

Differences Between the Combination of Maternity Pillow Dual Wedge and Prenatal Yoga Compared with Prenatal Yoga on Anxiety Levels Among Third-Trimester Primigravida Women

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ABSTRACT

Third-trimester primigravida women often experience anxiety due to physical and psychological changes before childbirth. A preliminary survey at Afyah Clinic, Gedangan, Sidoarjo, found that 30 out of 37 third-trimester primigravida women (81.08%) experienced anxiety. One non-pharmacological intervention that may reduce anxiety is the combination of a Maternity Pillow Dual Wedge and prenatal yoga. To determine the anxiety levels of third-trimester primigravida women before and after the administration of a Maternity Pillow Dual Wedge combined with prenatal yoga at Afyah Clinic, Gedangan, Sidoarjo. This study employed a quasi-experimental Two-Group Pretest–Posttest Control Design. The sample consisted of 30 respondents, divided into intervention and control groups of 15 each, selected through purposive sampling. Anxiety levels were measured using the PRAQ-R2 questionnaire. Data were analysed using the Paired Sample T-Test and Independent Sample T-Test. The Paired Sample T-Test showed a p-value of 0.000, indicating that the combination of a Maternity Pillow Dual Wedge and prenatal yoga significantly reduced anxiety levels among third-trimester primigravida women. The Independent Sample T-Test yielded a p-value of 0.457, indicating no significant difference between the intervention and control groups. The combination of a Maternity Pillow Dual Wedge and prenatal yoga was effective in reducing anxiety among third-trimester primigravida women and has the potential to be applied as a non-pharmacological intervention in midwifery care.

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Introduction

Anxiety is one of the most common psychological problems experienced during pregnancy, particularly in the third trimester when women face physical, hormonal, and emotional changes in preparation for childbirth. Concerns regarding labour pain, fetal well-being, delivery complications, and readiness for motherhood may increase anxiety levels among pregnant women, especially primigravida women who lack previous childbirth experience (World Health Organisation [WHO], 2022).

Globally, maternal mental health remains a significant public health concern. The World Health Organisation reported that approximately one in five pregnant women experiences mental health disorders, including anxiety and depression, during pregnancy and the postpartum period, with the highest prevalence occurring during the third trimester. In developing countries, the prevalence of mental health disorders reaches 15.6% during pregnancy and 19.8% after childbirth (WHO, 2022). In Indonesia, the prevalence of common mental disorders among pregnant women is estimated at 12.6%.

At the provincial level, the East Java Health Office reported that approximately 60% of pregnant women experience mild to severe anxiety before childbirth (East Java Health Office, 2022). Previous studies conducted in East Java further support these findings. A study in Surabaya found that 56.8% of third-trimester primigravida women experienced high anxiety levels related to childbirth and fetal conditions (Kambu et al., 2023), while a study in Sidoarjo reported that more than 55% of pregnant women experienced anxiety before delivery (Jayanti, 2019).

A preliminary survey conducted at Afiyah Clinic, Gedangan, Sidoarjo, from 6–12 October 2025 showed that 30 out of 37 third-trimester primigravida women (81.08%) experienced anxiety. Most participants reported feeling tension, worry, and fear regarding labour and delivery. These findings indicate that anxiety remains a substantial psychological issue among pregnant women and highlight the need for effective, practical, and safe interventions within midwifery services.

Several non-pharmacological interventions have been reported to reduce anxiety during pregnancy. The use of maternity pillows has been shown to improve physical comfort, sleep quality, and emotional well-being among pregnant women. Munafiah et al. (2024) reported that the use of a maternity pillow reduced the proportion of women with moderate-to-severe anxiety from 65% to 20%. Similarly, Rahmawati et al. (2024) demonstrated that maternity pillow use significantly reduced stress and anxiety among third-trimester pregnant women. In addition, prenatal yoga has been widely recognised as an effective intervention for reducing anxiety through breathing exercises, stretching, meditation, and relaxation techniques. Previous studies reported that prenatal yoga improves psychological well-being and significantly decreases anxiety levels among pregnant women (Holden et al., 2019; Ram, 2024).

Although previous studies have examined the effects of maternity pillows and prenatal yoga separately, evidence regarding the combined use of a *Maternity Pillow Dual Wedge* and prenatal yoga remains limited. Most existing studies have focused on a single intervention and have not compared the effectiveness of a combined intervention with prenatal yoga alone. Therefore, the novelty of this study lies in evaluating the combined effect of a *Maternity Pillow Dual Wedge* and prenatal yoga on anxiety levels among third-trimester primigravida women and comparing it with prenatal yoga as a standard non-pharmacological intervention.

