



INTERVENTION OF PREGNANCY EXERCISE WITH A SPIRITUAL MINDFULNESS APPROACH BASED ON BREATHING EXERCISE ON ANXIETY

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ABSTRACT

Primigravida pregnant women in their third trimester often feel anxious and experience sleep disturbances. Hormonal changes can also trigger anxiety, which can have a negative impact on the health of the mother and baby as well as on the delivery process. Pregnancy exercises with a spiritual mindfulness approach based on breathing exercises are expected to be a good alternative in overcoming anxiety in pregnant women. Determining the effectiveness of pregnancy exercise interventions using a spiritual mindfulness approach based on breathing exercises on the anxiety levels of primigravida pregnant women in their third trimester in facing childbirth. The study used a quasi-experimental design with a pre- and post-test with control group. The sample consisted of 32 pregnant women divided into two groups, namely 16 respondents in the intervention group and 16 respondents in the control group, with sampling using purposive sampling technique. Data collection was conducted using the PRAQ-R2 anxiety questionnaire. The questionnaire was proven to be valid and reliable, with a Cronbach's Alpha value of 0.85 for the total scale and 0.77–0.90 for the subscales. Data analysis using the t-test. There was a significant change before and after the intervention of pregnancy exercises on the anxiety levels (p value = 0.001) of primigravida pregnant women in their third trimester in facing childbirth. There were significant changes before and after the intervention of pregnancy exercises with a spiritual mindfulness approach based on breathing exercises on anxiety levels. It is hoped that pregnancy exercises with a spiritual mindfulness approach can be incorporated into antenatal care services to improve the mental health of pregnant women.

Keywords: anxiety; childbirth; pregnant women; prenatal exercise; spiritual mindfulness

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INTRODUCTION

Pregnancy is a phase full of physical, emotional, and psychological changes that can trigger anxiety in pregnant women. Various factors, such as uncertainty about childbirth, fetal condition, changes in social roles, and hormonal changes contribute to an increased risk of anxiety (Nugraha & Nataningtyas, 2024; Sugarni et al., 2025). Globally, 10–25% of pregnant women experience anxiety disorders, with a higher prevalence in developing countries (WHO, 2025). In Indonesia, the Ministry of Health reports that 34% of pregnant women experience moderate to severe anxiety, especially in rural areas with limited psychosocial support (Sugarni et al., 2025).

Many pregnant women experience concerns related to pain, potential complications during childbirth, and their new role as parents. Psychological factors leading up to childbirth, coupled with hormonal changes, can increase anxiety and disrupt sleep quality. Excessive anxiety in the third trimester is associated with an increased risk of complications, including premature birth and low birth weight babies (Terrone et al., 2023). In addition, sleep disturbances that often occur during this period can potentially cause chronic fatigue, decreased concentration, and increase susceptibility to postpartum depression (Stepowicz et al., 2020).

Reducing anxiety in pregnant women can be done through pharmacological and non-pharmacological approaches. Pharmacological therapy using medication requires special attention, as most drugs can cross the placenta and potentially affect fetal development, especially in the

respiratory system (Ornoy & Koren, 2021). To minimize these risks, non-pharmacological interventions are a safer alternative for mothers approaching childbirth.

Various non-pharmacological interventions can be applied to reduce anxiety in pregnant women approaching childbirth, including Al-Qur'an recitation therapy, classical music therapy, gentle yoga, and lavender aromatherapy. In addition, mindfulness is also an effective non-pharmacological intervention in managing anxiety. Mindfulness is defined as a state of full awareness in which an individual focuses on the present experience, including thoughts, emotions, and the environment, without judgment. A number of studies show that mindfulness interventions are effective in overcoming psychological disorders (Lantu et al., 2024). A study in the Netherlands even confirmed its effectiveness in reducing depression, anxiety, stress, and various physical complaints (Kuzminskaite et al., 2021).

In recent years, mindfulness-based interventions have been increasingly used as an effective approach to reducing anxiety, including in pregnant women (Sugarni et al., 2025). Mindfulness, understood as full awareness of the present moment without judgment, has been shown to be beneficial in managing stress, improving emotional regulation, and reducing anxiety symptoms (Sercekman, 2024). Several studies have reported that programs such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) contribute significantly to reducing anxiety in pregnant women (Corputty et al., 2024).

