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Effectiveness of Prenatal Yoga on Pregnancy Discomfort in Pregnant Women in the II and III Terms

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Pregnancy often leads to physical and psychological changes that can cause significant discomfort for expectant mothers. While such discomforts are generally physiological, they require attention to prevent negative effects on both maternal and fetal health. Prenatal yoga is a non-pharmacological intervention that may help alleviate these discomforts and support a smoother labor process. This study aims to evaluate the effectiveness of prenatal yoga in reducing discomfort levels among pregnant women in their second and third trimesters. A quasi-experimental design with a one-group pre-test post-test approach was used. The study involved 30 pregnant women in their second and third trimesters, selected through purposive sampling. Participants attended prenatal yoga sessions four times per week, with each session lasting 60 minutes. Data were collected using the Numeric Rating Scale (NRS) for back pain and leg cramps, the Pittsburgh Sleep Quality Index (PSQI) for sleep quality, and the Hamilton Rating Scale for Anxiety (HRS-A) to assess anxiety levels. Data analysis was conducted using the Wilcoxon test, with a significance threshold of $p < 0.05$. The results showed a p-value of 0.000 for all measured variables—indicating significant improvements in back pain, leg cramps, sleep quality, and anxiety levels after the yoga intervention. These findings suggest that prenatal yoga is effective in reducing both physical and psychological discomforts during pregnancy. It can be considered a beneficial, low-risk strategy to enhance maternal well-being in the later stages of pregnancy.

Keywords: pregnancy discomfort, prenatal yoga.

INTRODUCTION

Pregnancy is a physiological period that is awaited by a married couple, with the hope of giving birth to a healthy, complete baby with optimal birth weight. Along with hormonal changes and fetal development, pregnant women often experience various complaints that can affect their quality of life. However, this discomfort is often considered a physiological response of the body to pregnancy (Patel & Khatri, 2020). Discomfort that occurs in the third trimester of pregnancy includes frequent urination, constipation, shortness of breath, edema in the lower extremities, difficulty sleeping, and back pain. The intensity of these complaints varies from individual to individual.

Data from the Indonesian Ministry of Health (2019) based on the 2018 National Riskesdas Report states that the prevalence of discomfort during pregnancy is around 3-17%, in developed countries 10% and in developing countries 25%. Meanwhile, the incidence of discomfort during pregnancy in Indonesia is around 28.7 %. (Riset Kesehatan Dasar (Riskesdas), 2018). Studies in Indonesia show that the prevalence of back pain in pregnant women ranges from 60-80% (Patel & Khatri, 2020). Initial observations at the independent practice of Midwife Diah Silvia, D, S.ST in 30 pregnant women in the second and third trimesters showed that all respondents (100%) had experienced complaints such as leg cramps, sleep disturbances, back pain, back pain (upper and lower), and anxiety related to childbirth and the condition of the baby.

Each pregnant woman experiences a unique spectrum of discomfort, the intensity of which is often related to gestational age. Although most complaints resolve spontaneously, intervention occurs if the discomfort begins to interfere with daily activities (Veri et al., 2023). The recommended caregiving approach is one that prioritizes minimizing intervention and avoiding medical procedures that have not been proven effective (Walyani, 2023). Each pregnant woman experiences a unique spectrum of discomfort, the intensity of which is often related to gestational age . Although most complaints resolve spontaneously, intervention occurs if the discomfort begins to interfere with daily activities (Veri et al., 2023) . The recommended caregiving approach is one that prioritizes minimizing intervention and avoiding medical procedures that have not been proven effective (Walyani, 2023). Support for health programs, especially in the field of midwifery, is increasingly complete with the presence of complementary health services. These services include efforts to improve health, prevent disease, treat and recover. One of the complementary therapies that is often chosen by pregnant women and recommended by health professionals is yoga, which can be integrated into obstetric services to support pregnancy, childbirth, and the postpartum period (Aulya et al., 2023).

Yoga can help overcome discomfort holistically by paying attention to physical, mental and

emotional aspects, yoga movements can be adjusted to individual needs and abilities, so that they can be done by pregnant women with various physical conditions. (Aulya et al., 2023). The benefits of yoga for pregnant women are very diverse, helping to improve their physical, mental and emotional condition. Research conducted by Dheska, et.al 2020 proved that there is an Effect of Prenatal Yoga on Sleep Quality, Back Pain, Symphysis Pubis Pain, Oedema, and Type of Labor in Pregnant Women in the Third Trimester at the Pratama Asih Waluyo Jati Clinic. (Arthyka Palifiana et al., 2020). Research by Yayuk, et.al 2022 found differences in the mental health of pregnant women between the control group (not attending prenatal yoga classes) and the treatment group attending prenatal yoga classes. Prenatal yoga has a different impact on the mental health of pregnant women. On average, pregnant women who take prenatal yoga classes have normal mental health. (Puji Lestari et al., 2023). Based on the available evidence, yoga can be considered as an effective additional therapy to improve the physical and mental health of pregnant women, both in normal and high-risk pregnancies, as well as during labor and the postpartum period. In the context of complementary obstetric services, yoga is implemented as part of a comprehensive approach that aims to provide full support to women throughout pregnancy, labor, and the postpartum period (Mooventhan, 2019).

