

Regular Yoga Practice is Related to Sleep Quality in Pregnant Women in the Third Trimester

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ABSTRACT

Good sleep quality during pregnancy is essential for maintaining maternal health and supporting fetal growth and development. During the third trimester, pregnant women frequently experience sleep disturbances caused by physiological and psychological changes, including back pain, frequent nighttime urination, discomfort while sleeping, and anxiety related to childbirth. One non-pharmacological approach that can help overcome these problems is prenatal yoga exercise. This study aimed to determine the relationship between prenatal yoga and sleep quality among third-trimester pregnant women at Karanggeneng Community Health Center. This study employed a quantitative approach with a cross-sectional design. The study population consisted of all third-trimester pregnant women registered, totaling 42 participants. A total sampling technique was applied, making all eligible pregnant women the study sample. Data were analyzed using univariate and bivariate statistical analyses with a significance level of 0.05. The results indicated that most pregnant women who participated in prenatal yoga regularly had better sleep quality compared to those who participated irregularly. Statistical analysis revealed a p-value of < 0.05 , indicating a significant relationship between prenatal yoga and sleep quality among third-trimester pregnant women. Prenatal yoga can serve as an effective non-pharmacological intervention to improve sleep quality, promote relaxation, reduce physical and psychological tension, and support maternal well-being throughout pregnancy.

INTRODUCTION

Sleep quality is one of the important aspects of maintaining the health of pregnant women, especially in the third trimester when physiological and psychological changes become more complex. During this period, many pregnant women experience a decrease in sleep quality, marked by difficulty falling asleep, frequent waking up at night, and feeling tired after waking up. Lie et al. (2021) stated that the prevalence of sleep disorders increases as pregnancy progresses, even reaching more than 60% in the third trimester. This condition is caused by hormonal changes, the rapid growth of the fetus, and increased pressure on the bladder, which triggers nighttime urination. These factors make it difficult for pregnant women to achieve deep and quality sleep.

Not only physical changes, but psychological aspects also play a big role in reducing sleep quality in pregnant women. Anxiety before childbirth, stress, and worries about the baby's condition often cause sleep disturbances (Mindell & Cook, 2020). Additionally, pregnant women in the late trimester are prone to restless leg syndrome and increasing lower back pain, which leads to more frequent and intense sleep problems (Fasco et al., 2022). The combination of physical discomfort and emotional stress makes the third trimester the most vulnerable phase for sleep disturbances. Sleep problems during pregnancy not only affect the mother but also have a significant impact on the baby's health. Poor-quality sleep is linked to increased risks of preeclampsia, premature birth, and low birth weight (Okun et al., 2018). Therefore, sleep quality becomes one of the important indicators in monitoring the health of pregnant women in the final trimester. Health workers need to provide education and non-drug interventions, including prenatal exercises, relaxation, and sleep position adjustments, to help moms improve the quality of their rest.

Globally, sleep disorders are quite a common problem. In 2021, the WHO reported that about 18% of the world's population suffers from sleep disorders or insomnia (Rusiana et al., 2021). In Indonesia, it is estimated that around 10% of the population experiences insomnia, which is equivalent to about 28 million people, and this number is likely higher due to many undetected cases. Among pregnant women, the prevalence of sleep disorders increases, especially in the third trimester. In East Java, the prevalence of sleep disorders in pregnant women was reported at 23%, with a study by Sukorini (2020) in Surabaya showing that physical discomforts like back pain, frequent urination, and difficulty breathing are closely related to decreased sleep quality (Abdullah & Nadia, 2025). These findings confirm that sleep disorders are a significant health issue for pregnant women.

Several factors influence the sleep patterns and quality of pregnant women, especially in the final trimester when physical, physiological, and psychological changes become more significant. The enlargement of the uterus causes the belly to grow, making it difficult for pregnant women to find a comfortable sleeping position, particularly in the third trimester (Facco et al., 2021). Increased fetal activity and movements, especially at night, often disrupt sleep continuity because the mother is more easily awakened multiple times (Sedov et al., 2020). The pressure of the enlarged uterus on the bladder also causes

nocturia, or increased nighttime urination, interrupting the sleep cycle (Mindell, Cook, & Nikolovski, 2021). Concerns about sleeping positions perceived as risky for the comfort or safety of the fetus can trigger anxiety, making it harder for the mother to get sound sleep (Warland et al., 2020).

