ORIGINAL ARTICLE

Effect of Prenatal Yoga Program on Discomfort in Pregnant Women 3rd Trimester in Bengkulu, Indonesia

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ABSTRACT

Introduction: The comfort of pregnant women when facing childbirth can be in the form of physical and psychological comfort. Pregnancy is a typical and natural period in which pregnant women experience various changes in themselves. These changes are adaptations from a non-pregnant state to a pregnant state that are felt physiologically and psychologically during pregnancy. Physiological changes begin to be experienced by pregnant women after conception and affect every organ system in the body. **Methods:** The type and design of this research is quantitative with an experimental analytical design with a pretest-posttest one group design approach. The sample in the study was 30 pregnant women in 3rd trimester who were taken using the total sampling technique. The instrument used in this study was a questionnaire containing physical complaints of pregnant women. **Results:** The results of the univariate analysis before prenatal yoga was given to pregnant women, were 18 (60.0%) who experienced moderate pain levels and 8 (26.7%) experienced severe pain, while after being given prenatal yoga, there were 22 (73.3%) who experienced mild pain levels and 8 (26.7%) experienced moderate pain. Based on the bivariate results, there was an effect of prenatal yoga on the discomfort of pregnant women with a p-value of 0.000. **Conclusion:** Prenatal yoga can reduce discomfort in pregnant women. Midwives carrying out pregnancy care should apply pregnant 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 thing where pregnant women experience several changes in themselves. These changes are a form of adaptation from a non-pregnant condition to a pregnancy condition that is physiologically and psychologically felt during pregnancy (1). Pregnancy is a normal and natural process, where many changes occur both physically and psychologically. With these changes, pregnant women can cause discomfort in their pregnancy and this discomfort is different for each mother in each trimester of pregnancy. The discomfort experienced by pregnant women such as heartburn, difficulty sleeping (insomnia), fatigue, back pain, hypersalivation (ptyalism), increased frequency of urination, joint pain, nausea, nasal congestion, leg cramps and varicose veins (2).

Individuals who are mothers, Significant physical, mental, and financial changes occur throughout pregnancy and childbirth for all women, including those who are pregnant and those who have recently given birth. Women are more susceptible to depression and anxiety during this period than in previous life stages (3). There are several factors that influence the emergence of discomfort in pregnant women, such as gestational age, hormonal, and the mother's condition during pregnancy. An example of discomfort during pregnancy is back pain. Pregnancy-related back pain problems can arise for a number of reasons, such as altered posture, weight increase, and ligament displacement (4,5).

Among pregnant women, yoga is a form of traditional Chinese medicine that has gained popularity recently (6–8). Yoga is a holistic practice that emphasizes principles related to the mind, body, spirit, emotions, and ethics (9). A physical exercise created especially for expectant mothers, prenatal yoga focuses on the concepts of yoga that have been modified to meet the physical and emotional requirements of expectant mothers. Pregnant women's emotional and physical health can benefit from prenatal yoga (10).

Yoga has been shown to help pregnant women with psychological pain in addition to physical discomfort or complaints. Numerous studies have demonstrated the psychological and physical advantages of yoga for expectant mothers. Of these, yoga can lessen psychiatric illnesses during pregnancy, postpartum depression, stress, and anxiety since it naturally lowers stress reactions by lowering blood pressure, facilitating breathing, and lowering heart rate (11).

There is growing evidence to support the potential benefits of practicing yoga during pregnancy. Prenatal yoga has been found to improve maternal psychological well-being, pregnancy-related pain, and a number of perinatal outcomes, including a lower risk of preterm birth, pregnancy-related hypertensive diseases, and gestational diabetes (12,13).

Yoga practiced during the third trimester of pregnancy can have a positive impact on the physical health, psychology, and feelings of pregnant women. The purpose of practicing yoga during the third trimester of pregnancy is to create a balance of mind, body, and calm, preparing pregnant women physically, mentally, and spiritually for the labor process. Therefore, by preparing during pregnancy by practicing yoga, pregnant women in their third trimester will be more confident and gain confidence in undergoing a smooth labor and not experiencing anxiety and discomfort during the third trimester of pregnancy can go well and calmly (14).