Based on the description above, the author is interested in conducting research on "The Effectiveness of Prenatal Yoga on Pregnancy Discomfort in Pregnant Women in TM II and III. So that it can reduce the discomfort experienced by pregnant women.

METHODS

Data collection was conducted at the independent practice of midwife , Mrs. Diah Silvia, S.ST from September to November 2024. The research This use metode quasi experimen with one group pre test - post test design. Population study is all Mother pergnant Trimester II And III who carried out the examination at the independent practice of midwife Dian Silvia , S S T The Gempol group consisted of 34 people. Total up to Which set in place because of 30 person Which in purposif sampling based on the researcher's consideration by applying the inclusion and exclusion criteria, the inclusion criteria are pregnant women who check their pregnancies at the independent midwife Diah Silvia practice, are willing to be respondents, pregnant women in the second and third trimester with physiological pregnancies, do not have a history of recurrent bleeding, while the exclusion criteria are mothers who have a history of recurrent bleeding, mothers with pregnancy complications such as hypertension, preeclampsia .

Before collecting data, first ask for consent from the respondent to fill in the willingness to become a respondent. Primary data was collected using questionnaires obtained directly from respondents, while secondary data was obtained from medical records. The instrument used in this study was a

questionnaire containing information about pregnancy discomfort, both physical and psychological complaints of pregnant women. Measurement of discomfort of pregnant women was conducted twice by researchers. The first measurement was conducted before prenatal yoga (pre-test) and the second measurement was conducted after prenatal yoga. Prenatal yoga exercises are given by midwife Diah Silvia, S.ST, who has attended prenatal yoga training and received a certificate from the Bidan Kita clinic. This training during 60 minute consisting of five m a method namely 1) training physique yoga, 2) respiration (pranayama), 3). Positions (mudra), 4). Meditasi and 5). Deep relaxation. Diah Silvia provides yoga exercises 4 times a day every Sunday with a duration of 60 minutes for each session in a special room where the room is equipped with the equipment needed for prenatal yoga exercises. After pregnant women do prenatal yoga 4 times a week, the discomfort of pregnant women is measured again (post test).

Discomfort was measured using the Numeric Rating Scale (NRS) questionnaire to measure the intensity of back pain and leg cramps, The Pittsburgh Sleep Quality Index (PSQI) questionnaire to assess sleep quality, and the Hamilton Rating Scale for Anxiety (HRS-A) to measure anxiety levels. Data processing is done with the help of programs S PSS version 27. 0. Level to the belief that it is used is 95 % with mark $p < 0,05$. Uvivariate analysis is used to describe the characteristics of respondents, samples, distribution and frequency of variables. Normality test using the Shapiro-Wilk test. Bivariate analysis to see the differences before and after prenatal yoga on discomfort of pregnant women with the Wilcoxon test.

RESULTS AND DISCUSSION

This section will describe the research results obtained from data collection in September to November 2024, involving 30 pregnant women in their second and third trimesters. Data analysis was conducted to determine differences in the level of pregnancy discomfort before and after participating in prenatal yoga intervention. Details of the main findings are presented below:

1. Univariate Analysis

Table 1. Frequency distribution of characteristics of pregnant women

No	Characteristics	n	%
1	**Age**		
	Reproductive age (20-35 years)	30	100
	Age at risk (>35 years)	0	0
2	**Education**		
	Elementary school	0	0
	Junior high school	3	10
	Senior High School	12	40
	College	15	50
3	**Work**		
	Housewife	18	60
	Work	12	40
4	**Gestational Age**		

	Trimester II	12	40
	Trimester III	18	60
5	**Parity**		
	Primigravida (1)	19	64
	Multigravida (2-4)	11	36
	Grande multigravida (>4)	0	0

Listed in Table 1, all 30 respondents (100%) are in the reproductive age category. The age between 20 and 35 years is considered the most ideal age for pregnancy and childbirth, because the risk of complications is relatively low in this age range (Rasjidi Imam, 2015). In addition, 50% of respondents (15 people) have a high level of education, which is in line with the opinion that the higher a person's level of education, the greater the ability to understand and apply new information, and think rationally (Walyani, 2023). More than half of the respondents (60% or 18 people) are housewives, which is in accordance with the definition (Arin et al., 2021) as women who carry out household tasks without getting paid, including caring for children, preparing food, and keeping the house clean. Housewives often have to do many jobs at once. In line with the findings (Haris Muzakir, Prihayati, 2021), this study acknowledges a significant relationship between fatigue experienced by working pregnant women and factors such as trimester of pregnancy, working hours, and sleep duration.

