

The Effectiveness Of Prenatal Yoga Movements To Improve The Sleep Quality Of Pregnant Women Tm Iii At Pmb Midwife Umroh Grogol Sukoharjo

Pramita Sandy Ulya Imannura¹,
Enyk Yunanto²

^{*1} Midwife, Health, Kusuma Husada
University, info@ukh.ac.id
(0271) 857724)

² Midwife, Health, Kusuma Husada
University, info@ukh.ac.id
(0271) 857724)

ABSTRACT

Yoga also affects the hypothalamus to suppress the secretion of CRH which will affect the anterior lobe pituitary gland to suppress the release of the hormone ACTH so that the production of adrenal hormones and cortisol decreases and orders the anterior lobe pituitary gland to release the hormone endorpin. Yoga will inhibit the increase of sympathetic nerves so that the hormones that cause body dysregulation can be reduced in number. The parasympathetic nervous system signals to influence the release of catecholamines, resulting in a decrease in heart rate, breathing rhythm, blood pressure, muscle tension, metabolic rate and the production of hormones that cause anxiety or stress. To determine the effectiveness of prenatal yoga to improve the quality of sleep of pregnant women TM III. Pre-experimental design is one-group pretest- posttest design where one group of subjects and observations are made before and after treatment. The population in this study were all TM III pregnant women with sample criteria being pregnant women who had a gestational age of 28-40 weeks and without any complications during pregnancy as many as 20 people. Data analysis using univariate analysis, normality test, bivariate test with Wilcoxon. Normality test with Kolmogorov smirnov test showed $p=0,000$ so it is not normal. Statistical test results with Wilcoxon test showed that the value of $p=0.000$ ($p<0.05$) which showed that there was an effect of prenatal yoga on increasing. There is an effect of prenatal yoga movements on improving the quality of sleep of third trimester pregnant women.

Keywords: Pregnancy, Prenatal Yoga, Sleep Quality

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INTRODUCTION

Physiological changes during pregnancy occur due to fetal growth and development and preparation for labour (Soma-Pillay et al., 2016). Physiological changes that occur often cause discomfort in each trimester of pregnancy. Trimester III is a trimester phase that gets attention because of the many discomforts felt by mothers due to rapid fetal growth and development. TM III discomforts include; sleep disturbances, additional body weight due to increased fetal growth and development. the height of the fundus uteri, causing low back pain and anxiety about the labour process (Suryani and Handayani, 2018).

Changes in sleep during pregnancy reflect alterations of several modified body-mind aspects including anatomical, physiological, hormonal and psychological factors. Increased weight (up to 20% more than pre-gestational weight) and uterine volume comprise the most significant anatomical changes; uterine volume affects diaphragm elevation, leading to respiratory impairment. Body repositioning difficulties affect both sleep continuity and initiation. Primary physiological factors include cardio-respiratory changes such as increased pulse rate, blood pressure, and respiratory frequency, with an augmented alveolar/arterial oxygen gradient. Sympathetic activity, which is partially mediated by hormonal changes, is also increased during pregnancy, as are cardiac load and ejection fraction. All of these changes contribute to the fatigue and exhaustion endured by the expecting mother. (Rosalia and Irene, 2019)

Efforts that can be made to overcome complaints of sleep disorders in pregnant women can be through pharmacological and non-pharmacological therapies. Yoga is one of the non-pharmacological therapies. Yoga itself is a classical form of exercise that focuses on strength, flexibility, and breathing to improve physical, mental, and spiritual health. There are many types of yoga including Iyengar yoga, Hatha Yoga, and Tibetan Yoga (Wang et al., 2020) Prenatal yoga is a modification of classical yoga that has been adapted to the physical conditions of pregnant women who are carried out with a gentler and slower intensity. Modifications and special attention when practicing prenatal yoga are needed to avoid injury, and also for comfort and safety (Pujiastuti, 2014).