Based on the high prevalence of anxiety among third-trimester primigravida women and the limited evidence regarding combined non-pharmacological interventions, this study aimed to analyse the differences between the combination of a *Maternity Pillow Dual Wedge* and prenatal yoga and prenatal yoga alone on anxiety levels among third-trimester primigravida women at Afiyah Clinic, Gedangan, Sidoarjo.

Method

This study employed a quantitative quasi-experimental design using a *Two-Group Pretest–Posttest Control Design*. The study was conducted at Afiyah Clinic, Gedangan, Sidoarjo, from

December 2025 to March 2026. The population consisted of 37 third-trimester primigravida women attending antenatal care at the clinic. A total of 30 respondents were selected using purposive sampling.

The inclusion criteria were third-trimester primigravida women aged 20–35 years who were willing to participate in the study and able to communicate effectively. The exclusion criteria were pregnant women with pregnancy complications, diagnosed psychological disorders, a history of severe anxiety disorders, those receiving medications that could affect anxiety levels, and respondents who did not complete the intervention period.

After all participants met the inclusion and exclusion criteria, they were randomly assigned by the researcher into either the intervention group (n=15) or the control group (n=15). The intervention group received a combination of *the Maternity Pillow Dual Wedge and prenatal yoga*, while the control group received only prenatal yoga.

Before the intervention, anxiety levels of all respondents were assessed using the *Pregnancy Related Anxiety Questionnaire-Revised 2 (PRAQ-R2)* as a pre-test measurement. The intervention group received a *Maternity Pillow Dual Wedge* to be used during rest and sleep for 14 consecutive days. The pillow was positioned to support the abdomen and back, improving comfort and relaxation. In addition, participants attended prenatal yoga sessions once a week for 30–60 minutes, in accordance with the standard operating procedure (SOP). The control group participated in prenatal yoga sessions with the same frequency and duration but did not receive the *Maternity Pillow Dual Wedge*. Following the intervention period, anxiety levels were reassessed using the same questionnaire as a post-test measurement.

The research instrument used was the *Pregnancy Related Anxiety Questionnaire-Revised 2 (PRAQ-R2)*. Data analysis was performed using the Paired Sample T-Test to assess changes in anxiety levels before and after the intervention, and the Independent Sample T-Test to determine differences between groups at $\alpha=0.05$.

This study received ethical exemption approval from the Health Research Ethics Committee of the Faculty of Health Sciences, Universitas PGRI Adi Buana Surabaya (No.013/Ad.2/KEPK-FIKes/V/2026). The study was declared ethically eligible and met the seven ethical feasibility standards established by the committee.

Results

Table 1 presents the characteristics of respondents in both groups. All respondents in both groups were aged 20–35 years (100%). The mean age was 23.93 years in the *Maternity Pillow Dual Wedge and prenatal yoga* group and 24.47 years in the prenatal yoga group. Based on gestational age, most respondents were at 28–32 weeks, accounting for 60.00% of the intervention group and 53.33% of the control group. The mean gestational age was 31.73 weeks in the intervention group and 32.40 weeks in the control group. Most respondents had secondary education, representing 53.33% of the intervention group and 66.67% of the control group. Regarding occupation, the largest proportion of respondents in the intervention group worked in the private sector (40.00%), whereas in the control

group, most respondents were housewives (46.67%). Homogeneity testing showed p-values of 0.813 for age, 0.983 for gestational age, 0.224 for educational level, and 0.042 for occupation.

Table 1. Characteristics of Third-Trimester Primigravida Respondents at Afyah Clinic, Gedangan, Sidoarjo, 2026

Characteristics	Combination of Maternity Pillow, Dual Wedge, and Prenatal Yoga			Prenatal Yoga			P-value Uji Laven's
	Mean±SD Median;Min- Max	F= 15	%	Mean±SD Median;Mi n-Max	F =15	%	
Age (years)							
<20	23,93±2,658	0	0,00		0	0,00	0,813
20-35	24,00;20-28	15	100,00	24,47±2,532	15	100,00	
>35		0	0,00	24,00;21-29	0	0,00	
Gestational Age							
28-32 Weeks	31,73±2,251	9	60,00	32,40±2,261	8	53,33	0,983
33-36 Weeks	32,00;28-35	6	40,00	32,00;29-36	7	46,67	
37-40 Weeks		0	0,00		0	0,00	
Education Level							
Primary Education (Elementary School)		0	0,00		0	0,00	0,224
Secondary Education (Junior/Senior High School or Equivalent)		8	53,33		10	66,67	
Higher Education (Diploma to Doctoral Degree)		7	46,67		5	33,33	
Occupation							
Private Employee		4	26,67		6	40,00	0,042
Entrepreneur		5	33,33		2	13,33	
Civil Servant		2	13,33		0	0,00	
Housewife		4	26,67		7	46,67	

