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The Effect of Prenatal Yoga on 3rd Trimester Pregnancy Discomfort

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Abstract:
The comfort of pregnant women in facing childbirth can be in the form of physical and psychological comfort. Pregnancy is a unique and natural thing where pregnant women experience several changes in themselves. This change is a form of adaptation from a non-pregnant condition to a pregnancy condition that is physiologically and psychologically felt during pregnancy. One effort to reduce pregnancy discomfort is with prenatal yoga. This study aims to determine the effect of prenatal yoga on pregnancy discomfort in the third trimester at the Jomin Health Center. Using a quasi-experimental one-group design. The population was 40 respondents in the third trimester of pregnancy. The sampling technique used was total sampling. The instrument used was a PDS questionnaire sheet. The analysis technique above uses univariate and bivariate analysis with the Wilcoxon sign test. The univariate results obtained an average discomfort of pregnant women before being given prenatal yoga of 50.70 and after being given prenatal yoga of 29.85. The study results of discomfort in pregnant women in the third trimester with a p-value of 0.0001 show that prenatal yoga affects discomfort in pregnant women in the third trimester at the Jomin Health Center. Prenatal yoga has an effect on pregnancy discomfort in the third trimester at the Jomin Health Center. In pregnancy care, midwives should apply prenatal yoga in the implementation of pregnancy classes so that pregnant women can do prenatal yoga independently.

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INTRODUCTION

Pregnancy is a unique and natural process that brings about significant physical and psychological changes in expectant mothers (Yilmaz & Oskay, 2021). These changes are adaptations from a non-pregnant state to accommodate pregnancy's physiological and emotional demands (Chandra & Paray, 2024). Physical transformations begin immediately after conception and affect every organ system in the body (Swanson & Liu, 2021). Alongside these changes, pregnant women often experience varying degrees of discomfort, which can manifest both physically and psychologically (Fiat et al., 2022; Rahmawati & Murtaqib, 2024). Factors contributing to this discomfort include gestational age, hormonal fluctuations, and the mother's overall health during pregnancy (Onyemaechi et al., 2021). One typical example of such discomfort is lower back pain, which is influenced by postural changes, weight gain, and ligament redistribution (Hayakari et al., 2023).

Women may encounter numerous physical discomforts throughout pregnancy, particularly during the third trimester (Wu et al., 2021). These include frequent urination, shortness of breath, back pain, heartburn, constipation, insomnia, Braxton hicks contractions, mood swings, and heightened anxiety (Mascarenhas et al., 2022). Additionally, increased body weight, uterine fundal

height, and abdominal enlargement further strain the body (Widelock et al., 2023). Such changes often lead to stress, which can exacerbate the physical and emotional challenges faced by pregnant women (Răchită et al., 2021). To alleviate these discomforts, relaxation techniques such as yoga, prenatal exercises, abdominal stretching, kinesio taping, warm water therapy, and hot or cold compresses have been recommended (Short & DeSalvo, 2022). These methods calm the mind and reduce stress levels, providing relief during pregnancy (Bauer et al., 2021).

Lower back pain is one of the most prevalent discomforts reported by pregnant women, especially in the third trimester (Salari, 2023). This condition is primarily caused by weight gain and postural adjustments, which place additional pressure on the spine (Popajewski et al., 2023). Another frequent complaint is leg cramps, triggered by changes in blood circulation and pressure on the leg veins (Dalio et al., 2022). Swelling, or edema, particularly in the feet and ankles, is also common due to increased fluid volume and the pressure exerted by the expanding uterus (Sahr et al., 2024; Novelia et al., 2022). Heartburn, another typical symptom, results from elevated progesterone levels, which relax the digestive tract muscles (Dunbar et al., 2022). Sleep disturbances are another concern, with many women experiencing difficulty sleeping due to physical discomfort and increased nighttime urination (Meers & Nowakowski, 2022).

Shortness of breath is another significant issue faced during the third trimester (Oviedo-Caro et al., 2021). The growing uterus exerts pressure on the diaphragm, reducing lung capacity and causing breathing difficulties (Demirkol & Cetinkaya, 2022). These discomforts, combined with the stress of pregnancy, can lead to heightened anxiety levels among expectant mothers (Diezi et al., 2023). Excessive stress and anxiety pose risks not only to maternal well-being but also to fetal health, underscoring the importance of addressing these issues proactively (Jagtap et al., 2023). One practical approach to mitigating pregnancy-related discomfort is exercise, specifically prenatal yoga, which has been tailored to meet the needs of pregnant women (Rhadiyah et al., 2023).

