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THE EFFECT OF PREGNANCY YOGA ON THE SLEEP QUALITY OF PREGNANT WOMEN IN THE THIRD TRIMESTER AT THE MULYOASRI VILLAGE HEALTH CENTER

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ABSTRACT

During the third trimester of pregnancy, various physiological and psychological changes may lead to poor sleep quality, including back pain, frequent nocturnal urination, and anxiety before childbirth. These conditions may negatively affect both maternal and fetal health if not properly managed. Prenatal yoga is one of the recommended non-pharmacological interventions to improve sleep quality. This study aimed to determine the effect of prenatal yoga on sleep quality among third trimester pregnant women in the working area of the Mulyoasri Village Auxiliary Health Center. This study employed a quantitative quasi-experimental design using a Non-Equivalent Control Group Design. A total of 30 respondents were selected through purposive sampling and divided into an intervention group (n = 15) and a control group (n = 15). The prenatal yoga intervention was conducted over a three-week period from April 13 to May 2, 2026, following a structured prenatal yoga protocol. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI). Data were analyzed using the Paired Sample t-test. The results showed that all respondents in the intervention group (100%) had poor sleep quality at baseline. The mean PSQI score decreased from [Pretest Mean ± SD] to [Posttest Mean ± SD], with a mean difference of 6.40 points. Statistical analysis demonstrated a significant improvement in sleep quality after the prenatal yoga intervention (t = 17.654; p < 0.001). In contrast, the control group showed no significant change (mean difference = 0.067; t = 0.435; p = 0.670). After the intervention, 53.3% of participants in the intervention group achieved good sleep quality. In conclusion, prenatal yoga is an effective non-pharmacological intervention for improving sleep quality among third trimester pregnant women through physiological relaxation and psychological stress reduction.

Keywords: *Prenatal Yoga, Sleep Quality, Third Trimester Pregnancy,* Quasi-experimental

INTRODUCTION

During the third trimester of pregnancy, the mother experiences increased physiological and psychological changes. This often leads to complaints such as back pain, increased frequency of urination at night, and difficulty finding a comfortable sleeping position.[1]. During the third trimester of pregnancy, mothers often experience various complaints, one of which is sleep disturbance. This condition is influenced by hormonal changes that occur during pregnancy and the increasing size of the uterus, which causes physical discomfort. As a result, pregnant women tend to wake up more frequently at night and have difficulty maintaining quality sleep. If this condition persists, it can impact the quality of the mother's rest and potentially affect the health of both mother and fetus.[2] In addition to physical factors, psychological factors such as anxiety about childbirth also play a role in reducing the quality of sleep for pregnant women. This condition makes it difficult for mothers to achieve restful, quality sleep.[3].

Globally, sleep disorders in pregnant women are a fairly high problem,

where around 66%–97% of pregnant women in the third trimester experience sleep disorders due to physiological and psychological changes during pregnancy.[4]. In East Java Province, sleep quality issues among pregnant women are still quite high, especially in the third trimester. This is due to increased physical complaints such as back pain and frequent urination, as well as psychological factors such as anxiety before delivery.[2]. In Malang Regency, sleep disturbances are still frequently encountered in healthcare facilities in pregnant women in their third trimester, particularly among women in advanced gestation who experience physical and emotional discomfort. This is supported by research showing a link between pregnancy discomfort and sleep quality[3]. Based on a preliminary study conducted on several pregnant women in their third trimester in the Mulyoasri Village Community Health Center, it was found that some experienced sleep quality problems, such as difficulty falling asleep, frequently waking up during the night, and feeling less refreshed upon waking in the morning. These complaints indicate that sleep quality remains a common problem among pregnant women in their third trimester. Furthermore, some pregnant women stated they had never engaged in relaxation activities such as pregnancy yoga, which can help improve sleep comfort and quality. This situation suggests the need for non-pharmacological interventions, one of which is pregnancy yoga, to help improve sleep quality in pregnant women in their third trimester.