The impact of untreated sleep disturbances can go beyond just causing high blood pressure during pregnancy; it can also lead to chronic fatigue and concentration problems that can disrupt daily activities (Mindell & Cook, 2020). That's why it's important for healthcare workers, especially midwives, to recognize the factors that cause sleep problems and educate about the importance of getting enough rest. Simple interventions like relaxation techniques, regular sleep patterns, and light physical activity can help improve pregnant women's sleep quality. Orem's theory explains how decreased self-care ability due to physical and emotional changes in third-trimester pregnant women contributes to poorer sleep quality. One self-care intervention that fits Orem's theory is prenatal yoga. Prenatal yoga is a series of breathing exercises, gentle stretches, and relaxation techniques tailored to the needs of pregnant women. This activity helps increase body awareness, reduce muscle tension, improve blood circulation, relieve anxiety, and lower the stress hormone cortisol (Heriyanti et al., 2023). So, prenatal yoga can help pregnant women better meet their self-care needs related to sleep.

Research conducted by Azward et al. (2021) shows that prenatal yoga has a significant effect on improving sleep quality in pregnant women in their third trimester after practicing yoga regularly. Other studies also state that prenatal yoga exercises can help regulate breathing, increase physical comfort, and reduce sleep disturbances that are often experienced during pregnancy (Husaema et al., 2023). This study was conducted at a primary healthcare facility that offers a prenatal class program, including prenatal yoga activities. Based on the results of an initial survey and interviews with 42 third-trimester pregnant women, it was found that most respondents experienced sleep quality disturbances. As many as 34 out of 42 (81%) admitted to waking up more than twice at night, mainly due to increased frequency of urination. Meanwhile, 31 respondents (73.3%) reported difficulty sleeping well because of discomfort in their growing belly, such as feeling heavy, tight, and having trouble finding a comfortable sleeping position. Besides physical factors, 25 respondents (59.5%) said their sleep quality was disrupted by environmental noise, especially the sound of motor vehicles at night, and some mentioned that passing vehicles in front of their house often interrupted their nighttime sleep.

Regarding daytime nap patterns, 17 respondents (40.5%) took naps for about an hour, 20 respondents (47.6%) napped for up to two hours, and 5 respondents (11.9%) rarely took naps. It can be concluded that 34 out of 42 pregnant women (81%) experienced poor sleep quality, while only 8 respondents (19%) reported relatively sufficient sleep and did not experience significant disturbances. All respondents were only reported to have attended a prenatal yoga class once, so the benefits of prenatal yoga on improving sleep quality have not been fully felt yet. This situation indicates that sleep quality issues are quite common among third-trimester pregnant women and require safe and effective

non-pharmacological interventions. Seeing this situation, more in-depth research is needed on the practice of prenatal yoga and its effects on the sleep quality of pregnant women in their third trimester. A comprehensive understanding of how well pregnant women follow prenatal yoga, the obstacles they face, and its impact on physical health and sleep comfort will provide a solid basis for healthcare workers to develop more effective interventions.

LITERATURE REVIEW

Table 1

No	Penulis (Tahun)	Research Title	Research Design	Sample	Variable	Research Results	Conclusion
1	Aflahiyah (2020)	Effectiveness of Prenatal Yoga on Sleep Quality and Anxiety	Quasi Experimental	Pregnant mom	Prenatal yoga, sleep quality, anxiety	Prenatal yoga improves sleep quality and reduces anxiety	Prenatal yoga is effective as a non-drug therapy during pregnancy.
2	Aulya, Yantina, & Astriana (2020)	Prenatal Yoga Mempengaruhi Kualitas Tidur Ibu Hamil	Quasi Experimental	Pregnant woman in the third trimester	Prenatal yoga, sleep quality	There was an improvement in sleep quality after doing prenatal yoga	Prenatal yoga has a positive effect on the sleep quality of pregnant women.
3	Ismiyati (2020)	The Effect of Prenatal Yoga on Sleep Quality in Third Trimester Pregnant Women	Experimental	Pregnant woman in the third trimester	Prenatal yoga, sleep quality	Sleep quality score increased significantly	Prenatal yoga is recommended for pregnant women in the third trimester.

