
The Relationship Between Sleep Disorders And Neurological Complaints In Third Trimester Pregnant Women In The Banda Sakti Community Health Center Work Area, Lhokseumawe City

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Abstract

Sleep disturbances are one of the complaints that pregnant women can experience, especially in the third trimester, along with physiological changes and increasing discomfort during pregnancy. Neurological complaints such as headaches, dizziness, tingling, and fatigue can also occur during pregnancy and can affect maternal comfort and activities. This study aims to determine the relationship between sleep disturbances and neurological complaints in third-trimester pregnant women in the Banda Sakti Community Health Center Work Area, Lhokseumawe City. This study used a quantitative method with a cross-sectional design. The population in this study were third-trimester pregnant women in the Banda Sakti Community Health Center Work Area, Lhokseumawe City and a sample of 44 respondents using a total sampling technique. Data collection was carried out using a sleep disturbance questionnaire and a neurological complaint questionnaire. Data were analyzed using the Chi-Square test. The results showed that the majority of respondents experienced sleep disturbances (32 respondents (72.7%), while respondents who did not experience sleep disturbances were 12 respondents (27.3%). Most respondents experienced moderate-severe neurological complaints (29 respondents (65.9%). The results of the Chi-Square test showed a p value of 0.005 ($p < 0.05$), which indicates a significant relationship between sleep disorders and neurological complaints in pregnant women in the third trimester. It was concluded that there was a significant relationship between sleep disorders and neurological complaints in pregnant women in the third trimester in the Banda Sakti Community Health Center Working Area, Lhokseumawe City.

Keywords: Sleep Disorders, Neurological Complaints, Pregnant Women, Third Trimester, Obstetrics

INTRODUCTION

Pregnancy is a physiological process that causes various anatomical, hormonal, physiological, and psychological changes in a woman's body. These changes become more pronounced in the third trimester as the fetus grows and the uterus increases in size. Pregnant women during this period often experience discomfort, such as back pain, shortness of breath, frequent urination, leg cramps, and difficulty finding a comfortable sleeping position. These changes can affect a pregnant woman's rest patterns and sleep quality (Veri et al., 2022).

Sleep is a basic human need that plays a vital role in energy recovery, maintaining physiological functions, regulating metabolism, and maintaining physical and psychological health. Sleep disorders are conditions in which a person has difficulty initiating sleep, maintaining sleep, frequently waking up during the night, or feeling inadequate and not getting enough quality sleep. In the third trimester of pregnancy, sleep disorders can be influenced by abdominal enlargement, fetal movement, increased urinary frequency, back pain, muscle cramps, and anxiety surrounding labor. If persistent, these disorders can cause fatigue and reduce the mother's ability to carry out daily activities (Jannah & Meihartati, 2024).

Sleep disorders can also be associated with various neurological complaints in pregnant women. Neurological complaints are symptoms related to nervous system function, both central and peripheral. During pregnancy, hormonal changes, increased blood volume, changes in circulation, fluid retention, and changes in the body's biomechanics can affect the nervous system and cause complaints such as headaches, dizziness, fatigue, tingling,

numbness in the extremities, impaired concentration, and balance disorders. Some of these complaints may be part of the physiological adaptations of pregnancy, but complaints that are persistent, severe, or accompanied by other symptoms require medical attention (Veri et al., 2022).

Headaches and dizziness are common complaints during pregnancy and have the potential to disrupt maternal comfort and activities. Sleep disturbances can lead to suboptimal recovery, fatigue, and decreased daytime alertness. Furthermore, poor-quality sleep can affect a person's concentration, mood, and ability to perform activities. Research on the sleep quality of pregnant women in the third trimester shows that sleep disturbances can be accompanied by complaints such as headaches, dizziness, low energy, impaired activity, and emotional disturbances. Therefore, sleep disturbances should be considered as a possible factor associated with neurological complaints in pregnant women (Alfiani et al., 2024).

The relationship between sleep disturbances and neurological complaints in pregnant women in the third trimester can be explained by several mechanisms. Lack of sleep and frequent nighttime awakenings can cause physical fatigue and reduce the body's ability to recover. These conditions can increase sensitivity to pain, reduce concentration, and exacerbate the perception of physical complaints. Conversely, complaints such as headaches, back pain, cramps, or tingling sensations can prevent mothers from getting restful sleep. Thus, the relationship between sleep disturbances and neurological complaints may be reciprocal, with sleep disturbances exacerbating certain complaints, while neurological complaints can further disrupt sleep quality (Veri et al., 2022).