Prenatal yoga is a modified form of hatha yoga designed to support pregnant women's physical and mental well-being (Corrigan et al., 2022). It offers numerous benefits, including stress reduction, anxiety management, alleviation of pregnancy-related pain, and preparation for childbirth (Nadholta et al., 2024; Carolin et al., 2022). Prenatal yoga incorporates five key elements: physical yoga exercises, breathing techniques (pranayama), positions (mudra), meditation, and deep relaxation (Vaamonde et al., 2021). These components collectively promote natural childbirth and contribute to ensuring a healthy baby. Furthermore, prenatal yoga emphasizes flexibility in the pelvic muscles, breathing techniques, relaxation, and mental tranquility, which are crucial for preparing for labor and delivery (Indrayani et al., 2023).

Research highlights the positive effects of prenatal yoga in reducing stress, improving quality of life, enhancing comfort, and decreasing labor pain while potentially shortening the duration of childbirth (Lu et al., 2025). A recent interview conducted with 15 third-trimester pregnant women at the Jomin Community Health Center revealed widespread physical discomfort. Among the respondents, 66.7% reported worsening lower back pain as their pregnancy progressed, while 46.7% experienced frequent leg cramps, especially at night. Additionally, 73.3% noted swelling in their feet and ankles and discomfort when standing for prolonged periods. Heartburn was reported by 60%, and 53.3% cited sleep disturbances due to discomfort and increased nighttime urination. Moreover, 40% expressed feelings of shortness of breath, even during light activities.

These findings underscore the prevalence of physical discomfort during the third trimester among pregnant women attending the Jomin Community Health Center. Addressing these challenges through interventions like prenatal yoga could significantly enhance maternal well-being and prepare women for a smoother childbirth experience (Esencan et al., 2023). By integrating physical activity, mindfulness, and relaxation techniques, prenatal yoga offers a holistic solution to

the multifaceted discomforts of pregnancy (Pais et al., 2025). Its potential to improve maternal and fetal outcomes warrants further exploration and implementation in prenatal care programs.

METHOD

This study employed a quantitative, analytic experimental design using a pre-experimental approach with a pretest-posttest one-group design. The population consisted of 40 third-trimester pregnant women (28–40 weeks gestation) attending the Jomin Community Health Center in Karawang, West Java. Total sampling was applied, and all eligible population members were included in the study sample. The independent variable was prenatal yoga intervention, while the dependent variable was third-trimester pregnancy discomfort. Data were collected using the Pregnancy Discomfort Scale (PDS), a validated questionnaire assessing maternal discomfort during pregnancy. Statistical analysis was performed using the Wilcoxon Signed-Rank test with a significance level of $p \leq 0.05$ to evaluate differences in discomfort levels before and after the intervention.

Inclusion and Exclusion Criteria

Participants were included if they met the following criteria: (1) third-trimester pregnancy (28–40 weeks), (2) confirmed maternal and fetal health by a healthcare provider, and (3) willingness to participate, evidenced by signed informed consent. Exclusion criteria encompassed conditions contraindicated for physical activity, such as preeclampsia, placenta previa, cervical incompetence, ruptured membranes, a history of preterm birth or recurrent miscarriage (≥2), hypertension, diabetes, heart disease, hyperthyroidism, or systolic blood pressure >120/80 mmHg or <90 mmHg. These criteria ensured participant safety and minimized confounding variables.

Data Collection

The study was conducted at the Jomin Community Health Center at Jl. Rajawali No. 56, West Jomin Village, Kotabaru District, Karawang Regency, between December 2024 and January 2025. Data were collected using the Pregnancy Discomfort Scale (PDS), a structured questionnaire to quantify physical and psychological discomfort during pregnancy. The PDS evaluates symptoms such as back pain, edema, heartburn, and sleep disturbances on a Likert scale. Participants completed the PDS before (pretest) and after (posttest) a four-week prenatal yoga intervention.

Ethical Considerations

Ethical approval was obtained from the Ethics Committee of Universitas Nasional Jakarta to ensure compliance with research standards. Informed consent was secured from all participants, emphasizing voluntary participation and confidentiality. The study adhered to the principles of the Declaration of Helsinki, prioritizing participant safety and well-being throughout the research process.