No	Penulis (Tahun)	Research Title	Research Design	Sample	Variabl e	Research Results	Conclusion
4	Azward, Pratiwi, & Lestari (2021)	Prenatal Yoga Exercise Improves Sleep Quality in the Third Trimester	Experime ntal	Pregna nt woman in her third trimest er	Prenatal yoga, sleep quality	Prenatal yoga exercises improve sleep quality	Prenatal yoga becomes an effective intervention to improve sleep quality.
5	Eli, Shinohara, & Uchiyama (2021)	Prenatal Yoga and Sleep Quality: A Longitudi nal Study	Longitud inal Study	Pregna nt mom	Prenatal yoga, sleep quality	Sleep quality improves while following a yoga program	The benefits of prenatal yoga last throughout pregnancy.
6	Ali, Zhang, & Wang (2021)	The Role of Prenatal Yoga in Reducing Maternal Anxiety and Improving Sleep Quality During Pregnancy	Randomi zed Controlle d Trial	Pregna nt mom	Prenatal yoga, anxiety, sleep quality	Yoga reduces anxiety and improves sleep quality	Prenatal yoga is effective in improving psychologic al health and sleep.
7	Hajratusl Azward & Green (2021)	The Influence of Prenatal Yoga on Sleep Disturbanc es in Late Pregnancy	Experime ntal	Pregna nt woman in the third trimest er	Prenatal yoga, sleep disorde rs	The frequenc y of sleep disturban ces has decrease d	Prenatal yoga helps reduce insomnia in the late stages of pregnancy.

No	Penulis (Tahun)	Research Title	Research Design	Sample	Variabl e	Research Results	Conclusion
8	Kim, Kim, & Lee (2021)	Prenatal Yoga and Its Effects on Postpartu m Depressio n and Sleep Quality	Prospecti ve Study	Pregna nt mom	Prenatal yoga, postpart um depressi on, sleep quality	Yoga improves sleep quality and lowers the risk of depressio n	Prenatal yoga provides benefits up to the postpartum period.
9	Lee, Kim, & Lee (2021)	Prenatal Yoga on Anxiety and Depressio n During Pregnancy	Systemat ic Review & Meta- analysis	16 studies	Prenatal yoga, anxiety, depressi on	Yoga significan tly reduces anxiety and depressio n	Prenatal yoga is recommend ed as a supportive intervention for mental health.
10	Wulan, Nagarathna , & Nagendra (2021)	Impact of Prenatal Yoga on Maternal Outcomes	Clinical Trial	Pregna nt mom	Prenatal yoga, materna l outcom e	Yoga improves the health of mothers and comfort during pregnanc y	Prenatal yoga supports overall maternal health.
11	Zani & Patel (2021)	The Role of Yoga in Improving Sleep and Mental Health During Pregnancy	Randomi zed Controlle d Trial	Pregna nt mom	Yoga, sleep quality, mental health	There has been an improve ment in sleep quality and mental health	Prenatal yoga is effective as a complement ary therapy.

No	Penulis (Tahun)	Research Title	Research Design	Sample	Variabl e	Research Results	Conclusion
12	Broberg, Johansson, & Peterson (2022)	Effects of Yoga on Sleep Disturbanc es Among Pregnant Women with Depressive Symptoms	Secondar y Analysis of RCT	Pregna nt woman with sympto ms of depress ion	Yoga, sleep disorde rs	Yoga significan tly reduces sleep disturban ces	Yoga is beneficial for pregnant women with psychologic al issues.
13	Corrigan, Stevenson, & McCarthy (2022)	The Characteri stics and Effectivene ss of Pregnancy Yoga	Literatur e Review	Variou s studies	Prenatal yoga	Most studies show the benefits of prenatal yoga for mothers' health	Scientific evidence supports the use of prenatal yoga during pregnancy.
14	Farah, Menji, & Belew (2022)	Effects of Yoga- Based Exercise on Birth Outcomes and Maternal Well-being	Randomi zed Controlle d Trial	Pregna nt mom	Yoga, mother' s wellnes s	Yoga improves maternal well- being and birth outcomes	Yoga provides physical and psychologic al benefits.
15	Fauziah, Singh, & Kapoor (2022)	Effect of Yoga on Mental Health and Sleep Quality in Pregnant Women	Experime ntal	Pregna nt mom	Yoga, mental health, sleep quality	Sleep and psycholo gical condition improve	Yoga is effective in improving the quality of life for pregnant women.