Several studies in Indonesia have examined sleep quality and the factors influencing it in pregnant women in the third trimester. Palifiana and Wulandari (2018) reported that physical changes, pregnancy discomfort, anxiety, and environmental factors can affect sleep quality in pregnant women. Other studies on the use of maternity pillows and lavender aromatherapy indicate that sleep disturbances are a common problem experienced by pregnant women in the third trimester. Furthermore, research on prenatal yoga also highlights concerns about sleep quality issues in pregnant women due to physical discomfort and anxiety. However, research that specifically examines the relationship between sleep disorders and neurological complaints in pregnant women in the third trimester, especially in the working area of the Banda Sakti Community Health Center, Lhokseumawe City, still needs to be conducted (Sumarni et al., 2023).

The Banda Sakti Community Health Center (Puskesmas) in Lhokseumawe City is a healthcare facility that plays a role in providing antenatal care to pregnant women, including monitoring their physical and psychological condition during pregnancy. Pregnancy checkups not only focus on obstetric conditions but also address complaints that can impact the mother's quality of life, such as sleep disturbances, headaches, dizziness, tingling, and impaired concentration. Identifying the relationship between sleep disturbances and neurological complaints can help healthcare providers improve assessments and provide appropriate education and counseling during antenatal care (Prawirohardjo, 2020).

Based on this description, sleep disturbances and neurological complaints are two important issues to address in the third trimester of pregnancy. Sleep disturbances can impact the mother's physical and psychological condition, while neurological complaints can reduce comfort and disrupt daily activities. Research on the relationship between these two variables is expected to provide information on the condition of pregnant women in the Banda Sakti Community Health Center's coverage area and serve as a basis for developing promotive and preventive efforts, as well as monitoring complaints during pregnancy. Therefore, the researcher is interested in conducting a study entitled "The Relationship between Sleep

Disorders and Neurological Complaints in Third Trimester Pregnant Women in the Working Area of the Banda Sakti Community Health Center, Lhokseumawe City."

RESEARCH METHODS

This study used a quantitative analytical method with a cross-sectional design. This study design was used to determine the relationship between sleep disturbances and neurological complaints in pregnant women in the third trimester. Measurements of sleep disturbances and neurological complaints were conducted simultaneously on respondents, and the results of both variables were analyzed to determine whether there was a relationship between sleep disturbances and neurological complaints in pregnant women in the third trimester.

This study was conducted in the Banda Sakti Community Health Center (Puskesmas) working area of Lhokseumawe City in June 2026. The population in this study were all pregnant women in their third trimester who met the research criteria and met the study criteria. The sample size for this study was 44 pregnant women in their third trimester. The sampling technique used was total sampling, meaning all members of the population who met the research criteria were included in the study.

The inclusion criteria for this study included pregnant women in their third trimester who resided in the Banda Sakti Community Health Center working area of Lhokseumawe City, who were willing to participate as research respondents, who were able to communicate well, who could read and understand Indonesian, and who were willing to complete the research questionnaire. Exclusion criteria included pregnant women who did not complete the questionnaire, did not complete the research process, or experienced conditions that prevented them from providing complete information.

The research instruments used consisted of a sleep disturbance questionnaire and a neurological complaints questionnaire. Sleep disturbances were measured using the Pittsburgh Sleep Quality Index (PSQI), which assesses respondents' sleep quality. The PSQI includes several components: subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleeping medication, and daytime activity disturbances. The overall score from the questionnaire was used to determine respondents' sleep quality.

Neurological complaints were measured using a questionnaire containing several neurological complaints that pregnant women may experience in the third trimester, including headaches, dizziness, tingling, numbness or tingling in the limbs, weakness, fatigue, difficulty concentrating, and balance disorders. Each complaint was assessed based on the respondent's condition, according to the indicators specified in the questionnaire. The measurement results were then summed and categorized based on the scores obtained. Before being used in the study, the instrument developed by the researcher underwent validity and reliability testing to ensure its suitability for measuring neurological complaints in pregnant women.

The research procedure began with the researcher obtaining research permits and coordinating with the Banda Sakti Community Health Center in Lhokseumawe City. Next, the researcher explained to the respondents the purpose, benefits, procedures, and their rights during the study. Respondents who agreed to participate were asked to provide informed consent. After consent was granted, respondents completed the sleep disorder questionnaire and the neurological complaints questionnaire. The questionnaires were completed with assistance from the researcher if respondents had difficulty understanding the questions, without influencing their responses.

After completing all questionnaires, the researcher checked for completeness, coded them, processed them, and analyzed them. Data on sleep disturbances and neurological

complaints from each respondent were then analyzed to determine the relationship between the two variables. All respondents underwent the same data collection procedure, ensuring a uniform research process.

