



Effectiveness of Prenatal Yoga on Quality Improvement Pregnant Women's Sleep in the Third Trimester

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ABSTRACT

Pregnant women in the third trimester experience physical and psychological changes. This condition causes pregnant women to experience discomfort such as sleep disturbances. One way to overcome this condition is by doing prenatal yoga. This study aims to determine the effectiveness of prenatal yoga in improving the sleep quality of pregnant women in the third trimester. This research uses a Quasi Experimental method with a One Group Pretest-Posttest Design. The sample in this study consisted of 30 pregnant women in the third trimester using a purposive sampling technique. This research was carried out in March-May 2023. Data was collected by observation and analyzed using non-parametric tests. Univariate analysis results showed that the average sleep quality was before (mean = 9.20 and SD = 1.476) and after (mean = 5 and SD = 0.816). Bivariate analysis results showed that there was an effect of prenatal yoga on improving sleep quality in third trimester pregnant women with a Z value = 2.871 and p value = 0.004. So, it can be concluded that there is an influence of prenatal yoga on improving sleep quality in third trimester pregnant women.

INTRODUCTION

During this time in their life, worms naturally go through the pregnancy process. A woman's body will undergo a variety of psychological and physical modifications throughout the pregnancy process (Tyastuti, 2016). Pregnancy-related physiological alterations include modifications to the reproductive, metabolic, hematopoietic, cardiovascular, respiratory, endocrine/hormonal, and other systems. The changes in mental state that occur in a woman during the pregnancy process are influenced by the hormonal system (Holden et al., 2019; Yilmaz et al., 2017). Mothers tend to have negative emotions, such as feeling more sensitive, easily angry, and quickly empathizing when they need more support or attention, as a result of the occurrence of terrible alterations in pregnant women (Yilmaz et al., 2017). One of the most common complaints from pregnant women is that they are unable to prevent sleep problems or sleep disorders, which significantly lowers their performance at work (Wang et al., 2020). Pregnancy-related sleep disruptions can affect insomnia because they alter sleep duration and quality (Kundarti et al., 2020). Sleeping less than three hours in a 24-hour period can cause emotional problems, a decrease in attention span, trouble focusing, a general loss in performance, a tendency to be easily influenced, and even hallucinations (Puri K, 2011).

Indicators of sleep quality were provided by the National Sleep Foundation (NSF), and they include sleeping longer in bed, falling asleep within 30 minutes, waking up more frequently than once a night, and staying up for 20 minutes or less (Wang et al., 2020). The Pittsburgh Sleep Quality Index (PSQI), which consists of seven test components – subjective sleep quality, sleep latency, sleep efficiency, sleep disorders, use of sleeping medications, and daytime sleep dysfunction—is an additional tool for assessing adult sleep quality (Zhong et al., 2015). Pregnant women who experience sleep disturbances or complaints can be treated with pharmacological and non-pharmacological therapy. Yoga is a pharmacological procedure. In order to enhance physical, mental, and spiritual well-being, yoga is a traditional form of exercise that emphasizes strength, flexibility, and breathing. There are numerous varieties of yoga, including as Tibetan, Hatha, and Iyengar yoga (Wang et al., 2020). The quality of sleep can be affected by prenatal yoga, which is one of the non-pharmacological therapeutic options. It is more appropriate to utilize non-pharmacological methods to treat sleep disorders in pregnant women since they have fewer negative effects than pharmacological methods (Golmakani et al., 2015).

To help them decompress, Yoga practitioners use the gross form or the body. A Yogi practitioner learns to "awaken" every part of his body and soul through a series of meticulous physical exercises and complete concentration. The physical workout regimen known as yoga has been scientifically proven to enhance, fortify, and preserve muscular structure. According to physiology, breathing techniques and other yoga poses have a positive impact on the blood circulation, aid in the absorption of nutrients, and remove toxins from various areas of the body. In the meantime, from a psychological standpoint, yoga

improves mental equilibrium, concentration, and a sense of fulfillment (Erika Lebang, 2015).

A sort of yoga that is suited to the conditions or pregnant women is called prenatal yoga, or yoga during pregnancy. The primary goal of prenatal yoga is to get pregnant women ready for childbirth on a physical, mental, and spiritual level. The mother will be more confident and acquire confidence in having a safe and comfortable birth with preparation (Pratignyo, 2014). Prenatal yoga is a kind of traditional yoga that has been modified to fit the physical characteristics of pregnant women. It is performed with less force and more gentleness. When practicing pregnant yoga, precautions and extra care are essential to prevent injury and to ensure comfort and safety (Pujiastuti, 2014).