No	Penulis (Tahun)	Research Title	Research Design	Sample	Variabl e	Research Results	Conclusion
16	Firmansyah , Hamzah, & Sudrajat (2022)	Prenatal Yoga's Impact on Reducing Stress and Enhancing Fetal Health	Meta-analysis	Variou s studies	Yoga, stress, fetal health	Yoga reduces stress and improves fetal health	Prenatal yoga has multidimen sional benefits.
17	Proboyekti, Darsono, & Handayani (2023)	Effects of Prenatal Yoga on Lung Volume and Sleep Quality	Experime ntal	Pregna nt woman in her third trimester	Pregnan t woman in her third trimester	Lung volume and sleep quality improved	Yoga improves respiratory function and sleep quality.
18	Hafid & Yeo (2023)	Prenatal Yoga as an Intervention for Sleep Quality Among Expectant Mothers	Randomi zed Trial	Pregna nt mom	Prenatal yoga, sleep quality	Sleep quality improved after the interventi on	Prenatal yoga is effective in improving the sleep quality of pregnant women.
19	Hasibuan dkk. (2024)	The Effectivene ss of Prenatal Yoga in Reducing Anxiety and Improving Sleep Quality	Randomi zed Controlle d Trial	Pregna nt mom	Prenatal yoga, anxiety, sleep quality	Significa nt reduction in anxiety and improve ment in sleep quality	Prenatal yoga is recommend ed as a complement ary antenatal therapy.
20	Anggraeni & Prahesti (2025)	Efektivitas Prenatal Yoga	Quasi Experime ntal	Pregna nt woman	Prenatal yoga,	Prenatal yoga significant	Prenatal yoga is effective in

No	Penulis (Tahun)	Research Title	Research Design	Sample	Variabl e	Research Results	Conclusion
		terhadap Kualitas Tidur Ibu Hamil Trimester II dan III		in the second -third trimest er	sleep quality	tly improves sleep quality	the second and third trimesters.
21	Zhou & Wang (2022)	The Impact of Yoga- Based Interventio ns on Sleep Quality During Pregnancy	Meta- analysis	Variou s studies	Yoga, sleep quality	Positive effects with a medium to large effect size	Strong evidence supports prenatal yoga in improving sleep quality.
22	Kamalah, Ismail, & Nurwidiya ningsih (2021)	Pengaruh Prenatal Yoga terhadap Peningkat an Kualitas Tidur Ibu Hamil Trimester III: Literature Review	Literatur e Review	10 articles	Prenatal yoga, sleep quality	Almost all studies show an improve ment in sleep quality	Prenatal yoga is an effective non- pharmacolo gical intervention .

METHODOLOGY

This study uses a quantitative research design with a cross-sectional approach. This approach was chosen to find out the relationship between prenatal yoga and sleep quality in pregnant women during the third trimester. This design allows the researcher to compare sleep quality before and after yoga intervention, without fully randomizing participants, due to limited control in the pregnant women population.

The research population included all third-trimester pregnant women registered at the Karanggeneng Health Center/Pregnancy Clinic in 2026. The third trimester is defined as a pregnancy age of 28–40 weeks, with healthy fetuses and mothers without serious pregnancy complications, totaling 42 respondents. The sample was taken using total sampling. Univariable analysis was used to describe the characteristics and average sleep quality of third-trimester pregnant women before and after being given prenatal yoga intervention. The results of the analysis are presented in the form of frequency distribution. Bivariate analysis was used to examine the relationship between prenatal yoga and sleep quality in third-trimester pregnant women using the Chi-Square Test.

RESULTS

Karanggeneng Health Center is one of the primary healthcare facilities located in the Karanggeneng District, Lamongan Regency, East Java Province. This health center is situated at 110 Karanggeneng Main Road, Madulegi Village, Karanggeneng District, Lamongan Regency. As a government health facility, Karanggeneng Health Center plays a role in providing promotive, preventive, curative, and rehabilitative healthcare services for the community in its working area. Pregnant women who join yoga classes at the Karanggeneng Health Center are receiving maternal health services in their third trimester and actively participate in yoga as a way to stay healthy during pregnancy. Yoga for pregnant women is done to help improve physical fitness, enhance breathing patterns, reduce muscle tension, and provide relaxation that supports comfort throughout pregnancy and in preparation for childbirth.