The research data were analyzed using univariate and bivariate analyses. Univariate analysis was used to describe respondent characteristics, including age, education, occupation, gestational age, and parity, as well as the distribution of sleep disturbances and neurological complaints. The results of the univariate analysis were presented in the form of frequency distributions and percentages.

Bivariate analysis was used to determine the relationship between sleep disturbances as the independent variable and neurological complaints as the dependent variable in pregnant women in the third trimester. Because both variables were categorical, the relationship analysis was performed using the Chi-square (χ^2) test. If any cells had an expected frequency less than 5 and did not meet the requirements for the Chi-square test, Fisher's Exact Test was used. The significance level used in this study was $\alpha = 0.05$. If the p-value is <0.05 , then H_a is accepted, which means there is a significant relationship between sleep disorders and neurological complaints in pregnant women in the third trimester in the Banda Sakti Community Health Center Working Area of Lhokseumawe City. Conversely, if the p-value ≥ 0.05 , then H_a is rejected, which means there is no significant relationship between sleep disorders and neurological complaints.

RESULTS AND DISCUSSION

This study was conducted in the Banda Sakti Community Health Center (Puskesmas) working area in Lhokseumawe City in June 2026. The number of respondents in this study was 44 pregnant women in the third trimester. The results are presented in the form of respondent characteristics, distribution of sleep disorders, distribution of neurological complaints, and the relationship between sleep disorders and neurological complaints.

Table 1. Respondent Characteristics by Age

Usia	Frekuensi (n)	Persentase (%)
<20 years	2	4,5
20–29 years	17	38,6
30–39 years	21	47,7
≥ 40 years	4	9,1
Total	44	100

Based on Table 1, the majority of respondents were in the 30–39 years age group, namely 21 people (47.7%), while the fewest respondents were in the <20 years age group, namely 2 people (4.5%).

Table 2. Respondent Characteristics by Education

Education	Frequency (n)	Percentage (%)
Elementary School	4	9,1
junior high school	9	20,5
High School/Vocational School	22	50,0
College	9	20,5
Total	44	100

Based on Table 2, the majority of respondents had a high school/vocational school education level, namely 22 people (50.0%), while respondents with elementary school education were the smallest group, namely 4 people (9.1%).

Table 3. Respondent Characteristics by Occupation

Work	Frequency (n)	Percentage (%)
Housewife	27	61,4
Self-employed	8	18,2
civil servant	3	6,8
Employee	4	9,1
Other	2	4,5
Total	44	100

Based on Table 3, the majority of respondents were housewives, namely 27 people (61.4%), while respondents with other jobs were the smallest group, namely 2 people (4.5%).

Table 4. Sleep Disorders in Pregnant Women in the Third Trimester

<i>Pre Test</i>	Knowledge	Frequency (n)	Percentage (%)
	No sleep disturbances	12	27,3
	Experiencing sleep disorders	32	72,7
	Total	44	100

Based on Table 4, the majority of respondents experienced sleep disorders, namely 32 people (72.7%), while 12 respondents (27.3%) did not experience sleep disorders.

Tabel 5. Keluhan Neurologis pada Ibu Hamil Trimester III

<i>Post Test</i>	Knowledge	Frequency (n)	Percentage (%)
	None/light	15	34,1
	Moderate–severe	29	65,9
	Total	44	100

Based on Table 5, the majority of respondents experienced neurological complaints in the moderate-severe category, namely 29 people (65.9%), while 15 people (34.1%) experienced neurological complaints in the none/mild category.

Tabel 6. Hubungan Gangguan Tidur dengan Keluhan Neurologis pada Ibu Hamil Trimester III

Knowledge Category	N. Moderate-Severe	%	None/Light	%	Total	%	p-value
Experiencing sleep disorders	26	81,3	6	18,8	32	100	
No sleep disturbances	3	25,0	9	75	12	100	0,005
Total	29	65,9	15	34,1	44	100	

Based on Table 6, of the 32 respondents who experienced sleep disorders, 26 people (81.3%) experienced moderate-severe neurological complaints, while 6 people (18.8%) experienced no/mild neurological complaints. Meanwhile, of the 12 respondents who did not experience sleep disorders, 3 people (25.0%) experienced moderate-severe neurological complaints and 9 people (75.0%) experienced no/mild neurological complaints. The results of the Chi-Square test showed a p-value of 0.005 ($p < 0.05$). These results indicate that there is a significant relationship between sleep disorders and neurological complaints in pregnant

women in the third trimester in the Banda Sakti Community Health Center Working Area of Lhokseumawe City. Thus, H_a is accepted and H_0 is rejected. Descriptively, the proportion of moderate-severe neurological complaints is higher in pregnant women who experienced sleep disorders, namely 26 of 32 respondents (81.3%), compared to pregnant women who did not experience sleep disorders, namely 3 of 12 respondents (25.0%). This finding indicates a pattern of relationship between the two variables in the research respondent group.