Yoga also affects the hypothalamus to suppress CRH secretion which will affect the anterior lobe pituitary gland to suppress the release of ACTH hormone so that the production of adrenal hormones and cortisol decreases and orders the anterior lobe pituitary gland to release endorphin hormones. Yoga will inhibit the increase in sympathetic nerves so that hormones that cause body dysregulation can be reduced in number. The parasympathetic nervous system gives signals to influence the release of catecholamines. As a result, there is a decrease in heart rate, breathing rhythm, blood pressure, muscle tension, metabolic rate and production of hormones that cause anxiety or stress (Maharani & Hayati, 2020).

METHODS

In this study, the type used is a pre-experimental design, namely one-group pretest-posttest design where one group of subjects and observations are carried out before and after treatment without a control group (Arikunto, 2006).

This research design uses a pre-experimental design, namely one-group pretest-posttest design where one group of subjects and observations are carried out before and after treatment. The population in this study were all pregnant women in TM III with sample criteria being pregnant women who had a gestational age of 28-40 weeks and without any complications during pregnancy as many as 20 people. This study has obtained permission from the ethics commission and prenatal yoga training was given by certified prenatal yoga practitioners.

Based on the research pattern, it can be seen that there are two stages of observation at the time of the pre-test and post-test and one treatment carried out between the two observations. This is done to see if there is a comparison of conditions before and after the research treatment is carried out.

The measuring instrument used to measure the quality of sleep of pregnant women is the Pittsburgh Sleep Quality Index (PSQI) questionnaire which consists of seven test components including subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleeping pills, and daytime sleep dysfunction. In this study, respondents were given a pre-test and then given treatment in the form of prenatal yoga for 1 month (4 weeks) with exercises given once a week. Then a post-test was carried out using the PSQI questionnaire. The location of the study was at PBM Bidan Umroh Sukoharjo. The data

analysis used in this study was bivariate analysis using the Wilcoxon rank test/Wilcoxon Matched Pair Signed-Rank Test which is a non-parametric analysis. The research time was from January 7 to April 7, 2024 starting at 09.00 to 10.30 WIB. The location of the study was at PBM Bidan Umroh Sukoharjo.

RESULT

1. Univariate Analysis of Research Subject Characteristics

Table 1. Distribution of respondents by age

No	Age	Amount (A)	Percentage (%)
1	< 20 year	0	0,0
2	20-35 year	18	90,0
3	> 35 year	2	10,0
	Amount	20	100,0

Source: Primary Data, 2024

Based on table 1 above, it was obtained that the majority of respondents were aged 20-35 years, amounting to 18 respondents (90.0%), while the least were over 35 years old, amounting to 2 respondents (10.0%) and there were no respondents aged under 20 years (0.0%).

Table 2. Distribution of respondents based on education

No	Qualification	Amount (A)	Percentage (%)
1	S2	1	5,0
2	S1	19	95,0
	Amount	20	100,0

Source: Primary Data, 2024

Based on table 2 above, the data obtained shows that the majority of respondents have a bachelor's degree, namely 19 respondents (95.0%), while the fewest respondents have a master's degree, namely 1 respondent (5.0%).

2. Univariate Analysis of Characteristics of Research Variables

Table 3. Distribution of respondents based on maternal sleep quality before prenatal yoga intervention

No	Pre sleep quality	Amount (A)	Percentage (%)
1	Good (≤ 5)	11	55,0
2	Bad (> 5)	9	45,0
	Amount	20	100,0

Source: Primary Data, 2024

Based on table 3 above, the respondent data shows that most respondents have good sleep quality, namely 11 respondents (55.0%), while the fewest respondents have poor sleep quality, namely 9 respondents (45.0%).