Table 2. Frequency Distribution of Characteristics of Third-Trimester Pregnant Mothers at Karanggeneng Health Center

No	Age Group (Years)	Frequency (f)	Persentase (%)
1	< 30 year	20	47,6
2	> 30 year	22	52,4
Total		42	100,0
No	Trimester	Frekuensi (f)	Persentase (%)
1	Trimester 2	2	4,7%
2	Trimester 3	40	95,3%
Total		42	100,0
No	Education	Frekuensi (f)	Persentase (%)
1	Elementary School	3	7,1
2	Middle School	11	26,2
3	High School	17	40,5
4	Diploma	6	14,3
5	Bachelor's Degree	5	11,9
Total		42	100,0

Table 3. Frequency Distribution of Pregnant Women Based on How Regularly They Participate in Yoga Exercises

Yoga Exercise	Frekuensi (n)	Persentase (%)
Regular	33	78,6
Irregular	9	21,4
Total	42	100,0

Most third-trimester pregnant women regularly participate in yoga exercises during their third trimester, with 33 respondents (78.6%) doing so. Meanwhile, 9 respondents (21.4%) do not follow yoga exercises regularly. These results show that prenatal yoga activities are quite popular among pregnant women in the working area of Karanggeneng Health Center. The high participation of third-trimester pregnant women indicates an awareness of maintaining health during pregnancy. Yoga exercises are chosen as one of the activities because they are relatively safe and easy to do.

Table 4. Frequency Distribution of Sleep Quality in Pregnant Women in the Third Trimester

Sleep Quality	Frekuensi (n)	Persentase (%)
Not good	16	38,1
good	26	61,9
Total	42	100,0

Most third-trimester pregnant women have good sleep quality, with 26 respondents (61.9%). Meanwhile, 16 third-trimester pregnant women (38.1%) have poor sleep quality. These results show that more than half of third-trimester pregnant women are still able to maintain fairly good sleep quality despite experiencing various physical changes during pregnancy.

Table 5. The Relationship Between the Regularity of Yoga Exercises and Sleep Quality in Third-Trimester Pregnant Women at Karanggeneng Health Center

Consistency of Yoga Exercises	Sleep Quality		Total	p-value
	Good	Not Good		
Regular	23	10	33	<0,001
Irregular	3	6	9	
Total	26	16	42	

Most pregnant women who regularly do yoga exercises have good sleep quality, totaling 23 women in their third trimester. Meanwhile, among respondents who do not regularly practice yoga, 6 pregnant women in their third trimester have poor sleep quality. The Chi-Square test results showed a p-value <0.001, which is lower than the 0.05 significance level. Therefore, the alternative hypothesis (Ha) is accepted and the null hypothesis (H0) is rejected. This indicates that there is a relationship between yoga exercises and sleep quality in pregnant women during the third trimester.

DISCUSSION

Based on Table 2, most respondents participated in yoga exercises during their third trimester of pregnancy. The univariate analysis results showed that out of 42 respondents, 33 people (78.6%) regularly did yoga, while 9 people (21.4%) did it irregularly. These results indicate that yoga has become one of the activities quite popular among pregnant women in the working area of Karanggeneng Health Center. The high number of respondents who regularly practice yoga shows that pregnant women are aware of maintaining their physical and psychological health during pregnancy, with most respondents being over 30 years old.

Being a bit older generally relates to being more physically and psychologically ready during pregnancy. This age group usually has better physical conditions and a higher ability to absorb health information compared to older ages. Pregnant women in their prime years tend to be more active in seeking information about pregnancy health, including the benefits of prenatal yoga. This could be one reason why many respondents participate in yoga classes. Being a bit older also plays a role in making decisions about health behaviors during pregnancy. The respondents' educational characteristics show that most pregnant women have a secondary to college-level education. Higher education makes it easier for someone to understand information provided by healthcare professionals. Good knowledge about the benefits of physical activity during pregnancy can boost interest in participating in available health programs. Pregnant women who understand the benefits of yoga tend to have a positive perception of the activity. This might explain why so many respondents took part in yoga exercises in this study.