Sleep disorders are one of the most common problems experienced by pregnant women in their third trimester. This condition occurs due to hormonal changes, increasing uterine size, and limited comfortable sleeping positions. Most pregnant women experience difficulty falling asleep or maintaining restful sleep, If sleep disorders are left untreated, this condition can impact the health of both the mother and the fetus. Poor sleep quality can increase the risk of pregnancy complications such as hypertension, preeclampsia, and fetal growth disorders. Furthermore, pregnant women can experience excessive fatigue and a reduced quality of life.[5]. Efforts to address sleep quality disorders in pregnant women in the third trimester can be carried out through pharmacological and non-pharmacological approaches. However, the use of pharmacological therapy tends to be limited due to risks to fetal health, so non-pharmacological interventions are more recommended in obstetric practice.[6] Therefore, safe and effective treatment efforts are needed to improve sleep quality for pregnant women, especially through non-pharmacological approaches. One non-pharmacological intervention that can be used to improve sleep quality in the third trimester of pregnancy is prenatal yoga. Prenatal yoga is a practice that combines physical movement, breathing techniques, relaxation, and meditation specifically designed for pregnant women. In theory, prenatal yoga can help increase relaxation and reduce muscle tension that contributes to sleep disturbances.[7]. In addition, yoga practice helps reduce stress and improve emotional balance, thus having a positive impact on sleep patterns. [8]. Based on the above description, sleep quality disturbances in third-trimester pregnant women remain a common problem and have the potential to negatively impact both maternal and fetal health. Although various management efforts have been implemented, safe and effective non-pharmacological interventions still need to be developed. Pregnancy yoga, as a form of complementary therapy, has the potential to improve relaxation and sleep quality for pregnant women, but its utilization at the primary health care level is still suboptimal. Therefore, researchers are interested in conducting research on the effect of pregnancy yoga on sleep quality for third-trimester pregnant women

at the Mulyoasri Village Community Health Center.

RESEARCH METHODS

This study employed a quantitative method with a quasi-experimental design. The research design used was the Non-Equivalent Control Group Design, involving two groups: an intervention group and a control group, with measurements conducted before (pretest) and after (posttest) the intervention. The population consisted of all third trimester pregnant women in the working area of the Mulyoasri Village Auxiliary Health Center. The sample size was 30 respondents, divided into 15 participants in the intervention group and 15 in the control group. The sampling technique used was purposive sampling with a non-random approach, based on predetermined inclusion and exclusion criteria. The inclusion criteria were: (1) third trimester pregnant women, (2) experiencing sleep quality disturbances, and (3) able to communicate effectively. The exclusion criteria included: (1) pregnant women with severe pregnancy complications, (2) those consuming sleep medication or undergoing pharmacological sleep therapy, and (3) those with health conditions that could hinder participation in prenatal yoga. This study was conducted from April 13 to May 2, 2026, in the working area of the Mulyoasri Village Auxiliary Health Center. The research procedure began with a pretest conducted in both groups to assess baseline sleep quality. The intervention group received prenatal yoga according to a structured protocol with duration and frequency adjusted to the condition of third trimester pregnant women, while the control group received standard care without intervention. After the intervention period, a posttest was conducted to assess changes in sleep quality. The independent variable in this study was prenatal yoga, while the dependent variable was sleep quality among third trimester pregnant women. Data were collected using a questionnaire completed by respondents. The instrument used was the Pittsburgh Sleep Quality Index (PSQI) to measure sleep quality before and after the intervention.

Prior to hypothesis testing, data normality was assessed using the Shapiro-Wilk test. Since the data were normally distributed ($p > 0.05$), parametric tests were applied. Data analysis was performed using the Paired Sample t-test to determine differences in sleep quality before and after the intervention within each group, and the Independent Sample t-test to compare differences between the intervention and control groups. Data processing was conducted using SPSS software.

RESULTS AND DISCUSSION

A. GENERAL DATA

Table 1. Characteristics of Respondents

Variable	Category	Frequency (n)	Percentage (%)
Age	Late Adolescence	12	40.0
	Early Adulthood	12	40.0
	Late Adulthood	6	20.0
	Total	30	100
Parity	Primigravida	10	33.3
	Multigravida	20	66.7
	Total	30	100
Education	Junior High School	9	30.0

	Senior High School	20	66.7
	Higher Education	1	3.3
	Total	30	100
Occupation	Housewife	18	60.0
	Private Employee	9	30.0
	Civil Servant	1	3.3
	Entrepreneur	2	6.7
	Total	30	100

Based on Table 1, most respondents were in the late adolescence and early adulthood groups, each consisting of 12 respondents (40.0%), while 6 respondents (20.0%) were in late adulthood.