LITERATURE REVIEW

In Indonesia, prenatal care is governed by Republic of Indonesia Government Regulation Number 103 of 2014, which relates to Traditional Health Services. Prenatal yoga can be implemented in health facilities by integrating it with medical treatments. Another advantage of prenatal yoga is that it improves relaxation, strengthens the body, and develops muscle flexibility. Based on the issues, it is believed that pregnant women would become calmer with prenatal yoga exercises, improving the quality of their sleep and starting to reduce complaints during TM III.

METHODOLOGY

This study employs a one group pre-test research design (Orne Group Pretest- Posttest Design) and a quasi-experimental research design. By involving older groups or individuals, this study employs a cause-and-effect relationship (Nordoratmordjor, 2012). The study was carried out in Nganjuk Regency between March and May of 2023. All of the participants in this study were third-trimester pregnant women who visited the Kater Ban Village Health Center between March and May of 2023. According to Nordoratmordjor (2012), the sample strategy employed in this study was purposive sampling, which was founded on specific considerations made by the researchers themselves, based on previously known traits or features of the population. This study included a sample of thirty pregnant women who were in the third trimester of their pregnancy. This study employs questionnaire analysis and observational data collection methods in the form of Techniques for Bivariate and Univariate Analysis.

RESULTS AND DISCUSSION

1. Univariate Analysis of Average Sleep Quality in Third Trimester Pregnant Women Before Prenatal Yoga

- a. Average Sleep in Thirt Trimester Pregnant Women Before doing Prenatal Yoga

Table 1. Average Sleep for Pregnant Women in the Third Trimester Before Prenatal Yoga

Sleep Quality	N	Mean	SD	Min	Max
Prior to completing Prenatal Yoga	30	9.20	1,476	7	12

According to the table above, on average, the 30 samples' sleep quality before to prenatal yoga was 9.20, with a standard deviation of 1.476. Scores range from 7 on the Lowest PSQI questionnaire to 12 on the highest.

b. Average Sleep Quality in Third Trimester Pregnant Women After Prenatal Yoga

Table 2. Average Sleep in Third Trimester Pregnant Women After Prenatal Yoga

Sleep Quality	N	Mean	SD	Min	Max
After doing Prenatal Yoga	30	5	0.816	4	6

Based on the table above, it can be seen that the average sleep quality of the 30 samples after prenatal yoga were 5 with a standard deviation of 0.816. The lowest PSQI questioner score is 4 and the highest is 6.

2. Bivariate Analysis of the Effect of Prenatal Yoga on Improving Sleep Quality in Third Trimester Pregnant Women

Table 3. Effect of Prenatal Yoga on Improving Sleep Quality in Third Trimester Pregnant Women

Sleep Quality	N	Mean	SD	Z	p value
Before doing Prenatal Yoga	30	9.20	1,476	2,871	0.004
After doing Prenatal Yoga	30	5	0.816		

Based on the table above, it was found that the increase in sleep quality in third trimester pregnant women before prenatal yoga was 9.20 with a standard deviation of 1.476 and after prenatal yoga was 5 with a standard deviation of 0.816 using the Wilcoxon test with $Z = 2.871$ and $p \text{ value} = 0.004$, this means there is an influence Prenatal yoga on improving sleep quality in third trimester primigravida mothers.

3. Univariate Analysis of Average Sleep Quality in Third Trimester Pregnant Women Before Prenatal Yoga

The results of the analysis regarding the average sleep quality of the 30 samples before prenatal yoga were 9.20 with a standard deviation of 1.476. The lowest PSQI questioner score is 7 and the highest score is 12, which means poor sleep quality.

According to Romauli (2011), one of the physical changes in the third trimester is sleep problems which are caused by having a big stomach, the baby

will often kick at night making it difficult to sleep soundly. According to Nugroho (2014), during pregnancy, some women often experience difficulty sleeping, especially during the last 3 months of pregnancy. This condition is actually normal in early pregnancy, because the body is working to protect and maintain the development of the fetus.

In line with the results of research conducted by Harahap, et al (2017) regarding the Effectiveness of Yoga on the Sleep Quality of Pregnant Women, it is known that the mean pretest sleep quality in the experimental group was 8.00 with a minimum score of 5.00 and a maximum score of 13.00 and a standard deviation. 2.26. Likewise, the results of research by Renityas, et al (2017) regarding the effectiveness of Cayuga on complaints of insomnia in pregnant women in the third trimester in traditional agriculture communities in the Ngancar Community Health Center working area, Kediri Regency, show that the average of the 40 people sampled before the intervention was 9.4000. Standard deviation 3.521.

According to research results, complaints of insomnia in pregnant women in the third trimester are due to physiological factors of discomfort in the third trimester, including feeling ugly, strange and unattractive, feeling unpleasant when the baby is not born on time and fear of pain and physical danger that arise during giving birth under normal circumstances.