Based on their jobs, most of the respondents are housewives. This situation allows them to have more flexible time to participate in yoga classes organized by health facilities. Housewives generally have a greater chance of attending health services compared to working mothers with busy schedules. Availability of time is one of the factors that can influence attendance in prenatal yoga activities. This factor also supports the high participation rate of respondents in this study. Most respondents come from areas close to the healthcare facilities. Easy access to health services can increase the chances for pregnant women to regularly join yoga classes. The short distance makes it easier for respondents to attend activities without facing transportation issues or extra costs. Easy access to health services is often a factor that affects how people use health programs. This situation can support pregnant women's participation in the yoga sessions held at Karanggeneng Health Center.

Prenatal yoga is an exercise that combines breathing techniques, muscle stretching, relaxation, and mind control. This practice helps improve body flexibility, posture, reduce muscle tension, and provide comfort during pregnancy. In the third trimester, pregnant women often experience complaints like back pain, fatigue, sleep disturbances, and anxiety before childbirth. Yoga has become one of the non-drug methods widely recommended to help relieve these various complaints. The benefits felt by pregnant women can be a reason for the growing interest in joining prenatal yoga activities.

The results of this study align with the research by Wulandari and Putri (2022), which showed that most pregnant women in their third trimester participate in prenatal yoga because they experience benefits like increased physical comfort and psychological calm. That study found that women who regularly practiced yoga reported feeling more relaxed, experiencing less pain, and being better prepared for childbirth. These findings support research showing that the majority of respondents engage in yoga exercises during pregnancy. Rahmawati et al. (2023) also showed that knowledge levels are related to pregnant women's participation in prenatal yoga activities. Moms who have good knowledge about the benefits of yoga tend to be more active in attending classes compared to those with less knowledge. Information from healthcare workers, social media, and experiences from other pregnant women all contribute to forming a positive perception of prenatal yoga. These results reinforce findings from other studies showing high participation of respondents in yoga exercises.

Pregnant women's participation in yoga classes can also be influenced by family support. Support from their husband and other family members can boost a mom's motivation to join health activities during pregnancy. This support can come in the form of emotional encouragement, help with transportation, or arranging schedules so she can attend regular workouts. Moms who get family support usually have better adherence to the health programs recommended by healthcare providers. Research by Sari and Handayani (2021) shows that family support affects how well pregnant women stick to prenatal yoga classes. Moms who get support from their family tend to attend more often than those who don't get as much support. Family plays a role in helping moms feel safer and more confident while doing physical activities during pregnancy. These findings show that the success of a yoga program isn't just influenced by individual factors but also by the family environment.

Prenatal yoga exercises are generally done with a duration adjusted to the condition of pregnant women in the third trimester, so they remain safe and comfortable. This duration shows that the exercises focus more on light activities that are safe for women in the third trimester. Even though it's relatively short, yoga practice can still provide benefits such as relaxation, reduced muscle tension, and increased physical comfort. The exercise duration, tailored to the pregnancy condition, helps participants stay active without getting overly tired. This shows that prenatal yoga can be applied flexibly according to the pregnant woman's ability.

The fairly high participation of pregnant women in yoga classes shows an active effort to stay healthy during pregnancy. Regular physical activity helps improve fitness, boost blood circulation, and reduce stress before childbirth. Prenatal yoga also offers moms the chance to get health education and share experiences with other expecting mothers. The activity supports both physical and psychological readiness in facing the childbirth process. The findings show that yoga exercises have become one of the programs accepted and used by most third-trimester pregnant mothers at Karanggeneng Health Center.

Based on the results in Table 3, most third-trimester pregnant women have good sleep quality, although some sleep disturbances were still found in a few respondents. Some sleep quality indicators still showed problems for some respondents, such as restless sleep, feeling less refreshed in the morning, and having trouble falling asleep. These results indicate that many pregnant women have not been getting optimal rest during pregnancy. The sleep disturbances can be influenced by physiological and psychological changes, as well as increasing physical discomfort as they approach childbirth. Poor sleep quality has the potential to affect the mother's health and the baby's well-being.