Uji Homogenitas/Laven's

Table 2. Anxiety Levels of Third-Trimester Primigravida Women Before and After Intervention

Group												
Anxiety Level	Combination of Maternity Pillow, Dual Wedge, and Prenatal Yoga						Prenatal Yoga					
	Pre-test			Post-t-Test			Pre-Test			Post-Test		
	F=15	%	Mean±SD Median; Min-Max	F=15	%	Mean±SD Median; Min-Max	F=15	%	Mean±SD Median; Min-Max	F=15	%	Mean±SD Median; Min-Max
Mild Anxiety	1	6,7	25,47±4,627 25,47;19-34	3	20	20,67±4,353 20,67±15-30	0	0	27,40±3,225 28,00;20-34	0	0	26,27±3,150 27,00;20-33
Moderate Anxiety	14	93,3		12	80		15	100		15	100	
Severe Anxiety	0	0,0		0	0		0	0		0	0	
	0,580*			0,525*			0,129*			0,059*		
	0,000**						0,000**					
P Value	0,457***											

*Uji Shapiro Wilk

**Uji Paired Sample T-Test

***Uji Independent samples test

Table 2 presents the anxiety levels of third-trimester primigravida women before and after the intervention in both groups. In the combination of *Maternity Pillow Dual Wedge* and prenatal yoga group, most respondents experienced moderate anxiety before the intervention (93.33%), while 6.67% experienced mild anxiety. After the intervention, the proportion of respondents with mild anxiety

increased to 20.00%, whereas 80.00% remained in the moderate anxiety category. The mean anxiety score decreased from 25.47 ± 4.627 before the intervention to 20.67 ± 4.353 after the intervention.

In the prenatal yoga group, all respondents (100.00%) experienced moderate anxiety before and after the intervention. However, the mean anxiety score decreased slightly from 27.40 ± 3.225 before the intervention to 26.27 ± 3.150 after the intervention.

The results of the Paired Sample T-Test showed a significant reduction in anxiety scores in both the combination group and the prenatal yoga group ($p = 0.000$). However, the Independent Sample T-Test showed no significant difference between the two groups ($p = 0.457$), although the combination group demonstrated a greater reduction in mean anxiety scores.

Discussion

The present study found that the combination of *Maternity Pillow Dual Wedge* and prenatal yoga significantly reduced anxiety levels among third-trimester primigravida women. The mean anxiety score decreased from 25.47 before the intervention to 20.67 after the intervention ($p = 0.000$). This finding suggests that improving physical comfort and relaxation may help reduce pregnancy-related anxiety. The *Maternity Pillow Dual Wedge* provides support for the abdomen and back, thereby reducing physical discomfort during rest, while prenatal yoga promotes relaxation through breathing exercises, stretching, and meditation. Improved comfort and relaxation may contribute to lower anxiety levels and better psychological well-being during late pregnancy. In the third trimester of pregnancy, increasing fetal size and maternal physical changes may cause discomfort that interferes with rest and sleep. For primigravida women, these physical changes may occur together with concerns about childbirth, fetal health, and readiness to become a mother. Therefore, interventions that address both physical and psychological aspects may be beneficial in supporting maternal comfort and emotional well-being. The combination of physical support from the Maternity Pillow Dual Wedge and relaxation through prenatal yoga may provide complementary benefits by reducing physical discomfort and helping mothers manage tension and anxiety.