Identifying Sleep Disorders in Third Trimester Pregnant Women

Based on the results of a study of 44 third-trimester pregnant women in the Banda Sakti Community Health Center (Puskesmas) in Lhokseumawe City, it was found that the majority of respondents (32 respondents) experienced sleep disorders, while 12 (27.3%) did not experience sleep disorders. These results indicate that sleep disorders are a fairly common complaint among third-trimester pregnant women.

Sleep disorders in the third trimester can be related to various changes that occur during pregnancy. The increasing size and weight of the uterus can cause discomfort when lying down, especially when maintaining a sleeping position for extended periods. Additionally, increased urinary frequency, fetal movement, back pain, leg cramps, heartburn, and anxiety surrounding labor can disrupt the continuity and quality of a mother's sleep.

In the third trimester, a mother's need for rest remains crucial due to physiological changes and increased physical stress. Increasing physical stress can make a mother more susceptible to fatigue, while discomfort during pregnancy can cause difficulty falling asleep or frequent nighttime awakenings. Recurrent sleep disturbances can lead to shorter effective sleep time and decreased sleep quality.

The high incidence of sleep disturbances in this study may also be linked to the characteristics of pregnant women in the third trimester, who face physical and psychological changes leading up to delivery. Anxiety about the delivery process, the condition of the fetus, and preparation for motherhood can all be factors that influence restfulness before bed. Therefore, sleep disturbances in the third trimester of pregnancy require attention as an aspect of maternal health monitoring.

Identifying Neurological Complaints in Pregnant Women in the Third Trimester

Based on the research results, of the 44 respondents, 29 (65.9%) experienced moderate-to-severe neurological complaints, while 15 (34.1%) were in the mild/none category. Neurological complaints that can be found in pregnant women include headaches, dizziness, tingling, numbness, fatigue, impaired concentration, and other complaints related to the nervous system.

These complaints can arise in conjunction with physiological changes during pregnancy. Hormonal changes, changes in blood circulation, increased metabolic demands, changes in body posture, and fatigue can all impact the mother's physical condition. In the third trimester, the increased physical load can also cause mothers to feel more easily fatigued and uncomfortable.

Headaches and dizziness are common complaints during pregnancy. These complaints need to be assessed comprehensively because they can be related to various conditions, ranging from fatigue and lack of sleep to pregnancy conditions that require further examination. Therefore, healthcare professionals need to assess the characteristics of the complaints, their frequency, intensity, duration, and accompanying symptoms.

In addition to physical complaints, sleep disturbances can leave mothers feeling less refreshed upon waking and experiencing daytime fatigue. This condition can impact concentration and daily activities. Therefore, sleep quality is a crucial aspect to consider when monitoring the health of pregnant women in the third trimester.

Analyzing the Relationship between Sleep Disturbances and Neurological Complaints in Third Trimester Pregnant Women

Based on the results of a bivariate analysis of 44 respondents, it was found that of the 32 pregnant women experiencing sleep disturbances, 26 (81.3%) experienced moderate-to-severe neurological complaints, while 6 (18.8%) experienced none/mild neurological complaints. Meanwhile, of the 12 pregnant women who did not experience sleep disturbances, 3 (25.0%) experienced moderate-to-severe neurological complaints and 9 (75.0%) experienced none/mild complaints.

The chi-square test results on the sample data showed a p-value of 0.005 ($p < 0.05$). These results indicate a significant relationship between sleep disturbances and neurological complaints in third trimester pregnant women in the Banda Sakti Community Health Center (Puskesmas) working area in Lhokseumawe City.

Descriptively, the proportion of moderate-to-severe neurological complaints was higher in women experiencing sleep disturbances compared to women without sleep disturbances. This condition can be explained by the fact that poor-quality sleep can prevent the body from receiving optimal recovery time. Lack of sleep or frequent nighttime awakenings can cause daytime fatigue, reduce concentration, and increase the perception of certain physical complaints.

Sleep disorders and neurological complaints can also have a reciprocal relationship. Sleep disorders can cause fatigue and exacerbate the perception of headaches or dizziness. Conversely, the presence of headaches, tingling, pain, or physical discomfort can make it more difficult for a mother to sleep. Therefore, the relationship between these two conditions needs to be understood in the context of the overall pregnancy.