Based on age characteristics, most respondents are in the healthy reproductive age group. Even so, sleep quality problems are still commonly found in this group. This condition shows that sleep quality in pregnant women is not only influenced by age, but also by physical changes that occur during the third trimester. Younger pregnant women generally have better physical condition, but can still experience sleep disturbances due to hormonal changes and anxiety before labor. Meanwhile, older pregnant women tend to have a higher risk of experiencing physical discomfort that can interfere with sleep, such as back pain, fatigue, and increased nighttime urination.

Some respondents still experience trouble with sleep comfort, such as restless sleep and not feeling refreshed in the morning. This shows that most pregnant women face disruptions in restorative sleep. This can happen due to frequent interruptions in sleep caused by changing body positions, increased fetal movements, or discomfort in the back and pelvic areas. Poor-quality sleep prevents the body from getting enough time to recharge. As a result, mothers feel more tired and less energetic in carrying out daily activities. Research by Hidayati et al. (2022) found that more than two-thirds of pregnant women in their third trimester experienced sleep disturbances, characterized by frequent nighttime awakenings and feeling unrefreshed upon waking. The researchers explained that increased progesterone levels, changes in body metabolism, and physical discomfort are the main factors affecting sleep quality during pregnancy. These findings align with the findings of this study, which showed a high proportion of respondents experiencing suboptimal sleep quality. This condition indicates that sleep disturbances remain a common problem for pregnant women in their third trimester.

Regarding the ability to fall asleep within 30 minutes of lying down, 88.1% of respondents were in the irregular category. These results indicate that most pregnant women require considerable time to fall asleep. Difficulty falling asleep can be related to anxiety about childbirth, changes in sleep patterns, or physical complaints that arise during pregnancy. If persisted over a prolonged period, this condition can reduce the total amount of sleep obtained each night. Reduced sleep can potentially cause fatigue and disrupt daily activities. Research by Pramesti and Yuliana (2021) reported that insomnia is one of the most common disorders found in pregnant women in the third trimester. The researchers explained that anxiety about childbirth and physical changes are dominant factors causing difficulty falling asleep. These findings support the findings of this study, which showed that most respondents experienced delays in falling

asleep after lying down. This condition indicates the need for efforts to help pregnant women relax before bed.

Sleep disturbances were also evident in indicators of waking up at night to urinate. As many as 59.5% of respondents stated that they still frequently woke up to go to the bathroom at night. Increased urinary frequency is a common condition due to pressure from the uterus on the bladder, which increases in size in the third trimester. Repeated interruptions in sleep cause deeper sleep phases to be shortened, thus decreasing sleep quality. As a result, pregnant women are more prone to feeling tired and sleepy during the day. Research by Wijayanti et al. (2023) found that nocturia is a factor associated with poor sleep quality in pregnant women in the third trimester. Respondents who frequently woke up to urinate had lower sleep quality scores than those who woke up less frequently. These results support the findings of this study, which showed that frequent nighttime urination remains a significant cause of sleep disturbances. This condition requires attention in antenatal care services as it can impact maternal comfort during pregnancy.

Although various sleep disturbances were still identified, several indicators showed relatively good results. 64.3% of respondents did not experience excessive sweating during sleep, and 54.8% did not experience nightmares. Furthermore, 54.8% of respondents stated they did not require sleeping pills to rest at night. These results indicate that not all aspects of sleep quality are impaired. Some respondents were still able to maintain comfortable sleep despite the various physiological changes during pregnancy. Respondents' educational characteristics can be a factor influencing sleep quality. Respondents with higher levels of education generally have easier access to information about healthy lifestyles during pregnancy, including how to maintain good sleep. Good knowledge can help mothers adopt sleep-promoting habits, such as adjusting their sleeping position, limiting caffeinated beverage consumption, and relaxing before bed. However, the study results show that sleep disturbances persist across various educational groups. This suggests that sleep quality during pregnancy is influenced by many factors beyond education level.

Occupational characteristics can also influence sleep quality for pregnant women. Working mothers often face higher activity demands, putting them at risk of physical and psychological fatigue. On the other hand, housewives can also experience fatigue from daily domestic activities. High activity loads can make it difficult for the body to achieve a relaxed state before bedtime. This may explain why sleep disturbances were still found across various occupational groups in this study.