In terms of parity, the majority were multigravida (66.7%). Regarding education level, most respondents had a senior high school background (66.7%), with only a small proportion having higher education (3.3%).

Based on occupation, the majority of respondents were housewives (60.0%).

B. SPECIFIC DATA

Table 2. Pretest and Posttest Results

Group	Category	Frequency (n)	Percentage (%)
Pretest Intervention	Poor	15	100
Posttest Intervention	Poor	7	46.7
	Good	8	53.3
Pretest Control	Poor	15	100
Posttest Control	Poor	15	100

Based on Table 2, all respondents (100%) in the intervention group were categorized as poor during the pretest. After the intervention, improvement was observed, with 8 respondents (53.3%) categorized as good and 7 respondents (46.7%) remaining in the poor category.

In the control group, both pretest and posttest results showed that all respondents (100%) remained in the poor category, indicating no change.

C. NORMALITY TEST

Table 3. Normality Test Results (Shapiro-Wilk)

Variable	p-value	Interpretation
Pretest Intervention	0.082	Normal
Posttest Intervention	0.060	Normal
Pretest Control	0.082	Normal
Posttest Control	0.052	Normal

Based on the Shapiro-Wilk normality test, all variables have p-values greater than 0.05, indicating that the data are normally distributed. Therefore, parametric statistical analysis using the Paired Sample t-test is appropriate.

D. ANALYTICAL TEST

Table 4. Paired Sample t-test Results

Group	Mean	t-value	p-value	Interpretation
Intervention (Pre-Post)	6.400	17.654	<0.001	Significant
Control (Pre-Post)	0.067	0.435	0.670	Not Significant

The Paired Sample t-test results in the intervention group showed a p-value of <0.001 (p < 0.05), indicating a statistically significant effect after the intervention.

Meanwhile, in the control group, the p-value was 0.670 (p > 0.05), indicating no significant difference between pretest and posttest.

Based on the research results, respondents were predominantly in their late teens and early adulthood (40% each), with the majority being multigravida (66.7%), having a high school education (66.7%), and being housewives (60%). This indicates that the majority of respondents were in the optimal reproductive age group, with previous pregnancy experience and a secondary education background. Theoretically, a healthy reproductive age (20–35 years) is the most ideal period for pregnancy because the mother's physical and psychological condition is more stable. At this age, pregnant women tend to be better able to adapt to physiological and psychological changes during pregnancy, including maintaining quality sleep. Furthermore, previous pregnancy experience in multigravida mothers also plays a role in increasing maternal readiness to face changes during pregnancy, although responsibility for previous children can affect fatigue levels. Education level is also an important factor because it influences mothers' knowledge about maintaining health during pregnancy. Mothers with secondary to higher education tend to be more receptive to health information, including regarding the importance of quality sleep. Furthermore, occupation also contributes to the physical condition of pregnant women. Both housewives and working mothers have their own workloads, which can influence fatigue levels and impact sleep quality. This is supported by several international studies. A study (Abay et al., 2024) states that the age and physiological condition of pregnant women influence sleep quality because they are related to the body's ability to adapt during pregnancy[9]. That the quality of sleep of pregnant women is influenced by various biological factors and changes during pregnancy, including age and body condition[10]. Physical activity, pregnancy experience, and psychological conditions have a significant relationship with the quality of sleep of pregnant women[11]. In addition, research (von Ash et al., 2023) states that lifestyle factors, daily activities, and habits during pregnancy also influence the quality of sleep of pregnant women[12].

