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The Effect of Pregnancy Exercises on the Quality of Sleep of Third Trimester Pregnant Women in Sindangrasa Village Ciamis District

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ABSTRACT

Introduction: Pregnancy causes physical and psychological changes. Psychological changes, such as emotional changes, anxiety, and anxiety disorders, also make it difficult for mothers to sleep. The prevalence of insomnia as one of the sleep disorders in pregnant women worldwide reaches 41.8%, with a total of around 58.52 million people. In Indonesia, according to the National Sleep Foundation survey, there are 5,354,594 pregnant women, and in West Java there are 138.53 thousand. In Ciamis Regency, the Health Office in 2024 recorded a total of 20,851 pregnant women. **Objective**: This study aims to determine the effect of pregnancy exercises on the quality of sleep of third trimester pregnant women in Sindangrasa Village, Ciamis Regency. **Method**: This study used a quantitative method with a quasi-experiment design. Treatment in the form of pregnant gymnastics was given, then a post-test was conducted to measure the respondents' sleep quality after treatment. The research was conducted on December 1-21, 2024 with 10 respondents in Sindangrasa Village, Ciamis Regency. **Result**: The results showed that before the pregnancy exercise, most pregnant women had poor sleep quality as many as 8 people (80%). After doing pregnancy exercises, most pregnant women experienced an increase in good sleep quality as many as 9 people (90%). The results of the Wilcoxon Test resulted in a p value = 0.007 which indicates the effect of pregnant gymnastics on the quality of sleep of third trimester pregnant women. **Conclusion**: Based on the results of the study, it was concluded that pregnancy exercises have a positive effect on the quality of sleep of third trimester pregnant women in Sindangrasa Village, Ciamis Regency.

Keywords: pregnancy gymnastics, sleep quality, third trimester pregnant women

Introduction

Pregnancy lasts for 40 weeks. Trimester I lasts 12 weeks, trimester II lasts from 13 to 27 weeks, and trimester III lasts from 28 to 40 weeks. Pregnancy causes physical and psychological changes. Physical changes may occur, such as morning sickness and vomiting, enlarged uterus, and back pain. Psychological changes, such as emotional changes, anxiety, and anxiety disorders, also make it difficult for mothers to sleep. The health of both the mother and the fetus largely depends on the quality of their sleep (Putri & Nur, 2021).

According to the World Health Organization (WHO) globally, the prevalence of insomnia, which is one of the sleep disorders in pregnant women throughout the world, is 41.8% as many as 58,52 people, while the prevalence of insomnia in pregnant women in Asia is estimated at 48.2% as many as 67,48 people. And data from the National Sleep Foundational survey of the number of pregnant women in Indonesia as many as 5,354,594 people, and in West Java as many as 138.53 thousand people 98.95% (Simanullang, Wirmayani, & Siahaan, 2023). According to the Health Office in 2024, there were 20,851 pregnant women in Ciamis Regency (Dinas Kesehatan Kabupaten Ciamis, 2024).

Compared to the quality of sleep before pregnancy or in the previous II trimester, the quality of sleep of pregnant women, especially during the third trimester, is significantly lower. This is indicated by the increased frequency of waking up at night, shorter sleep duration at night, feeling tired when waking up in the morning, and drowsiness during the day, which causes discomfort for people (Nurfazriah & Fitriani, 2021). In the second and third trimester of pregnancy, pregnant women often experience sleep quality problems due to physiological and psychological changes caused by increasing gestational age, such as abdominal growth and anatomical and hormonal changes. Psychological changes experienced by pregnant women also often cause excessive anxiety, worry, and fear, which in turn can lead to depression and sleep disturbances (Anggraini, Ni'amah, & Suwi'i, 2023).

Providing education for pregnant women is very important, in addition to increasing knowledge, it can also have a good influence on pregnant women (Asmarani, Purwati, & Yulianingsih, 2024). Education that can be given To help maintain the health of her womb and reduce common pregnancy problems such as hypertension, edema, low back pain, shortness of breath, and insomnia, pregnant women are advised to exercise, hypnotherapy, sleep education, and relaxation exercises. Changes A pregnant woman's body is affected by hormonal changes during pregnancy, including her sleep cycle; these hormonal changes also affect physical and mental changes, which can lead to sleep disturbances (Yunanda, Lumbanraja, & Panjaitan, 2022).

Pregnancy exercises increase oxygen circulation to the body's tissues and muscles and improve blood circulation. Pregnant gymnastics is one example of exercise that affects the sleep quality of pregnant women. Relaxation of the parasympathetic nerves of the central nervous system is affected by this relaxing action. One of the functions of the sympathetic nerves is to reduce the production of the hormone adrenaline, which makes pregnant women feel calmer and more relaxed (Handayani & Nuryati, 2023).