RESULT

Univariate Analysis Results

Table 1. Pregnancy Discomfort among 3rd Trimester Pregnancy on Pretest and Posttest Prenatal Yoga

Discomfort third-trimester pregnancy	Mean	Mean Difference	SD	Min	Max
Pre Test	50.70		8.908	23	71
Post Test	29.85	20.85	6.351	18	44

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Table 1 shows a significant difference in the frequency score before and after doing prenatal yoga in pregnant women in the third trimester. The average discomfort score before the intervention was 50.70, with a standard deviation (SD) of 8.908 and a score range of 23-71. After prenatal yoga, the average score decreased to 29.85, with an SD of 6.351 and a score range of 18-44, resulting in an average difference of 20.85.

Table 2. Results of the Shapiro-Wilk Normality Test

Discomfort third-trimester pregnancy	Statistic	df	p-value	Information
Pre Test	0.831	40	0.0001	Non-normal distribution
Post Test	0.980		0.688	Normal distribution

Based on Table 2, the results of the Shapiro-Wilk normality test for pregnancy discomfort in trimester 3 before doing prenatal yoga had an abnormal distribution p-value of 0.0001 ($p < 0.05$), and after doing prenatal yoga had a normal distribution p-value of 0.688 ($p > 0.005$). Because the distribution of data obtained is not normal, the statistical test used is the Wilcoxon test. Wilcoxon test is used to determine the effect of prenatal yoga on the discomfort of pregnancy trimester 3.

Table 3. The Effect of Prenatal Yoga on Third Trimester Pregnancy Discomfort at Jomin Health Center

Discomfort Pregnancy	N	Mean	Z	p-value
Pre Test	40	51.17	-5.516	0.0001
Post Test		31.89		

Based on Table 3 from the Wilcoxon test results, the P value is 0.0001. Because the value of 0.0001 is less than 0.05, it can be concluded that prenatal yoga affects discomfort in the third trimester of pregnancy.

DISCUSSION

Discomfort in Pregnant Women in the 3rd Trimester of Prenatal Yoga Pretest and Posttest at Jomin Health Center

Based on the results of univariate analysis, there was a significant difference in the frequency discomfort scores before and after doing prenatal yoga in pregnant women in the third trimester. The average discomfort score before the intervention was 50.70. After the intervention, the average score decreased to 29.85. This decrease indicates a decrease in discomfort, as evidenced by the lower average value (mean) from the pretest to the posttest of prenatal yoga at Jomin Health Center. Prenatal yoga is designed for pregnant women to improve physical and mental well-being during pregnancy. Before undergoing prenatal yoga, pregnant women often face various health problems, both physical and mental, which can worsen their quality of life during pregnancy (Jarbou & Newell, 2022; Fibriansari & Azizah, 2023).

Some common problems that pregnant women often face include lower back pain, anxiety, stress, and sleep disorders. Various positive changes are usually seen after the intervention in the form of prenatal yoga. Physically, prenatal yoga helps improve posture, increase flexibility, and reduce muscle tension (Purnani & Mu'alimah, 2021). Pregnant women often report a decrease in back pain and leg cramps that are common during pregnancy. Gentle, targeted yoga movements help loosen tense muscles and improve blood circulation, reducing the physical discomfort often felt before yoga intervention. Prenatal yoga had a positive effect on reducing back pain in pregnant women in the third trimester. Pregnant women who attended prenatal yoga sessions experienced a

significant reduction in complaints of back pain, which is one of the common discomforts in the last trimester of pregnancy (Utami et al., 2022). The decrease in back pain in this study is in line with the study's results being discussed, where the discomfort score also decreased significantly after the prenatal yoga session. This study confirms that prenatal yoga can reduce physical discomfort caused by changes in the pregnant woman's body (Rhadiyah et al., 2023; Hareni et al., 2023).

Prenatal yoga can reduce physical complaints such as shortness of breath, fatigue, and back pain, which are common problems in pregnant women in the third trimester. Prenatal yoga not only focuses on reducing pain but also helps pregnant women to be more relaxed and reduce anxiety, which can also contribute to reducing physical discomfort. Pregnant women who participated in prenatal yoga experienced increased sleep quality, reducing fatigue and physical discomfort (Azward et al., 2021). According to the researcher, the decrease in average discomfort during the third trimester of pregnancy after prenatal yoga was done was due to several factors. First, prenatal yoga exercises that combine stretching, deep breathing, and meditation help the pregnant woman's body to relax more, thereby reducing muscle tension and common pains, such as lower back pain and leg cramps. This physical tension gradually decreases with regular yoga practice. The deep breathing taught in yoga improves oxygen flow throughout the body, thereby increasing blood circulation. This helps reduce swelling or edema in the legs, a common complaint in pregnant women in the last trimester. Thus, researchers assume that better circulation contributes to reduced discomfort.