Discomfort during pregnancy and anxiety prior to childbirth often affect the quality of sleep of pregnant women, triggered by physical and emotional changes (Jalal et al., 2024). To maintain the health of the mother and fetus and reduce various pregnancy complaints, light physical activity is highly recommended. One form of light exercise that is suitable is pregnancy exercises, which are not only beneficial for fitness, but also have a relaxing effect. The movements in prenatal exercise can stabilize anxiety, reduce fear through physical and mental relaxation, and provide education that prepares mothers for the process of childbirth and delivery (Susanti et al., 2024).

A spiritual mindfulness approach can be used in prenatal exercise to help pregnant women connect with their bodies and emotions, reduce stress, and increase relaxation. This is expected to have a positive impact on reducing anxiety and improving sleep quality in the third trimester of pregnancy. Mindfulness is effective in reducing anxiety and improving sleep quality in pregnant women, and it is highly recommended that healthcare professionals and pregnant women learn mindfulness programs to reduce pregnancy anxiety and improve pregnancy outcomes (Lu et al., 2025; Zarenejad et al., 2020).

Pregnancy exercises are a series of movements in the form of exercises with rules, systems, and specific movement principles tailored to the condition of pregnant women, aimed at preparing pregnant women mentally and physically for the delivery process (Zulaikha et al., 2025). The purpose of this study was to determine the effectiveness of pregnancy exercise interventions using a spiritual awareness approach based on breathing exercises on the anxiety levels of primigravida pregnant women in their third trimester in facing childbirth.

METHOD

This study used a pre-experimental design. The research design was a two-group pre-test and post-test design with a control group. The population was pregnant women in their third trimester at PMB Siti Hamidah, with a sample of 32 people consisting of an intervention group and a control group, each with 16 people, using purposive sampling. The research instruments used were SOPs and questionnaires. The SOP used was related to pregnancy exercises, and the questionnaire used was the Pregnancy Related Anxiety Questionnaire-Revised (PRAQ-R2). The questionnaire was proven to be valid and reliable, with a Cronbach's Alpha value of 0.85 for the total scale and 0.77–0.90 for the subscales (Mudra et al., 2019). Statistical analysis used paired t-tests and independent

sample t-tests with a significance level of 0.05 ($\alpha=0.05$). This study has passed the ethical review by the STIKes Sukabumi Research Ethics Committee with number: No:002043/KEP STIKES SUKABUMI/2024.

RESULT

Table 1.
Respondent Characteristics

Respondent Characteristics	Intervention (n=16)	Control (n=16)
	f (%)	f (%)
Age (Years)		
20-35	14 (87,5)	12 (75,0)
> 35	2 (12,5)	4 (25,0)
Education		
Lower Education	3 (18,7)	5 (31,3)
Secondary Education	8 (50,0)	7 (43,7)
Higher Education	5 (31,3)	4 (25,0)
Employment		
Working	3 (18,7)	4 (25,0)
Not Working	13 (81,3)	12 (75,0)

Table 1 shows that most respondents in the intervention group were aged 20-35 years old, totaling 14 people (87.5%), had a secondary education, totaling 8 people (50.0%), and were unemployed, totaling 13 people (81.3%). Meanwhile, most respondents in the control group were aged 20-35 years old 12 people (75.0%), had a secondary education 7 people (43.7%), and were unemployed 12 people (75.0%).

Table 2.
Univariate Analysis

Variable: Anxiety	Mean	SD	Minimum	Maximum
Intervention Group				
Pre-test	27.54	8.716	14	42
Post-test	22.70	6.675	13	37
Control Group				
Pre-test	30.50	6.214	17	41
Post-test	30.42	6.334	17	42

Table 2 shows that the results before and after measurement in the intervention group experienced a decrease in the average anxiety score from 27.54 (8.716) to 22.70 (6.675). Meanwhile, the pre- and post-measurement results in the control group showed a decrease in the average anxiety score from 30.50 (6.214) to 30.42 (6.334).

Table 3.

The Effect of Pregnancy Exercise Intervention with a Spiritual Mindfulness Approach Based on Breathing Exercises on Anxiety in Pregnant Women in the Intervention Group

Intervention Group	N	Mean	SD	p-value
Pre-test	16	27.54	8.716	0,002
Post-test	16	22.70	6.675	

Table 3 shows that there is an effect of pregnancy exercise intervention with a spiritual mindfulness approach based on breathing exercises on the anxiety of pregnant women in the intervention group ($p = 0.002$). This is evidenced by a decrease in the average anxiety score from 27.54 to 22.70, with an average difference of 4.84.