Based on preliminary studies conducted by researchers in November 2024, it was found that the number of pregnant women in Sindangrasa Village, Ciamis Regency amounted to 42 people, 13 people in the first trimester, 9 people in the second trimester, and 20 people in the third trimester. From the results of interviews in Sindangrasa Village, Ciamis Regency to 5 pregnant women in the third trimester, 3 people complained of sleep quality disorders in the form of difficulty starting sleep, often waking up 2-3x at night and having difficulty starting back to sleep, the reason for back pain, pressure on the bladder which causes

frequent urination at night. To overcome sleep difficulties caused by physical and psychological factors by doing routine pregnancy exercises, light and regular movements of pregnancy exercises can help improve sleep quality. While 2 pregnant women said they did not experience sleep quality disorders. Based on the description of the data above, the researcher is interested in conducting research with the title "The Effect of Pregnant Gymnastics on the Quality of Sleep of Third Trimester Pregnant Women in Sindangrasa Village Ciamis Regency".

Objective

Based on the above background, the author formulates the problem "Is there an Effect of Pregnant Gymnastics on the Quality of Sleep of Trimester III Pregnant Women in Sindangrasa Village, Ciamis Regency?".

Method

This study uses a type of quantitative pre-experimental research design using a research design in the form of a one group pre test-post test design, which involves one group of subjects. Data collection using a questionnaire as a source of initial data. The tools that will be used in this research are checklist sheets and questionnaires arranged based on the variables studied which will be filled in by respondents. The checklist sheet contains pregnant exercises whether done or not by third trimester pregnant women who have complaints of sleep disorders. The population in this study were pregnant women who conducted pregnancy checks in Sindangrasa Village, Ciamis Regency, totaling 42 people. The sample available at the time of the study was 10 people and in accordance with the inclusion and exclusion criteria, namely pregnant women who were willing to take part in the study and had agreed to informed consent.

To collect data for this study, the Pittsburgh Sleep Index (PSQI) questionnaire was used as an effective instrument to assess sleep quality and pattern. The questionnaire sheet was distributed to the respondents at the time of pre-test to find out if they met the inclusion criteria and to find out if they experienced any sleep disturbance problems after pregnancy exercises. Then, a global score from 0 to 21 for each component was calculated. A global score of more than 5 was considered a significant sleep disorder. All scores from the seven components were combined into one with the scoring criteria. Good is 0, Fair is 1-7, Poor is 8-14, and Very poor is 15-21.

Researchers conducted pregnancy exercises to respondents 2 times 1 week for 15-20 minutes. For the purpose of this study, univariate and bivariate analysis was used. The test used was Wilcoxon. The conclusion of the study results by comparing the p value and alpha value ($\alpha = 0.05$) with 95% confidence interval was used to interpret the results of the study.

Result

This study was conducted on third trimester pregnant women with a total of 10 respondents in Sindangrasa Village, Ciamis Regency. It was held on December 1 to December 21. This study is about "The effect of pregnancy exercises on the quality of sleep of third trimester pregnant women in Sindangrasa Village, Ciamis Regency", and the results are presented in two parts, general data and specific data.

General data shows the demographics of respondents based on age, religion, education, occupation, and information about pregnancy exercises. Special data shows the source of information Specifically, the data of this study includes the quality of sleep of third trimester

pregnant women before the implementation of pregnant gymnastics, the quality of sleep of third trimester pregnant women after the implementation of pregnant gymnastics and the effect of pregnant gymnastics on the quality of sleep of third trimester pregnant women.

1. Respondent Characteristics

Table 4.1 Frequency Distribution Based on the Age of Third Trimester Pregnant Women Who Became Respondents in Sindangrasa Village Ciamis Regency

No	Age	Frequency (f)	Percentage (%)
1	20-27	7	70
2	28-35	3	30
Total		10	100

From table 4.1 it is known that of the 10 respondents the age of the respondents ranged from 20-35 years with the majority aged 20-27 years s much as 70% (7 people) and 28-35 years of age as much as 30% (3 people).

Table 4.2 Frequency Distribution Based on the Educatio of Third Trimester Pregnant Women Who Became Respondents in Sindangrasa Village Ciamis Regency

No	Education	Frequency (f)	Percentage (%)
1	Elementary School	1	10
2	Junior High School	1	10
3	Senior High School	5	50
4	Higher Education	3	30
Total		10	100

Table 4.2 shows that out of 10 respondents, most of them have a high school education as many as 50% (5 people).

Table 4.3 Frequency Distribution Based on the Work of Third Trimester Pregnant Women Who Became Respondents in Sindangrasa Village Ciamis Regency

No	Work	Frequency (f)	Percentage (%)
1	Housewife	7	70
2	Civil Servants	1	10
3	Private Employee	2	20
4	Self Employed	0	0
Total		10	100

From table 4.3 shows that the education level of most respondents has a high school education as much as 50% (5 people). Judging from the work categorized into 4 namely housewives, civil servants, private and self-employed, most of the respondents worked as housewives as much as 70% (7 people).

Table 4.4 Frequency Distribution Based on Information About Pregnancy Exercises in Pregnancy in Sindangrasa Village Ciamis Regency

No	Information	Frequency (f)	Percentage (%)
1	Never	9	90
2	Never Been	1	10
Total		10	100

From table 4.4 shows that out of 10 respondents, pregnant women who have received information about pregnant gymnastics are 90% (9 people).