The findings of this study are supported by Rahmawati and Mustikasari (2024), who reported that the use of maternity pillows significantly improved sleep quality among third-trimester pregnant women ($p = 0.020$). The authors explained that maternity pillows help support body alignment, reduce musculoskeletal discomfort, improve circulation, and facilitate a more comfortable sleeping position, thereby enhancing maternal comfort during pregnancy. Improved sleep quality and physical comfort may indirectly contribute to reduced anxiety levels among pregnant women. A more comfortable resting position may reduce physical tension and facilitate relaxation, which can be particularly important during the third trimester when physical discomfort tends to increase. In addition, repeated use of the Maternity Pillow Dual Wedge during rest and sleep may provide continuous physical support, helping respondents remain comfortable throughout the intervention period. In this study, the pillow was used for 14 consecutive days, which provided repeated exposure to the intervention. This physical comfort may complement the psychological benefits obtained from prenatal yoga. In addition, previous studies

by Ram (2024) and Holden et al. (2019) demonstrated that prenatal yoga effectively reduces anxiety and improves psychological well-being through relaxation techniques and controlled breathing exercises. Prenatal yoga may help pregnant women regulate breathing, reduce muscle tension, and develop greater awareness of their physical and emotional condition. The combination of these mechanisms may explain the decrease in anxiety observed in the intervention group.

This study also found that prenatal yoga alone significantly reduced anxiety levels among third-trimester primigravida women ($p = 0.000$). However, the reduction in mean anxiety scores was greater in the combination group than in the prenatal yoga group. Despite this difference, the Independent Sample T-Test showed no statistically significant difference between groups ($p = 0.457$). This finding may be related to the relatively small sample size and the fact that both groups received prenatal yoga, which itself is an effective non-pharmacological intervention for reducing anxiety. Nevertheless, the greater reduction observed in the combination group suggests that adding the *Maternity Pillow Dual Wedge* may enhance the benefits of prenatal yoga in improving maternal comfort and reducing anxiety during the third trimester. The absence of a statistically significant difference between groups should be interpreted carefully. The significant results from the paired analysis indicate that anxiety scores changed within each group following the intervention. In contrast, the Independent Samples T-Test indicates that the difference in the magnitude of change between the two groups was not statistically significant. Therefore, the findings do not provide sufficient statistical evidence to conclude that the combination intervention is more effective than prenatal yoga alone. The greater reduction in the combination group can instead be interpreted as a descriptive finding that indicates a potential additional benefit of providing physical comfort alongside prenatal yoga. Another possible explanation is that prenatal yoga was provided to both groups, meaning that both groups received an intervention capable of influencing anxiety levels. Consequently, the additional contribution of the *Maternity Pillow Dual Wedge* may have been more difficult to detect statistically, particularly with the limited number of respondents. Nevertheless, the findings indicate that prenatal yoga itself may be a useful component of non-pharmacological midwifery care for managing anxiety among third-trimester primigravida women.

The characteristics of the respondents may also provide additional context for interpreting the findings. In this study, the two groups were comparable in age, gestational age, and education, whereas occupation differed statistically between groups. Differences in occupational activities may influence daily physical activity, workload, rest patterns, and psychological conditions during pregnancy. Therefore, these characteristics may potentially contribute to variations in anxiety levels and should be considered when interpreting the intervention outcomes. However, because the present study was not specifically designed to analyse the effect of occupation on anxiety, this factor should be regarded as a contextual consideration rather than a direct explanation of the intervention effect.

The characteristics of the respondents may also provide additional context for interpreting the findings. In this study, the two groups were comparable in age, gestational age, and education, whereas occupation differed statistically between groups. Differences in occupational activities may influence daily physical activity, workload, rest patterns, and psychological conditions during pregnancy.

Therefore, these characteristics may potentially contribute to variations in anxiety levels and should be considered when interpreting the intervention outcomes. Nevertheless, both groups demonstrated a significant reduction in anxiety following the respective interventions, indicating that both the combination of *Maternity Pillow Dual Wedge* and prenatal yoga and prenatal yoga alone had a beneficial effect on anxiety levels among third-trimester primigravida women. The greater reduction in mean anxiety score observed in the combination group indicates a potential additional benefit of integrating physical comfort support with relaxation-based exercise. However, the difference between groups was not statistically significant.

Conclusions

The combination of *Maternity Pillow Dual Wedge* and prenatal yoga was effective in reducing anxiety among third-trimester primigravida women. Prenatal yoga alone also contributed to anxiety reduction; however, the combination intervention provided greater benefits in improving maternal comfort and psychological well-being during late pregnancy. Therefore, the combination of *Maternity Pillow Dual Wedge* and prenatal yoga may be considered a safe, practical, and beneficial non-pharmacological intervention in midwifery care to help reduce anxiety among third-trimester pregnant women. Future studies are recommended to implement longer intervention periods to evaluate the sustained effects of this intervention further.

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