Table 4.

Differences in Anxiety Before and After Measurement in Pregnant Women in the Control Group

Control Group	N	Mean	SD	p-value
Pre-test	16	30.50	6.214	0,922
Post-test	16	30.42	6.334	

Table 4 shows that there was no difference in anxiety levels among pregnant women before and after in the control group ($p = 0.922$). Although there was a slight decrease in the average anxiety score from 30.50 to 30.42, with an average difference of 0.08.

Table 5.
Differences in Anxiety Levels Among Pregnant Women in the Intervention Group and Control Group

Group	N	Mean	SD	p-value
Intervention Group	16	22,71	6,697	0,001
Control Group	16	30,45	6,336	

Table 5 shows that there was a difference in anxiety levels between the intervention group and the control group ($p = 0.001$). This was evidenced by the difference in the mean anxiety scores, which was more significant in the intervention group (22.71) than in the control group (30.45).

DISCUSSION

Overview of Anxiety in Pregnant Women Before Intervention in the Intervention Group and Control Group

The results of the study show that the measurements taken before and after the intervention in the intervention group showed a decrease in the average anxiety score from 27.54 (8.716) to 22.70 (6.675). Meanwhile, the results of measurements before and after the intervention in the control group showed a decrease in the average anxiety score from 30.50 (6.214) to 30.42 (6.334). Pregnancy for a woman is a new issue that can cause anxiety in her life. Disturbing anxiety is a response to imagined future threats rather than actual present dangers (Lilis & Lovita, 2021). There are various factors that can influence anxiety in pregnant women, including age, education, and employment status (Afriani, 2018; Gary & Hijriyati, 2020; Sari et al., 2024).

One factor that can influence anxiety in pregnant women is age. This is in line with Afriani's (2018) statement explaining that age is related to anxiety in pregnant women. The ideal age for a woman to become pregnant is between 20 and 35 years old, as women are biologically and psychologically mature enough to carry a pregnancy and give birth safely. At this age range, women are in prime physical condition. The uterus is able to provide protection, and mentally, women are ready to carefully care for and maintain their pregnancy. Pregnancy under the age of 20 can cause problems because the body is not yet ready (Purborini & Rumaropen, 2023).

The next factor that affects anxiety in pregnant women is education. This is supported by Sari et al. (2024), who argue that anxiety can be reflected in a person's level of education. Education plays an important role in influencing how a person receives and understands new information. Individuals with a higher educational background tend to have broader knowledge, better thinking skills, and greater awareness of their own and their family's health. This also supports their understanding of information related to pregnancy exercise procedures, making them more effective in improving sleep quality and reducing anxiety before childbirth.

Another element that plays a role in triggering anxiety in pregnant women is employment. This is supported by Gary & Hijriyati (2020), who state that employment status can be a triggering factor for anxiety felt by pregnant women. Pregnant women who are not working experience more anxiety. One of the structural factors that influence the use of health services is employment, because a person's type of work is often related to the level of access to and acceptance of information. This information plays an important role in the decision-making process for using available health services (Sartika et al., 2022).

The Effect of Pregnancy Exercise Intervention with a Spiritual Mindfulness Approach Based on Breathing Exercises on Anxiety in Pregnant Women in the Intervention Group

The results showed that there was an effect of the pregnancy exercise intervention with a spiritual awareness approach based on breathing exercises on the anxiety levels of pregnant women in the intervention group ($p = 0.002$). This was evidenced by a decrease in the average anxiety score from 27.54 to 22.70, with an average difference of 4.84.

The results of this study indicate a significant decrease in anxiety among pregnant women in the intervention group. This decrease was achieved because pregnant women received treatment in the form of pregnancy exercises with a spiritual awareness approach based on breathing exercises. This finding is in line with the research by Yunitasari et al. (2021), which proves that pregnancy exercises with a spiritual awareness approach based on breathing exercises have a significant effect in reducing anxiety in pregnant women.