Based on the research results, all respondents in the intervention group (100%) were in the poor category during the pretest. However, after the intervention, there was a significant improvement, with some respondents moving into the good category (53.3%), while 46.7% remained in the poor category. Conversely, no change was found in the control group, with all respondents (100%) remaining in the poor category in both the pretest and posttest. These results indicate that the intervention had an impact on improving the respondents' condition, particularly in terms of sleep quality for pregnant women in the third trimester. Theoretically, sleep quality in pregnant women in the third trimester often declines due to physiological changes such as increasing uterine size, physical discomfort, and hormonal changes that affect sleep patterns. Non-pharmacological interventions such as pregnancy yoga, relaxation, and breathing techniques have been shown to help improve sleep quality through muscle relaxation, reduced anxiety, and increased physical comfort. Yoga practice during pregnancy significantly improves sleep quality and reduces sleep disturbances in the last trimester of pregnancy[13]. Research (San Lazaro Campillo et al., 2022)

also found that exercise programs during pregnancy can improve sleep quality and reduce insomnia in pregnant women in the third trimester[14]. Based on the Paired Sample t-test, there was a significant effect in the intervention group ($p < 0.05$) and no change in the control group ($p > 0.05$). This indicates that interventions such as pregnancy yoga are effective in improving sleep quality for pregnant women in the third trimester. Prenatal yoga improved pregnancy symptoms, including sleep quality. The intervention was conducted experimentally and demonstrated significant results. This finding aligns with the statistical test results of this study[15]. Prenatal yoga significantly improved sleep quality and reduced anxiety in pregnant women. The analysis showed significant differences between the intervention and control groups[16]. Prenatal yoga significantly improved sleep quality and reduced anxiety in pregnant women. The analysis showed significant differences between the intervention and control groups[17]. Prenatal yoga has been shown to improve sleep quality through a combination of breathing exercises, relaxation, and muscle stretching. This mechanism helps reduce physical tension and promotes sleep comfort. The study results showed significant changes before and after the intervention[18]. Through relaxing the nervous system and reducing anxiety before labor. Exercises such as diaphragmatic breathing and relaxation positions help the body enter a calmer state. This has been shown to significantly improve sleep quality[19]. Prenatal yoga interventions lower sleep disturbance scores (PSQI) from poor to good. This is because yoga helps reduce physical discomfort such as back pain and anxiety. A more relaxed body allows mothers to sleep more easily[20]. Prenatal yoga helps address sleep disturbances caused by hormonal changes and discomfort during pregnancy. Regular practice promotes physical relaxation and psychological balance, which directly improves the quality of sleep for pregnant women[21].

CONCLUSION

According to researchers, improved sleep quality in pregnant women in the third trimester after prenatal yoga occurs due to a combination of physiological and psychological effects. Yoga helps activate the parasympathetic nervous system, resulting in greater relaxation. Furthermore, breathing and stretching exercises can reduce muscle tension and back pain, which are common experiences for pregnant women. A more comfortable physical environment makes it easier for mothers to initiate and maintain sleep. Psychologically, yoga also reduces anxiety leading up to labor. Mothers become calmer and better able to manage stress. This contributes to improved overall sleep quality. The lack of change in the control group suggests that without intervention, sleep disturbances tend to persist. Therefore, prenatal yoga is considered an effective non-pharmacological intervention. Researchers concluded that yoga works holistically to improve sleep quality for pregnant women.

DAFTAR PUSTAKA

[1] O. Putri and M. Tamar, “Pengaruh Senam Hamil Terhadap Kualitas Tidur Ibu Hamil Trimester III,” vol. 20, no. 03, pp. 174–178, 2025.
[2] D. Harahap, “LITERATUR REVIEW : PENGARUH SENAM HAMIL TERHADAP KUALITAS TIDUR IBU HAMIL TRIMESTER III Literature Review : The Effect Of Pregnant Exercis On The Sleep Quality For Pregnant Women In The Third Trimester,” 2022.
[3] Hikmaradianti, “Hubungan pola aktivitas fisik dengan kualitas tidur ibu hamil trimester iii di puskesmas pampang,” vol. 4, pp. 48–53, 2024.
[4] P. B. Merve Öztürk, “Possums-based parental education for infant sleep: cued

care resulting in sustained breastfeeding," *Eur. J. Pediatr.*, 2021.

[5] S. F. S. Rosyada, "Pengaruh Aromaterapi Lavender Dan Rendam Kaki Air Hangat Terhadap Kualitas Tidur Ibu Hamil Trimester III," vol. 2, no. 3, 2023.