More than half of the respondents (60%, 18 people) were in the third trimester of pregnancy, which is an important period with increased fetal growth (Arthyka Palifiana et al., 2020). This finding is supported by research (Wulandari & Wantini, 2021) which shows a relationship between physical and psychological discomfort in pregnant women in the third trimester. As many as 64% of respondents (19 people) were primigravida pregnant women, which refers to women who are pregnant for the first time. The experience of first-time pregnancy can be challenging for expectant mothers, with physical and emotional changes that can cause various psychological problems. Lack of adaptation to body changes and limited information about pregnancy care can contribute to discomfort. A study by (Purnama et al., 2020) highlighted that primigravida who marry at a young age face multidimensional change, including physical, psychological, social, cultural, and spiritual changes.

2. Normality Test

Before the data analysis test is carried out, a normality test is first carried out. The normality test in this study uses the Shapiro-Wilk test with a p value of 0.000 <0.05. It can be concluded that the group distribution is not normal. So the hypothesis test used is Wilcoxon as seen in table 2 below.

3. Bivariate Analysis

Table 2. Differences in discomfort in the second and third trimesters of pregnancy before and after prenatal yoga

No	Types of Discomfort	Before prenatal yoga		After prenatal yoga		*P-value*
		N	%	N	%	
1	**Back pain**					
	No back pain	3	10	13	43	
	Mild pain	6	20	15	50	.000
	Moderate pain	21	70	2	7	
	Severe pain	0	0	0	0	
2	**Leg cramps**					
	No pain	0	0	3	10	
	Mild pain	6	20	24	80	.000
	Moderate pain	24	80	3	10	
	Severe pain	0	0	0	0	
3	**Sleep disorders**					
	Good	8	26	30	100	.000
	Bad	22	74	0	0	
4	**Anxiety**					
	Normal	3	10	12	40	
	Light	9	30	17	56	.000
	Currently	18	60	1	4	

Table 2 shows a bivariate analysis to determine the differences in discomfort experienced by pregnant women in the second and third trimesters before and after prenatal yoga. The results obtained include:

1. Back Pain

Initial evaluation of 30 respondents before participating in prenatal yoga showed that only a small proportion (10%, or 3 people) did not experience back pain. A small proportion experienced mild back pain, and most (70%, or 21 people) reported moderate back pain. After the prenatal yoga intervention, there was a significant change: almost half of the respondents (43%, or 13 people) did not experience back pain, some (50%, or 15 people) reported mild back pain, and only a small proportion (7%, or 2 people) still felt moderate back pain. The results of the analysis showed a p-value of 0.000, this indicates a difference in back pain before and after prenatal yoga, because the p value < 0.05

Hormonal changes during pregnancy are often the main cause of lower back pain, as they affect the soft tissues (supports) causing decreased elasticity and muscle strength. The hormones estrogen and progesterone also play a role in relaxing the joints, ligaments, and muscles in the pelvic area (Veri et al., 2023). Asanas are one of the yoga movements that can increase physical strength, muscle strength, and endurance. This exercise helps reduce pain by improving posture and strengthening the muscles that support the back. Prenatal yoga makes the muscles around the pelvis stronger, more elastic and blood circulation becomes smooth, this will reduce back and pelvic pain during pregnancy. (Aulya et al., 2023) . These results are in line with research conducted by Darwitri and Rahmadona (2022), which found that prenatal yoga is

effective in reducing the intensity of lower back pain in pregnant women in the third trimester, which is one of the common complaints during pregnancy. Changes in physical complaints experienced after prenatal yoga practice are due to the body experiencing more relaxed muscle stretching. (Darwitri & Rahmadona, 2022)

2. Leg Cramps

Leg cramps felt by pregnant women from 30 respondents before the intervention showed that a small portion (20%, or 6 people) experienced mild pain, while most (80%, or 24 people) reported moderate pain. After the prenatal yoga intervention, there was a change, namely a small portion (10%, or 3 people) did not experience leg cramps, most (80%, or 24 people) experienced mild pain, and a small portion (10%, or 3 people) experienced moderate pain. The analysis produced a p-value of 0.000, indicating a significant difference between leg cramps before and after the intervention ($p < 0.05$).

