed rank test are presented in the table. 4 following:

Tabel 4.

Differences in the Anxiety Levels of Pregnant Women in the Third Trimester in Facing Childbirth

Before and After Doing Prenatal Yoga at the Pratama Agung Medika Clinic

Prenatal Yoga	Anxiety Levels						Score Z	Score p		
	M	lild	Moderate Severe Total							
	f	%	f	%	f	%	f	%	-4.583	< 0,001
Before	8	24,3	24	72,7	1	3,0	33	100		
After	28	84,8	5	15,2	0	0	33	100		

Based on the results of the analysis in Table 4 above the results of the Wilcoxon signed rank test, the difference in the level of anxiety of pregnant women in the third trimester in facing labor before and after prenatal yoga at the Pratama Agung Medika Clinic at a significance level of α 0.05, obtained a p value < 0.001. Value (Z count) -4.583 > (Z table) 1.96. This means that H_{0} is rejected, and H_{a} is accepted or there is a difference in the level of anxiety in third trimester pregnant women before and after doing prenatal yoga at the Pratama Agung Medika Clinic where before doing prenatal yoga most of the respondents experienced moderate anxiety and after doing prenatal yoga most of respondents categorized the were as experiencing moderate anxiety.

DISCUSSION

The results of this study are in line with Jiang et al²² which shows that prenatal yoga is a safe and effective exercise to help pregnant women reduce complaints of anxiety and lower back pain. Prenatal yoga can reduce stress and pain levels during pregnancy and childbirth²³. According to Sari²⁴, there is a relationship between prenatal yoga and the mother's physical readiness during pregnancy with a p

value <0.05. Research conducted by Maharani¹² also found that prenatal yoga exercises carried out 4 times for 4 weeks had a significant effect on reducing the anxiety level of pregnant women in facing childbirth.

The reduction in anxiety observed in this study aligns with the theory proposed by Vijayalakshmi et al²⁵. According to this theory, engaging in yoga movements directly impacts the hypothalamus, which, in turn, influences the autonomic nervous system. This influence results in a reduction in sympathetic nerve activity while increasing parasympathetic nerve activity. Yoga serves to inhibit the escalation of sympathetic nerves, effectively reducing the levels of hormones associated with bodily dysregulation. The parasympathetic nervous system, which opposes the sympathetic system's functions, slows down, or weakens the activities of the body's internal organs. It signals the adrenal medulla, leading to the release of catecholamines like epinephrine (adrenaline) and norepinephrine (noradrenaline) into the bloodstream. Therefore, heart rate, breathing rhythm, blood pressure, muscle tension, metabolic rate, and the production of stressinducing hormones decrease.



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influences the hypothalamus to suppress CRH (corticotropin-releasing hormone) secretion. This, in turn, affects the anterior lobe of the pituitary gland, leading to the suppression of ACTH (adrenocorticotropic hormone) release. As a result, the production of adrenal hormones and cortisol decreases, and the anterior lobe pituitary gland releases endorphins²⁶.

The results obtained in this study indicate the effectiveness of prenatal yoga in reducing anxiety levels among third-trimester pregnant women when preparing for childbirth. These findings suggest that maternal anxiety can be alleviated through prenatal yoga, as the yoga exercises promote physical relaxation and mental calmness. Engaging in prenatal yoga also fosters a profound sense of tranquility, allowing positive energy to accumulate in the body and achieving emotional balance. This is also balanced by the respondent's activeness and routine in participating in yoga exercises.

CONCLUSION AND SUGGESTIONS

The conclusion from the results of this study is that there is a significant difference in the level of anxiety of third trimester pregnant women in facing labor before and after prenatal yoga at the Pratama Agung Medika Clinic. There was a decrease in the anxiety level of pregnant women in the third trimester after doing prenatal yoga. The advice that researchers can convey is to service agencies. Prenatal yoga can be applied in various health services as a nonpharmacological method and complementary therapy in dealing with complaints that are often felt by pregnant women, such as anxiety during the birth process. Pregnant women are expected to do prenatal yoga regularly to reduce anxiety during pregnancy.

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