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THE EFFECT OF PRENATAL YOGA ON SLEEP QUALITY IN THIRD-TRIMESTER PREGNANT WOMEN AT RSIA KUSUMA PRADJA SEMARANG

Gety Priskila[1)*], Dheny Rohmatika[2)], Aris Prastyoningsih[3)]

[1,2,3,4]*Midwifery Study Program Bachelor's Degree Program, Faculty of Health Sciences, Universitas Kusuma Husada Surakarta, Surakarta, Indonesia*
Email: getypris66@gmail.com

ABSTRACT

Background: Sleep is vital for maintaining health. Women in their third trimester of pregnancy often face sleep difficulties due to physical and emotional challenges. Prenatal yoga, which combines physical and mental exercises, can help promote relaxation of the body and calmness of the mind, especially during this stage. This study explored the impact of prenatal yoga on sleep quality among third-trimester pregnant women at RSIA Kusuma Pradja Semarang.
Methods: A one-group pretest-posttest design was used with 20 third-trimester pregnant women selected through total sampling.
Results: Conducted from January to May 2025 at RSIA Kusuma Pradja Semarang, the study included preliminary assessments, prenatal yoga sessions, and data collection before and after the intervention. The yoga was performed six times under the guidance of a certified instructor. Data collection involved the Pittsburgh Sleep Quality Index (PSQI) questionnaire and statistical analysis with Paired-Samples T-Test in SPSS. Prior to the yoga sessions, 12 women (60%) experienced poor sleep quality, and 8 women (40%) had good sleep. Post-intervention, 15 women (75%) reported improved sleep quality, with only 5 women (25%) remaining with poor sleep. The analysis yielded a p-value of 0.001.
Conclusion: The findings suggest that prenatal yoga significantly improves sleep quality among third-trimester pregnant women at RSIA Kusuma Pradja Semarang.
Keywords: prenatal yoga, sleep quality, third-trimester pregnant women

INTRODUCTION

Poor sleep during pregnancy can negatively impact both mother and baby, causing fatigue, weakened immunity, high blood pressure, low birth weight, premature birth, and neurological issues in infants. Sleep problems are common in pregnancy, especially in the third trimester, due to physical and mental changes like back pain, increased urination, shortness of breath, and Braxton Hicks contractions. These issues make achieving restful sleep difficult and often lead to nighttime awakenings (Akbari et al., 2024; Saraei et al., 2024).

WHO reports that globally, 41.8% of pregnant women face sleep problems, with regional rates at 48.2% in Asia, 57.1% in Africa, and up to 75% in Indonesia. National data from 2013 indicate that 36.5% of pregnant women experience sleep disturbances, most commonly in the third trimester at 22.8% (Rosidah et al., 2025; Yang et al., 2024).

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Ongoing sleep issues can cause emotional shifts, irritability, depression, and difficulty focusing (Guang, 2024).

Prenatal yoga offers a safe, drug-free way for pregnant women to engage in gentle movements, breathing exercises, and relaxation techniques tailored to their needs. Poses such as the child's pose and cat stretch can help reduce pain, improve circulation, and promote relaxation. The breathing techniques can also stimulate the parasympathetic nervous system, aiding better sleep. It can be safely practiced regularly from the second trimester until close to delivery, unless advised otherwise by a doctor (Fernandez et al., 2025; Widyawati et al., 2022).

An initial study in January 2025 at RSIA Kusuma Pradja Semarang found that five third-trimester pregnant women experienced sleep disturbances. These disturbances included back pain, swollen legs, frequent urination, and increased fetal activity. They usually addressed these issues by massaging or taking morning walks, but none had tried prenatal yoga. This study aims to find out the effect of prenatal yoga on sleep quality in pregnant women in the third trimester at RSIA Kusuma Pradja Semarang.

Since sleep disturbances among pregnant women are common and prenatal yoga may offer benefits, research is needed to determine its effect on sleep quality in third-trimester pregnant women. Therefore, the researcher is interested in conducting a study titled "The Effect of Prenatal Yoga on Sleep Quality in Third-Trimester Pregnant Women at RSIA Kusuma Pradja Semarang."