Pregnancy exercises with a spiritual awareness approach based on breathing exercises help mothers connect with their babies and their own bodies through deep exercises and build awareness during the process of labor or birth. The combination of breathing relaxation techniques and pregnancy exercises is very beneficial for pregnant women. The purpose of breathing relaxation techniques and physical exercises is to prepare pregnant women physically, mentally, and spiritually for the delivery process. With proper preparation, pregnant women will be more confident and gain the confidence to undergo delivery smoothly and comfortably. Proper relaxation breathing exercises and physical exercises can help mothers reduce stress, pain, and discomfort (Asriyah & Widyastuti, 2024).

Pregnancy exercises with a mindfulness approach based on breathing exercises are an effective non-pharmacological method in helping pregnant women face childbirth with more calmness and confidence. Breathing exercises play an important role because they are the only function of the autonomic nervous system that can be consciously controlled, thereby activating the parasympathetic nervous system, which calms the body. In prenatal exercise, breathing techniques focus on regulating slower and deeper breathing rhythms to create a sense of physiological safety and maintain body balance. This is very beneficial, especially because during pregnancy, the diaphragm space becomes limited, causing breathing to become shallow. Through structured prenatal yoga that incorporates mindfulness, pregnant women can improve their focus, manage pain from contractions, and reduce anxiety levels before childbirth (Arriola, 2024).

Differences in Anxiety Levels Among Pregnant Women Before and After in the Control Group

The results showed that there was no difference in anxiety levels among pregnant women before and after in the control group ($p = 0.922$). Although there was a slight decrease in the average anxiety score from 30.50 to 30.42, with an average difference of 0.08. In the control group, there was no significant change in the anxiety levels of pregnant women approaching childbirth. This was because the respondents in this group did not receive an intervention in the form of pregnancy exercises with a mindfulness approach based on breathing exercises. Without targeted physical and psychological stimulation, such as exercise activities and relaxation techniques that focus on breath control and self-awareness, the anxiety felt by respondents tended to remain the same between the pretest and posttest. These results indicate that efforts to reduce anxiety prior to childbirth require comprehensive interventions that not only support physiological aspects but also actively manage psychological conditions (Sulistiyowati & Yuriati, 2024).

Differences in Anxiety Levels Among Pregnant Women in the Control Group and Intervention Group

The results of the study show that there is a difference in anxiety levels between the intervention group and the control group ($p = 0.001$). This is evidenced by the difference in average anxiety scores, which were more significant in the intervention group (22.71) than in the control group (30.45). These results are in line with the study by Zulaikha et al. (2025), which showed a difference in the average anxiety levels between the intervention group and the control group. The anxiety levels of pregnant women in the control group remained constant because they did not receive treatment in the form of pregnancy exercises that integrated a mindfulness approach and breathing exercises. The absence of this specific intervention meant that respondents lacked the tools to effectively manage stress and anxiety prior to childbirth.

The decrease in anxiety in the intervention group was considered significant given that the intervention was prenatal exercise with a spiritual awareness approach based on breathing exercises. Pregnancy exercises are a type of physical, mental, and spiritual exercise that greatly helps pregnant women stretch their joints and calm their minds, especially in the third trimester. Pregnancy exercises focus attention on breathing rhythms, prioritizing comfort and safety in practice, thereby providing many benefits (Sulistyowati & Yuriati, 2024).

Non-pharmacological mindfulness therapy interventions can lower blood pressure, reduce anxiety, and improve adaptation and self-acceptance. Mindfulness is a very simple and easy therapy to practice, helping individuals focus more on what is happening around them. Mindfulness combined with pregnancy exercises emphasizes focusing attention on current events (events happening here and now), which involves emotions, thoughts, and the body to build self-awareness of the current condition, thereby effectively reducing stress (Sulistyowati & Yuriati, 2024).

The reduction in physical complaints after performing prenatal exercise is caused by muscle stretching, which makes the body more relaxed, thereby improving blood circulation and increasing the production of endorphins. Pregnant women in their third trimester who regularly participate in prenatal exercise report a decrease in discomfort complaints, such as muscle aches, along with an increase in feelings of happiness (Chabibah et al., 2022). Therefore, regular prenatal exercise is highly recommended to improve the physical and mental health of mothers during pregnancy.

CONCLUSION

Based on the results of the study, there was an effect of pregnancy exercise intervention using a spiritual awareness approach based on breathing exercises on the anxiety levels of pregnant women in the intervention group. There was no difference in anxiety levels among pregnant women before and after in the control group. There was a difference in anxiety levels between the intervention group and the control group.

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