

Original Research Paper

## Can the Prenatal Gentle Yoga and Dhikr Combination Improve the Pregnant Women's Sleep Quality?

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### Abstract

Poor sleep quality is a common complaint among pregnant women, yet it is often underestimated as a factor that may contribute to the morbidity of both the mother and the fetus. Non-pharmacological interventions to improve sleep quality in pregnant women could serve as a therapeutic option with minimal side effects. Unfortunately, research on non-pharmacological interventions combining prenatal gentle yoga with dhikr is still rare. This study aims to investigate the effect of the prenatal gentle yoga and dhikr combination on the pregnant women's sleep quality. This is a quasi-experimental study with pre-and post-design. The study was conducted at the Bajeng Health Center, Gowa Regency, from April to May 2022. The sample was selected using purposive sampling, resulting in 15 samples. Pregnant women were given the prenatal gentle yoga and dhikr combination intervention three times within one month, with a duration of 10-15 minutes per session. Sleep quality was measured before and after the intervention using the Pittsburgh Sleep Quality Index (PSQI). Univariate analysis and bivariate analysis were conducted using descriptive analysis and the Wilcoxon test, respectively. The results showed that there was an effect of the prenatal gentle yoga and dhikr combination on the pregnant women's sleep quality (p-value 0.00). This intervention was effective in improving the pregnant women's sleep quality. The findings of this study highlight the need for healthcare providers to recommend this minimal side-effect intervention as a complementary therapy. Further research with a bigger sample size is needed to explore the broader benefits of this combined intervention.

**Keywords:** dhikr; prenatal gentle yoga; pregnant women; sleep quality

### 1. Introduction

Adequate sleep is crucial for a healthy pregnancy and also for recharging the energy of the body for the birthing process (Silvestri & Aricò, 2019; Venugopal et al., 2018). Various physiological, psychological, hormonal, and physical changes that arise during pregnancy may lead to changes in the pregnant women's quantity and quality of sleep. An inconsistent sleep-wake rhythm during pregnancy is a sign of sleep disorders in pregnancy (Bazalakova, 2017; Miller et al., 2020; Okun et al., 2015; Yang et al., 2018). Insomnia is a common sleep disorder experienced by pregnant women (Reichner, 2015). Román-Gálvez et al. (2018) found that in the second and third trimesters of pregnancy, the chance of experiencing insomnia rose 4.21 and 4.43 times, respectively.

Pregnant women's sleep disturbance might result in poor sleep quality (Peiris & Sundarapperuma, 2024). The pregnant women's sleep quality decreases as the pregnancy progresses (Effati-Daryani et al., 2019). Throughout the pregnancy period, the total sleep duration fluctuates: a rise in sleep time during the first trimester, followed by regular sleep duration in the second trimester, and shorter sleep time during the third trimester (Lu et al., 2021; Sweet et al., 2020; Yang et al., 2018). Several studies

show a relatively high prevalence of pregnant women's poor sleep quality, ranging from 28.2% to 59.1% (Khadka et al., 2020; Sedov et al., 2021; Tasisa et al., 2022).

Poor sleep quality is common during pregnancy, and it is often underestimated as a factor that may contribute to the morbidity of both the mother and the foetus (Sedov et al., 2021). Empirical evidence shows that poor sleep quality during pregnancy may increase the likelihood of developing postpartum depression (Tomfohr et al., 2015; Wu et al., 2014), preeclampsia (Xu et al., 2014), gestational diabetes mellitus (Cai et al., 2017; Reutrakul et al., 2018; Xu et al., 2014), preterm labour (Sutcliffe et al., 2023; Warland et al., 2018; Xu et al., 2014), caesarean section (Xu et al., 2014), low birth weight (Sharma et al., 2016; Warland et al., 2018), and stillbirth (Warland et al., 2018).

Benzodiazepines and benzodiazepine receptor agonists are common pharmacological interventions given to pregnant women with sleep disorders (Chaudhry & Susser, 2018). Although these medications do not cause congenital malformations, they can potentially cause premature labor and deliver low birth weight babies (Okun et al., 2015). Non-pharmacological interventions to improve the pregnant women's sleep quality can be a therapeutic option with minimal side effects. One non-pharmacological intervention that pregnant women with cases of sleep disorders can perform is physical exercise. One type of physical exercise that can be done by pregnant women is prenatal gentle yoga (ACOG, 2020). Prenatal gentle yoga that women do during their pregnancy, helps them prepare for labor: improving breathing skills which are crucial during labor; preparing themselves to tolerate pain, and transforming stress and anxiety into energy (Boopalan et al., 2023; Chang et al., 2022). Based on initial data obtained from the Bajeng Health Center, over 35% of pregnant women complained of sleep disorders and were unaware of how to address them. More than 90% of pregnant women also did not know what prenatal gentle yoga is.