RESEARCH METHOD

This study utilized a quantitative, pre-experimental design with a single-group pretest-posttest approach. Its purpose was to assess the impact of prenatal yoga on sleep quality among third-trimester pregnant women. Measurements were taken before and after the intervention within the same group, with no control group involved, to observe changes resulting from the treatment.

The research population included all third-trimester pregnant women attending ANC visits at RSIA Kusuma Pradja Semarang from January to May 2025. A total sampling technique was employed, meaning all women meeting specific criteria were included. The total sample comprised 20 participants.

Inclusion criteria included: gestational age between 28 and 42 weeks (third trimester), willingness to participate by signing a consent form, at least 80% attendance at prenatal yoga sessions, and a healthy pregnancy without high-risk conditions. Meanwhile, the exclusion criteria for this study include: the presence of diseases or pregnancy complications such as severe preeclampsia, bleeding, heart disease, multiple pregnancy, molar pregnancy, or severe anemia; absence from all yoga sessions; or withdrawal during the study. This study has received ethical approval from the Health Research Ethics Committee of Kusuma Husada University, Surakarta, No. 2837/UKH.l.02/EC/V/2025. The data obtained were subsequently analyzed using the Wilcoxon test.

RESULTS

The research findings are presented in tables that describe the characteristics of the respondents, sleep quality before and after prenatal yoga, and the effect of prenatal yoga on the sleep quality of pregnant women in their third trimester

Table 1. Characteristics of Respondents Based on Age, Education, Parity, and Occupation (n=20)

Characteristics	Frequency (f)	Precentage (%)
Age		
20-30 Years	16	80%

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Characteristics	Frequency (f)	Precentage (%)
31-35 Years	4	20%
Education		
SMP	1	5%
Hight	8	40%
Bachelor	11	55%
Paritas		
Primipara	13	65%
Multipara	7	35%
Work		
IRT	9	45%
Entrepreneur	7	35%
Employee	4	20%

Source : Primary Data, 2025

Table 1 indicates that the majority of respondents are aged 20 to 30 years, totaling 16 people or 80%. Therefore, these respondents are classified as mothers not at risk of pregnancy. Regarding their last education, most have tertiary education (PT), numbering 11 people (55%), followed by high school with 8 people (40%), and junior high school with 1 person (5%). In terms of the number of pregnancies, most respondents are pregnant for the first time, with 13 people or 65%. Concerning occupation, the most respondents are housewives, totaling 9 people or 45%.

Table 2. Distribution of Sleep Quality of Samples Before Practicing Pregnancy Yoga

Sleep Quality	Frequency (f)	Percentage (%)
Good	8	40%
Poor	12	60%
Total	20	100%

Source: Primary Data, 2025

Table 2 shows that the respondents were distributed into good sleep quality (8 people, 40%) and poor sleep quality (12 people, 60%).

Table 3. Distribution of Sleep Quality of Samples After Practicing Pregnancy Yoga

Sleep Quality	Frequency (f)	Percentage (%)
Good	15	75%
Poor	5	25%
Total	20	100%

Source: Primary Data, 2025

According to Table 3, 15 respondents (75%) reported good sleep quality after Prenatal yoga treatment.

Table 4. The Effect of Prenatal Yoga on Sleep Quality of Third-Trimester Pregnant Women

	Mean	N	T-Test	P-Value
Before Prenatal Yoga	7.70	20	4.445	0.001
After Prenatal Yoga	3.90	20		

Source: Primary Data, 2025

According to Table 4, the average sleep quality score before prenatal yoga was 7.70, and after participating in prenatal yoga, it decreased to 3.90. The mean difference of 3.80 indicates a significant reduction after the intervention. Prenatal yoga has been shown to improve sleep quality in pregnant women in the third trimester. The T-test results

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showed a T-value of 4.445 and a p-value of 0.001 ($p < 0.05$), so the alternative hypothesis (Ha) is accepted. This indicates that prenatal yoga has a significant effect on the sleep quality of third-trimester pregnant women at RSIA Kusuma Pradja Semarang.

DISCUSSION

Respondent Characteristics

Most pregnant women were aged 20–30 years, totaling 16 people (80%). The safe age for pregnancy is between 20–35 years. Pregnancies below the age of 20 carry higher risks because the reproductive organs and mental readiness are not yet fully developed. Meanwhile, pregnancies above the age of 35 also carry risks due to the declining function of the reproductive organs (Aslina et al., 2025; Rani et al., 2023).