This is what makes it difficult for mothers to sleep, and to feel comfortable when sleeping, you need to find a position that is comfortable for you. It is important to make mothers feel comfortable in the third trimester so that they don't experience anxiety and can rest and sleep enough time so that they don't experience psychological problems with the fetus and are ready to face childbirth.

4. Analysis of Average Sleep Quality in Third Trimester Pregnant Women After Prenatal Yoga

The results of the analysis regarding the average sleep quality of the 10 samples after prenatal yoga were 5 (sleep quality in the good category) with a standard deviation of 0.816. The lowest PSQI questionnaire score is 4 and the highest score is 6. Yoga is a comprehensive system for using physical postures (asana), breathing exercises (pranayama), concentration and meditation (dharana and dyana) (Tilong, 2014).

According to Pratignyo (2014) the aim of pregnancy yoga or prenatal yoga is to prepare pregnant women physically, mentally and spiritually for the birthing process. With through preparation, pregnant women will be more confident and gain confidence in having a smooth and safe birth.

In line with the results of research conducted by Harahap, et al (2017) regarding the Effectiveness of Yoga on the Sleep Quality of Pregnant Women, it is known that the mean posttest score for sleep quality in the experimental group was 4.47 with a minimum score of 2.00 and a maximum score of 7.00 and the standard deviation 1.41. Meanwhile, the results of research by Mediarti, et al (2014), showed that the average complaint of pregnant women

during measurements after doing antenatal yoga was that the average complaint of pregnant women was 12.19 with a standard deviation of 2.912.

According to the research results, 21 out of 30 samples had improved sleep quality from before prenatal yoga was categorized as not good and after prenatal yoga their sleep quality was categorized as good. Only 7 samples still experienced sleep disorders. It was probably caused by psychology, as one of the samples stated that feelings of anxiety about childbirth were still there. This is possible because the sample age is still teenagers (19 years). Generally, women under 20 years of age are not good at getting pregnant and have a high risk, such as miscarriage or failure to give birth, and even cause death. Women under 20 years of age are physically and mentally not ready to get pregnant.

5. Bivariate Analysis of the Effect of Prenatal Yoga on Improving Sleep Quality in Third Trimester Pregnant Women

From the results of the analysis of the effect of prenatal yoga on improving the quality of sleep-in pregnant women in the third trimester before prenatal yoga, it was 9.20 with a standard deviation of 1.476 and after yoga exercise was 5 with a standard deviation of 0.816 using the Wilcoxon test with $Z = 2.871$ and p value = 0.004. This means that there is an influence of prenatal yoga on improving sleep quality in third trimester primigravida mothers.

According to Pratignyo (2014), the benefits of yoga include increasing energy, vitality and endurance, relieving stress and anxiety, improving sleep quality, eliminating muscle tension, reducing general physical complaints during pregnancy, such as back pain, hip pain and swollen parts. the body and helps the healing and recovery process after giving birth. In principle, yoga is safe for all pregnant women and can be done by all pregnant women starting at a minimum gestational age of 23 weeks, with no history of complications during pregnancy, no history of preterm birth, and LBW (Aulia, 2014).

In line with the results of research conducted by Harahap, et al (2017) regarding the Effectiveness of Yoga on the Sleep Quality of Pregnant Women, it is known that the mean sleep quality pre-test when giving yoga was 8.00 with a standard deviation of 2.26 and the mean sleep quality after giving yoga was 4.47 with a standard deviation of 1.42. with p value = 0.00, which means there is a significant difference between the pretest and posttest sleep quality of yoga. Likewise, the results of research by Renityas, et al (2017) regarding the Effectiveness of Acuyoga on Insomnia Complaints in Pregnant Women in the Third Trimester in Traditional Agriculture Communities in the Working Area of the Ngancar Health Center, Kediri Regency, show that the average of 40 people in the sample after the intervention saw an increase in the average compared to before the intervention, namely 6,125 points and SD 2,747 with Paired sample T-Test < 0.001 , which means there is a significant difference in respondents insomnia before and after the intervention.

Prenatal yoga is very important for pregnant worms because it can help with complaints during pregnancy and prepare for childbirth. According to the results of the research, there was a difference in the average sleep quality of third trimester pregnant worms before and after they were given prenatal yoga

intervention. Third trimester pregnant women who received prenatal yoga intervention had good sleep quality. Prenatal yoga is a type of physical activity that involves forcing the mind and breathing. According to the findings of this study, pregnant women's complaints can be resolved and decreased following prenatal yoga, which would improve their sleep quality throughout the third trimester.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions can be drawn from the research and discussion on the efficacy of prenatal yoga in enhancing the quality of sleep for pregnant women in the third trimester: prior to the implementation of prenatal yoga, the sample's average sleep quality was 9.20, with a standard deviation of 1.476. The average sleep quality following prenatal yoga was 5, with a standard deviation of 0.816. 4. Prenatal yoga has been shown to be successful in enhancing the quality of sleep for pregnant women in the third trimester.