There have been many studies results showing the prenatal gentle yoga's effects on the pregnant women's sleep quality (Aflahiyah et al., 2020; Ismiyati & Faruq, 2020; Rhomadona & Primihastuti, 2021). Several studies on the effects of dhikr therapy on sleep quality have also been conducted (Shidiq & Soleman, 2023; Sujono & Sari, 2020). However, it is still rare to find studies combining prenatal gentle yoga with dhikr. The development of interventions that combine both of these methods needs to be carried out to maximize the effectiveness of this intervention in improving the pregnant women's sleep quality. This study aims to investigate the effect of the prenatal gentle yoga and dhikr combination on the pregnant women's sleep quality at the Bajeng Health Center, Gowa Regency, Indonesia.

## 2. Research Methods

This study is a quasi-experimental research with a pre- and post-test design. The study was conducted at the Bajeng Health Center, Gowa Regency, from April to May 2022. The population in this study consisted of all pregnant women at the Bajeng Health Center, Gowa Regency, totaling 35 pregnant women. The sample in this study was selected using a purposive sampling technique with inclusion criteria: pregnant women with a gestational age of over 20 weeks, and who were willing to participate in the study. Meanwhile, the exclusion criteria were pregnant women with complications (such as hypertension during pregnancy, placenta previa, a history of bleeding and miscarriage in previous pregnancies) and those who refused to take part in the study. There were fifteen pregnant women in the study's sample.

Before the intervention, the sleep quality of respondents was assessed using the Pittsburgh Sleep Quality Index (PSQI). This instrument is a standardized tool for measuring quality of sleep that has been tested for validity and reliability. Setyowati and Chung (2021) reported Cronbach's alpha and item-total correlation values for the PSQI instrument of 0.72 and 0.36-0.56, respectively. These results explain that the PSQI instrument is valid and reliable. The combination of prenatal gentle yoga and dhikr intervention was provided to the respondents three times in one month, with each session lasting

10-15 minutes. Subsequently, the respondents' sleep quality was measured again using the PSQI to assess changes in their sleep quality. Univariate analysis was performed using descriptive analysis through frequency distribution, mean, median, and standard deviation (SD). Meanwhile, bivariate analysis was conducted using the Wilcoxon statistical test. This study has received ethical approval from the Research Ethics Committee of the Faculty of Medicine and Health Sciences, Alauddin State Islamic University Makassar, with approval number No. C.74 / KEPK / FKIK / II / 2022.

### 3. Results and Discussion

#### 3.1. Results

Based on the respondent characteristics data presented in Table 1, it was clearly found that the age range of the pregnant women is quite wide, spanning from young adulthood to late adulthood, with the oldest being forty-eight years old and the youngest being twenty. The majority of the pregnant women were multiparous (77.3%), and according to the gestational age, most of the respondents were in their third trimester (60%).

**Table 1.** Respondent Characteristics

Variable	Category	n (%)	Median (min-max)
Age			28 (20-48)
Education	High	11 (73.3)	
	Low	4 (26.7)	
Parity	Primipara	5 (33.3)	
	Multipara	10 (66.7)	
Trimester	Second	6 (40.0)	
	Third	9 (60.0)	

Source: Primary Data, 2023

**Table 2.** Pregnant Women's Sleep Quality Before and After Intervention of Prenatal Gentle Yoga and Dhikr Combination

Variable	Median (min-max)	Mean	P-value
Sleep Quality of Pregnant Women Pre-intervention	10 (6-21)	11.2	
Sleep Quality of Pregnant Women Post-intervention	8 (2-18)	7.67	0.00

Source: Primary data, 2023

Table 2 shows the effect of the combined intervention of prenatal gentle yoga and dhikr on the pregnant women's sleep quality. A higher PSQI score indicates worse sleep quality, while a lower PSQI score indicates better sleep quality. We found that a decrease in the average sleep quality score from 11.2 to 7.67 indicated an improvement in sleep quality. This study demonstrates a significant effect of the of prenatal gentle yoga and dhikr combination on the pregnant women's sleep quality in the working area of the Bajeng Health Center, Gowa, Indonesia (p-value 0.00).

#### 3.2. Discussion

This research explains that almost all respondents had poor sleep quality. The prior studies have demonstrated the relationship between gestational age and the pregnant women's sleep quality (Effati-Daryani et al., 2019; Peiris & Sundarapperuma, 2024; Salari et al., 2021; Vézina-Im et al., 2017). Pregnant women's sleep quality declines with increasing gestational age (Effati-Daryani et al., 2019). Based on gestational age, the majority of respondents in this study were pregnant women in their third

trimester (60%). In pregnant women during the third trimester, the risk of having poor sleep quality increases by 3.45 to 7.5 times (Jemere et al., 2021; Takelle et al., 2022; Tasisa et al., 2022).