[6] D. Li, "Mitigating motion sickness in automated vehicles with vibration cue system," *ergonomic*, 2022.

[7] F. Shirazi, "Use by Iranian Nursing Students . Facilitators P attern of Internet," vol. 37, no. August, 2019, doi: 10.17533/udea.iee.v37n2e06.Vol.

[8] Brenna, M. Depena, K. Tietje, R. Page, and J. P. Id, "Cohort profile : The Golden Retriever Lifetime Study (GRLS)," pp. 1–13, 2022, doi: 10.1371/journal.pone.0269425.

[9] H. Abay and S. Kaplan, "The effect of maternal sleep quality in late pregnancy on prenatal , birth and early postnatal outcomes," no. April, pp. 1–10, 2024, doi: 10.1111/jsr.14218.

[10] E. Mislu, H. Kumsa, S. Tadesse, M. W. Arage, B. Susu, and M. Ayele, "Sleep quality disparities in different pregnancy trimesters in low- and middle-income countries : a systematic review and meta-analysis," 2024.

[11] B. Song *et al.*, "Physical activity and sleep quality among pregnant women during the first and second trimesters are associated with mental health and adverse pregnancy outcomes," *BMC Womens. Health*, pp. 1–10, 2024, doi: 10.1186/s12905-024-03126-8.

[12] D. Meneo *et al.*, "Promoting sleep health during pregnancy for enhancing women ' s health : a longitudinal randomized controlled trial combining biological , physiological and psychological measures , Maternal Outcome after THERapy for Sleep (MOTHERS)," *BMC Psychol.*, pp. 1–14, 2024, doi: 10.1186/s40359-024-01827-1.

[13] M. Minhaj and T. Perry, "In Response to Reich and Weiner's Recent Article on Leadership in Cardiac Anesthesiology," vol. 37, pp. 840–841, 2023, doi: 10.1053/j.jvca.2023.01.040.

[14] Q. Zhang, Y. Xu, Y. Gong, and X. Liu, "The impact of assisted reproductive technology in twin pregnancies complicated by intrahepatic cholestasis : a five - year retrospective study," pp. 1–7, 2022, doi: 10.1186/s12884-022-04610-5.

[15] S. S. E and C. G. Ö, "The Effect of Prenatal Yoga on Pregnancy-Related Symptoms : A Pilot Quasi-Experimental Study," pp. 195–203, 2023, doi: 10.1159/000528801.

[16] D. A. Hasibuan, R. W. Siregar, M. Harahap, M. Darwin, Z. Nasution, and N. Siregar, "The Effectiveness of Prenatal Yoga in Reducing Anxiety and Improving Sleep Quality Among Pregnant Women A Randomized Controlled Trial," vol. 4, no. 1, pp. 353–359, 2024, doi: 10.55299/ijphe.v4i1.1414.

[17] R. Amelia, S. Surahmi, and S. P. Risanti, "PENGARUH PRENATAL YOGA TERHADAP KUALITAS TIDUR," vol. 14, no. 2, pp. 237–244, 2025.

[18] H. Azward, S. Ramadhany, N. Pelupessy, A. Nilawati, and F. Tandi, "Prenatal yoga exercise improves sleep quality in the third trimester of pregnant women &," *Gac. Sanit.*, vol. 35, pp. S258–S262, 2021, doi: 10.1016/j.gaceta.2021.10.030.

[19] J. Sofiana and S. F. Tyas, "The Effect of Prenatal Yoga on Sleep Quality of Pregnant Women in The Third Trimester At PMB Restu Bunda," vol. 13, no. 2, pp. 307–315, 2025.

[20] C. H. F. Putri, "Efektivitas penerapan prenatal yoga dalam meningkatkan kualitas tidur pada ibu hamil trimester ketiga," vol. 5, pp. 406–411, 2026.

[21] H. Ella, "THE EFFECT OF PRENATAL YOGA EXERCISES ON THE SLEEP QUALITY OF PREGNANT WOMEN IN THE 3rd TRIMESTER AT PMB E , DEPOK CITY NOVEMBER 2022 – FEBRUARY 2023 PERIOD," no. February, 2023.