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FURTHER RESEARCH

This research still has limitations so further research on this topic is still needed "Effectiveness of Prenatal Yoga on Quality Improvement Pregnant Women's Sleep in the Third Trimester".

REFERENCES

- Ari. 2013. *Midwifery Care During Pregnancy*. Jakarta: Salemba Medika.
- Aulia. 2014. *Healthy Pregnancy with Various Sports for Pregnant Women*. Yogyakarta: Blue Book.
- Harahap, Sri Delima., Utami, Sri., Huda, Nurul . 2017. Effectiveness of Yoga on the Sleep Quality of Pregnant Women. Riau University, Accessed from: <https://jom.unri.ac.id>, on January 12 2020.
- Hudiyawati, 2020. Yoga as an intervention for sleep disorders in hypertension patients. muhammadiyah Surakarta university.
- Indonesian Ministry of Health, 2012. *Technical Guide to Physical Exercise During Pregnancy and Postpartum*: Jakarta, Ministry of Health.
- Jannah, Nurul. 2012. *Textbook of Midwifery Care: Pregnancy*. Yogyakarta: Andi.
- Kartika, Goddess. 2012. *Warning for Pregnant Women to Recognize Diseases and Disorders that Commonly Occur in Pregnant Women*. Surakarta.
- Khumaira, Marsha. 2012. *Midwifery Science*. Yogyakarta: Citra Pustaka.

- Mediarti, Devi., Sulaiman, Rosnani, Jawiah. 2014. The Effect of Antenatal Yoga on Reducing Complaints from Pregnant Women in the Third Trimester. *Journal of Medicine and Health*, 47-53.
- Mubarak & Chayatin. 2008. *Textbook of Basic Human Needs*. Jakarta
- Naviri, 2011. *Smart Book for Pregnant Women*. Jakarta
- Notoatmodjo, Soekidjo. 2012. *Health Research Methodology*. Jakarta: Rineka Cipta.
- Nugroho, Typhoon. 2014. *Textbook of Midwifery Care 1 (Pregnancy)*. Yogyakarta: Nuha Medika.
- Nurdiansyah, 2011. *Smart Mother & Baby Book*. Jakarta
- Onggo, Ira Tri. 2009. *Yoga for Pregnant Women*. Yogyakarta: Golden Books.
- Pomegranate. 2020. *The Effectiveness of Prenatal Yoga on the Sleep Quality of Pregnant Women*. Nursing Science Study Program
- Pratigny, Tia. 2014. *Yoga for Pregnant Women*. Jakarta: Mother's Library.
- Rafika. 2020. *Effectiveness of Prenatal Yoga in Reducing Physical Complaints in Third Trimester Pregnant Women*. Indonesia: Department of Midwifery, Health Polytechnic Ministry of Health Palu
- Renityas, Nevy Norma., Sari, Levi Tina., Wibisono, Wahyu. 2017. Effectiveness of Acuyoga on Complaints of Insomnia in Pregnant Women in the Third Trimester in Traditional Agriculture Communities in the Working Area of Ngancar Health Center, Kediri Regency. *Journal of Nursing and Midwifery*, Volume 4, Number 2, August 2017, 98-103.
- Rusmita, Eli. 2015. *The Effect of Pregnancy Yoga Exercises on Pregnant Women's Readiness to Face Childbirth at RSIA Limijati Bandung Bandung: Indonesian Air Force Ciumbuleuit Health Polytechnic*
- Saifuddin, Abdul Bari. 2009. *National Reference Book for Maternal and Neonatal Health Services*. Jakarta: PT Bina Pustaka Sarwono Prawirohardjo. Sulistyawati,
- Sani, Rachman. 2012. *Yoga for Health*. Semarang: Effhar Offset, Semarang.
- Tilarso, Haryo. 2011. *The Power Of Yoga For Pregnancy and Post-pregnancy*. Jakarta: IKAPI
- Tilong, Adi D. 2014. *Get Pregnant Quickly With Yoga and Meditation*. Yogyakarta: Our Books.
- Vasra, Elita. 2016. *Basic Human Needs and Basic Midwifery Skills*. Jakarta Member of IKAPI
- Widya, Seta. 2015. *Basic Guide to Yoga*. Jakarta: Kawan Pustaka
- Wulandari, 2010. *The Effect of Prenatal Yoga on Anxiety Levels in Primigravid Mothers in the Second and Third Trimesters at the Qita Yoga Studio, South Semarang District, Indonesia*. Stikes Widya Husada Semarang Nursing Science Study Program.