Table 4. Distribution of respondents based on maternal sleep quality after prenatal yoga intervention

No	Post sleep quality	Amount (A)	Percentage (%)
1	Good (≤ 5)	14	70,0
2	Bad (> 5)	6	30,0
	Amount	20	100,0

Source: Primary Data, 2024

Based on table 3 above, the respondent data shows that most respondents have good sleep quality, namely 14 respondents (70.0%), while the fewest respondents have poor sleep quality, namely 6 respondents (30.0%).

3. Data Normality Test

The data normality test in this study used the Shapiro Wilk test because the number of respondents was less than 50. The data had a pre-test with an abnormal distribution, namely $p = 0.000$ ($p < 0.05$). In the analysis of paired data, namely pre and post, if the data is not normally distributed, then the analysis uses the Wilcoxon sign rank test.

Table 5. Research Data Normality Test

Variabel	Value V	Value limits	assumptions
Pre-pregnancy sleep quality	0,000	< 0,05	Abnormal

The results of the normality test showed that the pretest data on the quality of sleep of pregnant women were not normally distributed ($p < 0.05$), so the data distribution was not normal.

4. Analysis of the Effectiveness of Prenatal Yoga on Improving the Sleep Quality of Pregnant Women in the Third Month

Table 6. Wilcoxon Test of Sleep Quality of Pregnant Women in the Third Month Before and After Prenatal Yoga Intervention

	N	Mean Rank	Sum of Ranks	Z	Asymp. Sig (2-tailed)
Negative Ranks	15	8,00	120,00	-3,578	0,000
Positive Ranks	0	0,00	0,00		
Ties	5				

Source: Primary Data, 2023

The results of the analysis showed negative ranks or differences (negative) between the sleep quality of pregnant women in the third trimester for the pre-test and post-test was 15. The Mean Rank value was 8.00, while the Sum Rank value also showed a value of 120.00. Thus indicating a decrease in value from the pre-test to the post-test value.

Positive ranks or differences (positive) between the sleep quality of pregnant women in the third trimester for the pre-test and post-test were 0. Both the Mean Rank and Sum Rank values were 0. Thus indicating no increase in value from the pre-test to the post-test value.

Ties are the similarity of the sleep quality values of pregnant women in the third trimester for the pre-test and post-test, the Ties value is 5, so it can be said that there is the same value between the sleep quality of pregnant women in the third trimester for the pre-test and post-test.

The results of the analysis before and after the prenatal yoga intervention were carried out using the Wilcoxon test, showing that $p = 0.000$ ($p < 0.05$), so it can be concluded that there is a difference in the sleep quality of pregnant women in the third trimester before and after the prenatal yoga intervention was given.

DISCUSSION

Sleep disorders during pregnancy occur due to hormonal, physical and psychological factors. Psychological disorders such as anxiety and depression often cause tension and disrupt sleep patterns. According to the National Sleep Foundation in Komalasari, 97.3% of pregnant women in the third trimester always wake up at night and an average of 78% of pregnant women in America experience sleep disorders. Sleep disorders during pregnancy occur during the first trimester as much as 13% to 80% and the third trimester as much as 66% to 97% while in Indonesia, 97% of pregnant women in the third trimester experience sleep disorders.

One of the efforts to overcome sleep difficulties carried out during this preliminary study included providing education that difficulty sleeping due to frequent urination is physiological, providing education to families to always provide support to mothers not to think too much about unnecessary things, and pregnancy exercises are an important method to maintain or improve physical balance for prospective mothers or are an effort to achieve optimal conditions in preparing for the labor process by designing exercises for pregnant women (Maryunani & Sukaryati, 2011).