The Effect of Prenatal Yoga on Discomfort in Pregnant Women in the third trimester

Based on the bivariate analysis results, prenatal yoga significantly reduces discomfort in the third trimester of pregnancy with a p-value of 0.0001. Prenatal yoga can increase flexibility, improve posture, and reduce muscle tension, often the leading cause of discomfort in pregnant women. Several yoga movements taught in prenatal yoga sessions at the Jomin Health Center, such as the cat-cow position, child's pose, and pigeon pose, have been shown to help relieve lower back pain, reduce swelling in the legs, and improve breathing, which is often disturbed due to pressure on the diaphragm by the growing fetus.

In the third trimester of pregnancy, pregnant women feel more discomfort because they are getting closer to the time of delivery. In this study, mothers felt more comfortable after doing prenatal yoga exercises, including swelling in the feet and hands, difficulty sleeping, difficulty defecating, leg cramps, numbness in the toes, and lower back pain. In the third trimester of pregnancy, pregnant women feel more discomfort because they are getting closer to the time of delivery. In this study, mothers felt more comfortable after doing prenatal yoga exercises, including swelling in the feet and hands, difficulty sleeping, difficulty defecating, leg cramps, numbness in the toes, and lower back pain (Oktavia et al., 2023; Atunisa et al., 2024).

Pregnancy discomfort disorders can be influenced by physical factors related to anatomical changes and psychological factors. In general, these disorders are physiological but can turn pathological if not appropriately treated. A proper diagnosis of pregnancy discomfort disorders and their causes is important for proper management. Each woman can be given different treatments in the same case; for this reason, comprehensive knowledge and understanding are needed from midwives to be able to help mothers overcome disorders and discomfort during pregnancy (Melaku, 2022; Adisti et al., 2024).

Yoga, which is done regularly by pregnant women, has many benefits for the mother and fetus. Among them are increasing the baby's birth weight, reducing the occurrence of premature birth, and various pregnancy complications. Yoga exercises that are carried out include various relaxations, adjusting postures (yoga asanas), breathing exercises, and routine meditation every day for one

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hour. Yoga exercises can help smooth blood flow to the placenta, reduce the transfer of maternal stress hormones to the fetus's body, and reduce the release of hormones that trigger birth, reducing the possibility of premature birth (Vaamonde et al., 2022; Lutfian et al., 2021). According to researchers, prenatal yoga has the benefit of reducing the discomfort experienced by pregnant women in the third trimester. Prenatal yoga exercises, designed for the needs of a pregnant woman's body, can help relieve various physical complaints such as back pain, swelling in the legs, and difficulty sleeping. In addition, yoga movements that focus on breathing, relaxation, and strengthening the pelvic floor muscles are believed to increase flexibility and blood circulation, contributing to increased comfort during pregnancy. Thus, researchers assume that regular prenatal yoga practice can reduce discomfort in pregnant women, thus playing a role in improving their quality of life and emotional well-being during pregnancy.

CONCLUSION

This study investigated the impact of prenatal yoga on reducing discomfort during the third trimester of pregnancy among participants at the Jomin Community Health Center. The findings revealed a statistically significant reduction in maternal discomfort following a structured prenatal yoga intervention. Before the intervention, participants reported elevated levels of physical and psychological discomfort, consistent with common third-trimester challenges. Post-intervention results demonstrated a marked improvement, highlighting the effectiveness of prenatal yoga in alleviating symptoms such as back pain, edema, heartburn, and sleep disturbances. The observed outcomes underscore prenatal yoga as a safe, non-pharmacological strategy to enhance maternal well-being during late pregnancy. These results align with prior research emphasizing the benefits of yoga in improving physical flexibility, mental relaxation, and overall quality of life for expectant mothers. The study adhered to ethical guidelines, ensuring participant safety and informed consent. Further research is recommended to explore prenatal yoga's long-term effects and broader applications in diverse populations.

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CONFLICT OF INTEREST

This research was conducted independently without any influence from external parties that could cause a conflict of interest. The author has no financial or non-financial ties to institutions, organizations, or other parties that could affect the objectivity of the research results. All data presented are the results of observations and analyses conducted scientifically by the applicable research guidelines at the National University.

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