By doing gentle prenatal yoga exercises, it can produce many benefits for pregnant women during pregnancy, namely reducing stress levels, helping pregnant women to relax, be confident in their body image, improving body posture, balancing and stabilizing the body of pregnant women, reducing and eliminating complaints during pregnancy and helping to prepare for normal birth and improving sleep quality in pregnant women (2). We planned a study to evaluate the impact of yoga practice on third-trimester pregnant women's discomfort because many of the health benefits of yoga are believed to be mediated through its effects on the autonomic nervous system.

MATERIALS AND METHODS

The type and design of this study is quantitative with an experimental analytical design with a pretest-posttest one group design approach. The population in this study were all pregnant women in the 3rd trimester at PMB Bidan Z, Bengkulu City from January to September 2023, totaling 30 people. The sample in the study was 30 pregnant women in the third trimester who were taken using the total sampling technique. The instrument used in this study was a questionnaire containing physical complaints of pregnant women adopted from (15). Measurement of physical complaints was carried out 2 times, the first measurement was taken before the yoga implementation and the second measurement after the yoga implementation. This prenatal yoga can be done 2 times a week for 3 weeks with a yoga time or duration of 60 minutes per yoga. The types of yoga movements or poses given to pregnant women in the third trimester are Sukhasana pose in a relaxation and pranayama position, tadasana pose, Utkatasana, table pose, Adho mukha svasana, goddess pose, tree pose, warrior 1,2,3, cut cow pose, child's pose, virasana pose, janu sirsasana pose, dandasana pose, lying pose and finally savasana pose in the final relaxation in yoga trimester 3. In doing yoga for pregnant women in the third trimester, it can be done with 9 steps or prenatal yoga sequences that are done for 60 minutes, namely initial relaxation or concentration of thought for 5 minutes, pranayama (breathing) for 5 minutes, warning up (stretching) for 5 minutes. In the prenatal subsalutation step, standing, kneeling, and sitting positions were performed for 30 minutes, followed by a restorative or lying pose for 5 minutes, and a final relaxation pose for 10 minutes. In this study, the yoga instructors in the third trimester were the researchers themselves, certified yoga instructors. They had previously participated in yoga training for pregnant women and also taught complementary obstetrics courses in pregnancy. In this study, the researchers directly provided yoga to the pregnant women, assisted by the research team, twice a week for 60 minutes of yoga, and were conducted for four weeks.

The inclusion criteria for this study were pregnant women in their third trimester, and contraindications for prenatal yoga participants were no history of miscarriage, preeclampsia, placenta previa totalis, no history of bleeding during pregnancy, and no history of incompetent cervix (weak cervix). Contraindications for asana modifications in prenatal yoga were that pregnant women should not engage in abdominal compression movements, should not hold their breath, and pregnant women with varicose veins should avoid squatting poses. Participants did prenatal yoga 4 times for 4 consecutive weeks, which lasted for 45-60 minutes. Prenatal yoga exercises were given by certified yoga instructors. The data collection methods used were participatory observation, interviews, questionnaires and documentation. The processing of this research data was carried out through editing, coding, scoring, data entry, cleaning, and tabulating. Computer-based data analysis was carried out in several stages, using the paired t test for univariate and bivariate analysis.

This study approve by research ethics committee Fakulty of Health Science, University of Dehasen of Bengkulu Indonesia with number of ethical clearances is 0007/D-KEPK/FD/X/2024.

RESULTS

Based on Table 1, it shows that pregnant women aged 20-35 years are 19 (63.3%), and those aged at risk (< 20

Table I: Characteristics of pregnant women in 3rd trimester (N=30)

Characteristics	Criteria	Frequency (percentage)
Age	No Risk (20-35 Years)	19 (63.3%)
	At Risk (< 20 and > 35 Years)	11 (36.7%)
Parity	Primigravida	10 (33.3%)
	Multigravida	14 (46.7%)
	Grand Multigravida	6 (20.0%)

and > 35 years). Pregnant women with primigravida are 10 (33.3%), pregnant women with multigravida are 14 (46.7%) while pregnant women with grand multigravida are 6 (20.0%).

Based on Table II, it shows that out of 30 respondents before the implementation of prenatal yoga, there were 18 (60.0%) who experienced moderate pain levels and 8 (26.7%) experienced severe pain. Out of 30 respondents after the implementation of prenatal yoga, there were 22 (73.3%) who experienced mild pain levels and 8 (26.7%) experienced moderate pain.