Efforts that can be made to overcome complaints of sleep disorders in pregnant women can be through pharmacological and non-pharmacological therapy. Yoga is one of the non-pharmacological therapies. Yoga itself is a form of classical exercise that focuses on strength, flexibility, and breathing to improve physical, mental, and spiritual health. There are many types of yoga including Iyengar yoga, Hatha Yoga, and Tibetan Yoga (Wang et al., 2020). Prenatal yoga is a modification of classical yoga that has been adjusted to the physical condition of pregnant women which is done with a gentler and slower intensity. Modification and special attention when practicing prenatal yoga are needed to avoid injury, and also for comfort and safety (Pujiastuti, 2014). Prenatal yoga in Indonesia is regulated in Government Regulation of the Republic of Indonesia Number 103 of 2014 concerning Traditional Health Services. In its implementation, prenatal yoga can be integrated with health services at health facilities. Yoga also affects the hypothalamus to suppress CRH secretion which will affect the anterior lobe pituitary gland to suppress the release of ACTH hormone so that the production of adrenal hormones and cortisol decreases and orders the anterior lobe pituitary gland to release endorphin hormones. Yoga will inhibit the increase in sympathetic nerves so that hormones that cause body dysregulation can be reduced in number. The parasympathetic nervous system gives signals to influence the release of catecholamines. As a result, there is a decrease in heart rate, breathing rhythm, blood pressure, muscle tension, metabolic rate and production of hormones that cause anxiety or stress (Maharani & Hayati, 2020).

CONCLUSION

Conclusions obtained from the study of prenatal yoga to improve the quality of sleep of pregnant women in the third trimester. To determine the characteristics of respondents, improve sleep quality, and analyze the effectiveness of prenatal yoga on the quality of sleep of pregnant women in the third trimester. During the education, the coordinator demonstrated prenatal yoga movements followed by pregnant women. The demonstration of prenatal yoga movements was supervised and justified by the coordinator. To determine the level of knowledge and accuracy of mothers about prenatal yoga movement techniques, an evaluation was carried out by practicing prenatal yoga movement techniques and an increase in the effectiveness of prenatal yoga was obtained. The results of the analysis before and after the prenatal yoga intervention were carried out using the Wilcoxon test showing that $p = 0.000$ ($p < 0.05$), so it can be concluded that there is a difference in the quality of sleep of pregnant women in the third trimester before and after the prenatal yoga intervention was given.

REFERENCES

- Arikunto. 2006. *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta : PT. Rineka Cipta
- Maharani, S., & Hayati, F. (2020). Pengaruh Prenatal Gentle Yoga Terhadap Tingkat Kecemasan Ibu Hamil Menghadapi Persalinan. *Jurnal Endurance*, 5(1), 161. <https://doi.org/10.22216/jen.v5i1.4524>
- Maryunani A. 2016. *Manajemen Kebidanan Terlengkap*. Jakarta: CV. Trans Info Media
- Maryunani, A & Sukaryati Y. (2011). *Senam Hamil, Senam Nifas dan Terapi Musik*. Jakarta: CV. Trans Invo Media.

- Rosalia and Irene, 2019. Sleep disorders in pregnancy. Jul-Sep;12(3):232-239. doi: 10.5935/1984-0063.20190098.
- Sindhu P. 2009. Yoga untuk kehamilan sehat, bahagia dan penuh makna. Seri bugar. Bandung: Qonita, Mizan Pustaka. _____. 2014. Yoga Untuk Kehamilan Sehat, Bahagia, & Penuh Makna. Edisi yang Diperkaya. Bandung: Qanita.
- Suryani, P. and Handayani, I. (2018) 'Senam Hamil Dan Ketidaknyamanan Ibu Hamil Trimester Ketiga', Jurnal Bidan "Midwife Journal", 5(01), pp. 33–39.
- Soma-Pillay et al., 2016. Physiological changes in pregnancy. 2016 Mar-Apr;27(2):89-94. doi: 10.5830/CVJA-2016-021.
- Wang, W. L., Chen, K. H., Pan, Y. C., Yang, S. N., & Chan, Y. Y. (2020). The effect of yoga on sleep quality and insomnia in women with sleep problems: A systematic review and meta-analysis. BMC Psychiatry, 20(1), 1–19. <https://doi.org/10.1186/s12888-020-02566-4>