During the third trimester, pregnant women encounter a decline in efficiency of sleep, overall sleep quality, and subjective sleep quality, as well as more sleep disturbances (Polo-Kantola et al., 2017; Yang et al., 2018). Physiological and psychological changes during pregnancy may contribute to these findings. Some physiological changes, such as fetal growth and movement pressing on the bladder, lead to an increased frequency of urination; back pain and discomfort from sleeping positions due to the enlarging belly; and frequent leg cramps, also contribute to pregnant women's sleep disturbances (Hashmi et al., 2016; Marwiyah & Sufi, 2018). Chen et al. (2023) reported that pregnant women in the third trimester who feel anxious or fearful about labor are 2.24 and 1.63 times more likely to experience insomnia, respectively.

In addition to gestational age, maternal age and status of parity also affect the pregnant women's sleep quality. According to studies in China (Yang et al., 2018) and Ethiopia (Jemere et al., 2021), the pregnant women's sleep quality declines as maternal age increases. Jemere et al. (2021) found that pregnant women aged 20-30 years and those > 30 years old were 4.3 and 4.7 times more at risk of having poor sleep quality, respectively. Regarding parity status, 66.7% of the respondents in this study were multiparous. Compared to nulliparous women, multiparous women are 2.1-fold more likely to experience poor-quality sleep. One possible reason for this is that multiparous women tend to have young children at home. The responsibility of childcare and children's sleep routines, including waking up at night, tends to affect their sleep duration and quality.

We found a significant effect of the prenatal gentle yoga and dhikr combination on pregnant women's sleep quality (p-value 0.00). Prenatal gentle yoga and dhikr can improve the pregnant women's sleep quality. The improvement in sleep quality can be seen from the decrease in the average PSQI score from 11.2 to 7.76 (a difference of 3.53 in the average PSQI score). The combination of prenatal gentle yoga and dhikr therapy is considered more effective in improving the pregnant women's sleep quality compared to just gentle yoga prenatal therapy. This is demonstrated by the fact that the average PSQI score before and after the intervention in this study differed more than the findings of other studies. Previous studies conducted by Resmaniasih & Herlinadyaningsih (2021) and Sumarni et al. (2023) on the effect of prenatal gentle yoga on the pregnant women's sleep quality in the third trimester showed differences in the average PSQI score before and after the intervention of 1.13 and 2.77, respectively.

Prenatal gentle yoga can help prepare women physically and mentally during pregnancy and childbirth by providing a sense of comfort and minimizing common discomforts that pregnant women often complain about and experience (Aprilia, 2020). The increase in comfort, calm, and peace after practicing yoga can improve the pregnant women's sleep quality. Meanwhile, dhikr can help individuals develop the belief that every stressor or feeling of anxiety about something can be faced well. When someone remembers God and surrenders to Him through dhikr, the central nervous system and endocrine glands will function and produce hormones in a balanced way. This hormonal balance will bring about good, focused, and controlled behavior. Dhikr can provide peace of mind and heal various ailments. One of the benefits of dhikr is achieving inner peace, so those who engage in dhikr can calm their hearts. The dhikr therapy is done in a meditative state, accompanied by breathing exercises at the end of the yoga movements. The meditative state can induce alpha waves in the brain, which makes a person feel calmer (Aisyatin Kamila, 2022; Sufirmansyah, 2021).

Reciting dhikr sentences and pronouncing other auto-suggestion phrases stimulate the hypothalamus, which inhibits the adrenal glands from releasing cortisol, adrenaline, and noradrenaline, as well as inhibiting the action of thyroxine hormones that cause fatigue, anxiety, tension, and difficulty sleeping. In addition, performing dhikr therapy in a meditative state can affect and activate the

autonomic nervous system by inhibiting sympathetic nerve activity and elevating parasympathetic nerve activity, which can lower blood pressure, heart rate, muscle tension, and blood glucose levels, leading to relaxation (Anjastya & Yuniartika, 2022; Setyaningsih et al., 2020). When the body relaxes, sleep quality is expected to improve.

#### 4. Conclusion

The study found a significant effect of the prenatal gentle yoga and dhikr combination on the improvement of pregnant women's sleep quality (p-value 0.00). The prenatal gentle yoga and dhikr combination is an effective intervention to improve the pregnant women's sleep quality. In addition to improving sleep quality, this intervention is also expected to help prepare the mental and physical health of pregnant women during pregnancy and in facing childbirth. The results of this study emphasize the need for healthcare providers to recommend this low-side-effect intervention as a complementary therapy alongside conventional treatments. Further studies using a bigger sample size is needed to assess the broader benefits of this combined intervention.

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