Table II. Low back pain levels before and after prenatal yoga among pregnant women in the third trimester (N=30)

Low back pain level	Before prenatal yoga		After prenatal yoga	
	n	%	**n**	%
Light pain	4	13.3	22	73.3
Mild pain	18	60.0	8	26.7
Heavy pain	8	26.7	0	0.0
Total	**30**	**100.0**	**30**	**100.0**

Note. Values are presented as frequency (n) and percentage (%).

The average pain level before and after prenatal yoga was 1.867, according to Table III. The findings of the Wilcoxon statistical test, which showed a p-value of 0.00 and a p-value $<\alpha = 0.05$, indicate that prenatal yoga has an impact on the degree of back pain experienced by pregnant women during the third trimester.

Table III: Effect of prenatal yoga on low back pain among pregnant women in the third trimester (N=30)

	Mean	Std. Deviation	Sig.
Pain before yoga and pain after yoga	1.867	.346	<0.000

DISCUSSION

Yoga is often cited as one of the safest and most beneficial forms of physical activity during pregnancy. (16). Prenatal yoga is very safe for pregnant women (17). Yoga can shape body posture, help to relax, reduce and eliminate complaints felt during pregnancy and balance and stabilize the body in pregnant women (18,19). The results of this study indicate that there is an effect of prenatal yoga on discomfort in pregnant women. There were 18 (60.0%) who experienced moderate back pain and 8 (26.7%) who experienced severe back pain, after being given prenatal yoga for 4 weeks with a duration of 45-60 minutes there was a decrease, namely 22 (73.3%) mild back pain.

According to the T-test statistical test results, prenatal yoga had an impact on pregnant women's pain in 30 of the respondents who were pregnant and received it; the mean value was 1.867, the standard deviation was 0.346, and the p value was 0.000. The study's findings are consistent with those of another study (20) that found a significant reduction in lower back pain in both the control group and the prenatal yoga group ($p < 0.001$). Compared to the control group (1.76mm), the prenatal yoga group experienced a greater average decrease in lower back discomfort (3.57mm).

According to the study's findings, 18 pregnant women (60%) reported having mild pain prior to prenatal yoga, whereas 22 pregnant women (73%) reported having light pain following prenatal yoga. This is consistent with the findings (21), which showed that 29 individuals experienced mild pain (90.6%) following prenatal yoga, compared to 31 pregnant women in the third trimester who suffered moderate pain (96.9%) prior to prenatal yoga. The Wilcoxon test with a significance level of $p = 0.00$ ($p > 0.05$) was the statistical test employed in this investigation.

Additionally consistent with (22), the study found that pregnant women who engaged in prenatal yoga had an average back pain score of 0.367, with a standard deviation of 0.615 for the statistical test results. Prenatal yoga helped pregnant women with back pain in the third trimester, according to the paired dependent T test, which produced a significant value of 0.003, which is less than 0.05.

Pregnant women in the Risk group (less than 20 years old and over 35 years old) and those in the 28–40 week gestational age range who experience back pain fall into the Severe Pain category. This is because of physical changes, particularly in body weight, caused by uterine enlargement and slightly loosened pelvic joints, which frequently cause back pain in mothers.

Theoretically, one of the most prevalent pregnant discomforts is back ache. strain on the back muscles or twisting of the spine that puts strain on the joints can both cause back discomfort (23). Changes in posture, weight increase, and ligament redistribution are additional factors that may impact the start of back pain complaints during pregnancy. Pregnant women's increased weight and spinal physiology are the main causes of back pain. As pregnancy progresses and posture changes, a pregnant woman's spine becomes more curved.

Prenatal Yoga that can be done by pregnant women regularly turns out to have many benefits for the mother and fetus in the womb. The benefits are that

it can increase the baby's weight at birth, reduce the occurrence of premature birth and various pregnancy complications. Prenatal yoga exercises that are carried out include various relaxations, meditation for 1 hour, adjusting postures (yoga asanas), breathing exercises and can be done routinely every day. Yoga can help lower the risk of premature birth by promoting smooth blood flow to the placenta, limiting the production of hormones that prompt birth, and reducing the transfer of maternal stress chemicals to the fetus' body (24).

CONCLUSION

Prenatal yoga is very useful in reducing discomfort during pregnancy in the third trimester, Yoga can form body posture, help to relax, reduce and eliminate complaints felt during pregnancy and balance and stabilize the body in pregnant women. So it is expected that midwives can provide health services in the form of prenatal yoga to pregnant women.

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