The results of this study demonstrate the importance of healthcare professionals' attention to the sleep quality of pregnant women in the third trimester. During prenatal checkups, the assessment should not only focus on obstetric conditions but also include sleep patterns, physical complaints, fatigue levels, and neurological complaints. Early identification can help healthcare professionals provide education on healthy sleep patterns, comfortable sleeping positions, managing discomfort during pregnancy, and when the mother needs further examination.

Based on these results, sleep disorders can be an aspect that needs to be considered in midwifery care for pregnant women in the third trimester. Education on the importance of adequate rest, activity management, meeting nutritional and fluid needs, and recognizing danger signs during pregnancy can be provided as part of antenatal care. However, the statistical associations in this study do not necessarily prove a causal relationship, as the study design was cross-sectional.

CONCLUSION

Based on the results of a study on the relationship between sleep disturbances and neurological complaints in third-trimester pregnant women in the Banda Sakti Community Health Center (Puskesmas) working area in Lhokseumawe City, it can be concluded that the majority of respondents experienced sleep disturbances (32 respondents (72.7%), while 12 respondents (27.3%) did not experience sleep disturbances.

Regarding neurological complaints, the majority of respondents experienced moderate-to-severe neurological complaints (29 respondents (65.9%), while 15 respondents (34.1%) had no/mild neurological complaints. These results indicate that neurological complaints are quite common in third-trimester pregnant women.

The analysis of the relationship between sleep disturbances and neurological complaints showed that of the 32 respondents experiencing sleep disturbances, 26

respondents (81.3%) experienced moderate-to-severe neurological complaints. Meanwhile, of the 12 respondents who did not experience sleep disturbances, 3 respondents (25.0%) experienced moderate-to-severe neurological complaints. The chi-square test results showed a p-value of 0.005 ($p < 0.05$), indicating a significant association between sleep disturbances and neurological complaints in third-trimester pregnant women in the Banda Sakti Community Health Center (Puskesmas) working area in Lhokseumawe City. Therefore, sleep disturbances are associated with the emergence of neurological complaints in third-trimester pregnant women.

Sleep disturbances in third-trimester pregnant women require attention in obstetric care because these conditions can be associated with fatigue, headaches, dizziness, impaired concentration, and various other physical complaints. Therefore, assessing sleep patterns and neurological complaints can be part of monitoring the condition of pregnant women, accompanied by education on adequate rest, comfortable sleep patterns, managing discomfort during pregnancy, and recognizing signs and symptoms that require further examination.

REFERENCES

- Alfiani, F., Safitri, R., & Maulana, R. (2024). Pengaruh prenatal yoga terhadap peningkatan kualitas tidur ibu hamil trimester III di wilayah kerja Puskesmas Tajinan Kabupaten Malang. *Jurnal Kesehatan Hesti Wira Sakti*, 12(2). <https://doi.org/10.47794/jkhws.v12i02.33>
- Jannah, M., & Meihartati, T. (2024). Efektifitas penggunaan maternity pillow dan aromaterapi lavender terhadap kualitas tidur ibu hamil trimester III. *Jurnal Kesehatan*. <https://doi.org/10.35730/jk.v13i0.811>
- Janiwarty, B., & Pieter, H. Z. (2013). Pendidikan psikologi untuk bidan: Suatu teori dan terapannya. Rapha Publishing.
- Kementerian Kesehatan Republik Indonesia. (2020). Pedoman pelayanan antenatal terpadu (Edisi 3). Kementerian Kesehatan RI.
- Palifiana, D. A., & Wulandari, S. (2018). Analisis faktor dominan yang mempengaruhi kualitas tidur ibu hamil trimester III di Klinik Pratama Asih Waluyo Jati. *Jurnal Kebidanan Indonesia*, 9(2). <https://jurnal.stikesmus.ac.id/index.php/JKebIn/article/view/203>
- Prawirohardjo, S. (2020). Ilmu kebidanan (Edisi 4, cetakan ke-6). PT Bina Pustaka Sarwono Prawirohardjo.
- Sumarni, S., Hatta, S. S., & Kumorojati, R. (2023). Pengaruh prenatal yoga terhadap peningkatan kualitas tidur ibu hamil trimester III. *Indonesian Scientific Journal of Midwifery*, 1(2). <https://doi.org/10.52657/isjm.v1i2.2216>
- Veri, N., Faisal, T. I., & Khaira, N. (2022). Literatur review: Penatalaksanaan ketidaknyamanan umum kehamilan trimester III. *Femina: Jurnal Ilmiah Kebidanan*, 3(2). <https://doi.org/10.30867/femina.v3i2.482>