The results in Table 4 show that the bivariate analysis using the Chi-Square test yielded a significance value (p-value) of <0.001 . These results indicate a significant relationship between yoga and sleep quality among pregnant women in their third trimester at the Karanggeneng Community Health Center. Pregnant women who participated in yoga tended to have better sleep quality than those who did not. This finding suggests that prenatal yoga plays a role in supporting quality rest during pregnancy. Participating in yoga can help pregnant women achieve greater physical and psychological well-being, which

in turn leads to better sleep patterns. Most yoga participants were from a healthy reproductive age group. This age group generally has better physical condition, making it easier to participate in exercise during pregnancy. Younger pregnant women also tend to be more active in seeking health information through social media, health professionals, and prenatal classes. This ease of access to information can increase understanding of the benefits of prenatal yoga. This factor may be one reason why yoga participation is more prevalent among younger age groups than older ones.

The relationship between yoga and sleep quality can be explained by both physiological and psychological mechanisms. Prenatal yoga combines breathing techniques, stretching, meditation, and relaxation, which help reduce muscle tension and decrease sympathetic nervous system activity. A more relaxed body will more easily enter and maintain sleep throughout the night. Breathing exercises also help increase oxygenation, making the body more comfortable while resting. These effects contribute to improving the sleep quality of pregnant women. The results showed that most respondents still experienced sleep disturbances, such as feeling unrefreshed upon waking in the morning, feeling sleepy during the day, and having difficulty getting truly restful sleep. However, the group that participated in yoga performed better than the group that did not participate. This indicates that yoga can help mitigate the impact of sleep disturbances that often occur in the third trimester. Regular physical activity helps the body adapt to the physiological changes that occur during pregnancy. These benefits become more significant as the pregnancy approaches delivery.

Research by Chen et al. (2022) found that pregnant women who regularly participated in prenatal yoga had better sleep quality than those who did not participate. The researchers explained that yoga helps reduce stress levels, promotes relaxation, and improves sleep patterns during pregnancy. Respondents who participated in yoga also experienced a lower frequency of nighttime awakenings. These findings support the results of this study, which showed a significant relationship between yoga and sleep quality for pregnant women in the third trimester.

Furthermore, Beddoe et al. (2021) also reported that prenatal yoga is effective in improving the physical and psychological well-being of pregnant women. Regular practice helps reduce anxiety before labor and improves the body's ability to rest. Reduced anxiety levels are associated with improved sleep quality because the mind becomes calmer during rest. Pregnant women who feel more relaxed tend to fall asleep more easily and have longer sleep durations. These results support the findings of this study.

Occupational factors can also influence sleep quality and participation in yoga. Housewives generally have greater flexibility in their time to participate in yoga activities than working mothers with busy schedules. This availability of time can increase the likelihood of participating in regular practice. Consistent practice provides more optimal benefits than irregular practice. This situation may be a factor supporting the relationship between yoga and sleep quality in this study.

In addition to physical benefits, yoga also provides social and emotional benefits. Group yoga activities allow pregnant women to share experiences, gain social support, and increase confidence in the lead-up to labor. Good social support can help reduce anxiety and emotional tension often experienced during the third trimester. A more stable psychological state contributes to improved sleep quality. These benefits suggest that yoga works not only through physical activity but also through improving psychological well-being. The results of this study indicate that yoga can be a beneficial non-pharmacological intervention for improving sleep quality for pregnant women in the third trimester. A regular and structured prenatal yoga program can help mothers cope with the various physical and psychological changes during pregnancy. Support from healthcare professionals and families is needed to ensure continued maternal participation in yoga activities. Improving sleep quality during pregnancy has important benefits for maternal health and fetal development. The findings of this study indicate that yoga is a potential strategy to support maternal health during the third trimester.

CONCLUSIONS AND RECOMMENDATIONS

Most pregnant women regularly practice yoga and report good sleep quality. There is a correlation between regular yoga practice and sleep quality in the third trimester. This activity provides an opportunity for pregnant women to relax, improve physical comfort, and prepare for labor. Sleep disturbances can still be found in some pregnant women, so efforts are needed to improve comfort and quality of rest during pregnancy.

FURTHER STUDY

In future research, other interventions combined with prenatal yoga could be added or other interventions that can improve sleep quality could be investigated.

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