Most respondents had a higher education degree (50%), followed by senior high school (40%) and junior high school (10%). Education level affects how individuals receive and understand information, including how to cope with sleep disturbances during pregnancy. Respondents with higher education levels tend to understand information more easily (Notoatmojo, 2018).

There were 13 respondents (65%) who were primiparous, and 7 respondents (35%) who were multiparous. Primigravida refers to a woman who is pregnant for the first time, while multigravida refers to a woman who has been pregnant more than once. The main difference between the two lies in the condition of the cervix and the uterine ostium as they approach labor (Okunade et al., 2016; Sihotang et al., 2021).

Most respondents were housewives (45%). During pregnancy, women are advised to remain physically active as long as there are no restrictions from their doctor. Physical activity during pregnancy helps the body adapt to changes, maintain fitness, reduce the risk of complications, and help relieve stress (Garland, 2017; Gascoigne et al., 2023).

Sleep Quality Before Prenatal Yoga in Third-Trimester Pregnant Women at RSIA Kusuma Pradja Semarang

Before performing pregnancy exercise, 60% of respondents experienced poor sleep quality. A previous study showed that 88.9% of third-trimester pregnant women in Karang Anyar Village experienced sleep disturbances before practicing pregnancy exercise. Based on the Pittsburgh Sleep Quality Index (PSQI) scale, a score above 5 indicates poor sleep quality. Before participating in prenatal yoga, 12 respondents (60%) had poor sleep quality, and 8 respondents (40%) had good sleep quality (Yunanda et al., 2022). These findings align with the study from the same year, which indicates that women in their third trimester frequently encounter sleep issues. Most participants reported experiencing daytime sleepiness and nighttime sleep disturbances, often waking up because of reasons like needing the bathroom, feeling hot, uncomfortable sleeping positions, back pain from fetal growth, and nightmares. These factors compromised their ability to achieve restful sleep and reduced overall sleep quality. (Mardalena & Susanti, 2022).

Sleep Quality After Prenatal Yoga in Third-Trimester Pregnant Women at RSIA Kusuma Pradja Semarang

This study involved 20 third-trimester pregnant women using the PSQI questionnaire. After participating in prenatal yoga, 15 respondents (75%) reported good sleep quality, while 5 respondents (25%) still experienced sleep disturbances. These results indicate that prenatal yoga can help improve the sleep quality of third-trimester pregnant women at RSIA Kusuma Pradja Semarang.

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The study also found that most respondents had trouble sleeping during the third trimester due to discomforts like active fetal movements, nightly urination, back pains, and nightmares. This aligns with a Yogyakarta study that showed improved sleep quality following prenatal yoga. Before the intervention, only 3 respondents (12.5%) in their third trimester reported good sleep quality. Post-treatment, this number increased to 18 respondents (75%). Regular prenatal yoga appears to reduce physical discomfort and promote better sleep among pregnant women. (Andarini & Khalifatunnisak, 2024). This study utilized prenatal yoga to enhance sleep quality. The yoga movements promote relaxation and a sense of calm. Techniques such as controlled breathing and muscle relaxation are employed to boost comfort, soothe the mind, and regulate emotions. (Chen, 2024; Ismiyati & Faruq, 2020; Khajuria et al., 2023; Pathania et al., 2024).

The analysis revealed that the average PSQI score was 7.70 before prenatal yoga and decreased to 3.90 afterward. This 3.80-point reduction was observed in data from 20 respondents. The statistical test yielded a p-value of 0.001 ($p < 0.05$), indicating a significant difference between pre- and post-intervention scores. Therefore, it can be concluded that prenatal yoga markedly enhances sleep quality among third-trimester pregnant women at RSIA Kusuma Pradja Semarang.

CONCLUSION

Prenatal yoga significantly improves sleep quality for women in their third trimester. It helps alleviate common physical discomforts such as back pain and shortness of breath, lowers anxiety, relaxes pelvic muscles, and activates the parasympathetic nervous system.

RECOMMENDATIONS

This study's findings are intended to provide valuable information and expand understanding among healthcare professionals and the public about managing sleep disorders in women during the third trimester. Health agencies might consider offering regular prenatal yoga sessions for women in this stage through prenatal classes.

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