Almost all pregnant women experience cramps, especially at night, which are caused by poor blood circulation and mineral deficiencies (Handayani, 2019; Veri et al., 2023). Muscle cramps occur due to obstructed blood flow due to pressure on the uterus. In addition, this complaint is also caused by muscle stress due to carrying a heavy load (fetus). (Veri et al., 2023) Prenatal yoga increases flexibility and body mobility, and reduces muscle stiffness which can reduce pressure on blood vessels due to uterine pressure so that blood circulation can increase and provide comfort, ultimately reducing leg cramps (Handayani, 2019). Research by Darwitri and Rahmadona (2022) shows that prenatal yoga is effective in reducing physical complaints including leg cramps in pregnant women in the second trimester.

3. Sleep Dissorders

Sleep disorders experienced by pregnant women before the implementation of prenatal yoga, only 26% (8 out of 30) respondents reported not experiencing sleep problems, while 74% (22 out of 30) experienced sleep disorders. After participating in the prenatal yoga program for 4 sessions, all participants (100%) reported no longer experiencing sleep disorders. The results of the p-value analysis of 0.000 indicate that there is a very significant difference before and after the prenatal yoga intervention on improving sleep quality ($p < 0.05$).

Hormonal fluctuations during pregnancy are one of the main causes of fatigue and sleep disturbances. Increased progesterone levels, especially in the first trimester, often result in excessive daytime sleepiness. In addition to physical changes, pregnant women also experience changes in their sleep patterns (Felder et al., 2017). In yoga, there is a savasana session that contains breathing exercises that can relax the mother's mind, so that feelings of anxiety and fear can be released, optimal relaxation conditions trigger the production of endorphin hormones which provide a feeling of comfort and happiness, help calm the mind and reduce stress, this can increase the production of sleep hormones such as melatonin so that

the mother quickly becomes sleepy and falls asleep more easily. (Aulya et al., 2023). This finding is supported by research (Ilhaini R,et.al 2024), which showed a significant difference in the sleep quality of pregnant women before and after participating in a prenatal yoga program.

4. Anxiety

Anxiety in pregnant women shows that before prenatal yoga intervention, only a small portion of respondents (10%, or 3 out of 30) did not feel anxiety related to their pregnancy, almost half (30%, or 9 out of 30) experienced mild anxiety, and most (60%, or 18 out of 30) experienced moderate anxiety. After prenatal yoga, this pattern changed. Almost half of respondents (40%, or 12 out of 30) did not experience anxiety, most (56%, or 17 out of 30) experienced mild anxiety, and only a small portion (4%, or 1 out of 30) experienced moderate anxiety. The analysis results showed a p-value of 0.000. This indicates a significant difference between anxiety levels before and after prenatal yoga intervention ($p < 0.05$).

Fear and anxiety often haunt pregnant women during labor, especially because of the pain associated with the process. This condition can trigger mental and physical tension, which ends in muscle and joint stiffness. Stress or anxiety is often associated with various pregnancy outcomes, pain, other physical complaints, and mood disorders in pregnant women (Friscila WAI, 2021; Sari & Puspitasari, 2016). Some methods to overcome anxiety in pregnant women include meditation, prenatal yoga, reading uplifting books, listening to calming music, and consulting a psychologist to overcome depression (Wulandari & Wantini, 2021).

Prenatal yoga can affect the hypothalamus to reduce CRH secretion, which then affects the anterior pituitary gland to suppress the production of the hormone ACTH. This series of events results in decreased levels of adrenal hormones and cortisol, which has an impact on decreasing heart rate, respiratory rate, blood pressure, muscle tension, metabolic rate, and the production of hormones related to anxiety or stress (Maharani & Hayati, 2020). Regular and intensive prenatal yoga exercise can support the physical and psychological health of pregnant women and their fetuses (Nurvitasari, 2020). Research conducted by (Sulistiyaningsih et al., 2020) shows that gentle prenatal yoga can reduce anxiety levels in primigravida pregnant women in the third trimester when facing childbirth.

CONCLUSION

Data analysis showed a significant difference between before and after prenatal yoga on reducing complaints such as back pain, leg cramps, sleep disorders, and anxiety ($p < 0.05$). Based on the results of the analysis, it can be concluded that prenatal yoga is effective in reducing complaints during pregnancy in pregnant women in the second and third trimesters. Therefore, it is hoped that midwives can further improve the provision of IEC (Communication, Information, and Education) and optimize the implementation of

prenatal yoga as a solution to overcome physical and psychological problems in pregnant women.

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