Table 4.5 Frequency Distribution Based on Difficulty Sleeping During the Third Trimester of Pregnancy in Sindangrasa Village Ciamis Regency

No	Difficulty Sleeping	Frequency (f)	Percentage (%)
1	Yes	8	80
2	No	2	20
	Total	10	100

From table 4.5 It is known that of the 10 respondents, most of the pregnant women experienced difficulty sleeping in third trimester pregnancy, namely as many as 80% (8 people).

2. Data Analysis

a. Univariate Analysis

The characteristics of respondents based on the quality of sleep of third trimester pregnant women before the implementation of pregnancy exercises are categorized into 2 categories, namely good and bad.

Table 4. 6 Frequency Distribution of Sleep Quality of Third Trimester Pregnant Women Before the Implementation of Pregnancy Exercises

No	Sleep Quality	Frequency (f)	Percentage (%)
1	Good	2	20
2	Enough	0	0
3	Poor	8	80
4	Very Poor	0	0
	Total	10	100

Based on table 4. 6 shows that of the 10 respondents almost all respondents had poor sleep quality, namely a total of 8 pregnant women (80%). Characteristics of respondents based on the quality of sleep of third trimester pregnant women after the implementation of pregnant gymnastics are categorized into 2 categories, namely good and bad.

Table 4.7 Frequency Distribution of Sleep Quality of Third Trimester Pregnant Women After the Implementation of Pregnancy Exercises

No	Sleep Quality	Frequency (f)	Percentage (%)
1	Good	9	90
2	Enough	0	0
3	Poor	1	10
4	Very Poor	0	0
	Total	10	100

Based on table 4.7 shows that of the 10 respondents, almost all respondents have good sleep quality, namely a total of 9 pregnant women (90%), while respondents who have not experienced changes or poor sleep quality are 1 pregnant woman (10%).

b. Bivariat Analysis

Table 4. 8 Effect Of Pregnancy Exercises On Sleep Quality Of Third Trimester Pregnant Women In Sindangrasa Village, Ciamis Regency

Sleep Quality	Before Pregnancy Exercise Intervention				After Pregnancy Exercise Intervention				*P Value*
	Doing	Not Doing	Doing	Not Doing	Doing	Not Doing	Doing	Not Doing	
	f	%	f	%	f	%	f	%	
Good	0	0	2	20	9	90	0	0	
Enough	0	0	0	0	0	0	0	0	
Poor	0	0	8	80	1	10	0	0	0.007
Very Poor	0	0	0	0	0	0	0	0	
Total	0	0	10	100	10	100	0	0	

Based on table 4. 8 obtained with a p value = 0.007 <0.05, thus Ha is accepted, which means that there is an effect of pregnant gymnastics on the quality of sleep of third trimester pregnant women in Sindangrasa Village, Ciamis Regency.

Discussion

1. Respondent Characteristics

Based on the age of third trimester pregnant women, 10 respondents aged 20-35 years, and 20-27 years, and as many as 7 respondents (70.0%) aged 28-35 years. 35 years as many as 3 (30.0%), maternal age can affect health aspects during pregnancy. Women who become pregnant at a young age, especially first-time moms, often face new pregnancy-related challenges. This lack of experience can lead to anxiety and instability, which can affect sleep quality. This study suggests that first-time moms who have never been pregnant before may be more prone to sleep problems as they have not yet adjusted to the physical and psychological changes that occur during pregnancy (Mardalena & Susanti, 2022).

This is in line with previous research that younger pregnant women tend to have better sleep quality than older ones, due to factors such as lower stress levels and lack of common health problems experienced by pregnant women (Hoiriah, Kurniawati, & Juliningrum, 2023). Based on the researchers' analysis, age is an important factor in pregnancy, with first pregnancies being more common in younger women (20-27 years). Younger pregnant women tend to have better sleep quality than older pregnant women (28-35 years). This depends on various factors, including physical health, stress levels, and previous pregnancy experience. Understanding these age characteristics is important for developing effective interventions to improve sleep quality and maternal health. More research is needed to understand the factors that influence sleep quality at different ages.

The results of the study based on education are elementary school 1 person (10%), junior high school 1 person (10%), high school 5 people (50%), and college 3 people (30%). Education of pregnant women is an important factor affecting sleep quality and health during pregnancy. The results showed that most of the respondents had a high school educational background, with some of them having higher education. Higher education levels are often associated with a better understanding of health and pregnancy, as well as the ability to access relevant information.

Education plays an important role in developing knowledge and attitudes about health. Pregnant women with better education tend to be more proactive in seeking information on how to stay healthy during pregnancy. This includes relaxation and stress management techniques that contribute to improved sleep. However, while education may have benefits, not all highly educated pregnant women have better sleep quality (Mongi, 2022). Previous research has also shown that pregnant women with higher education are better equipped to cope with sleep problems and are more likely to accept advice from health professionals.

Based on the researchers' analysis, pregnant women with low education levels have limited knowledge about exercise during pregnancy. They are less aware of the benefits of pregnancy exercises and how to do them properly. This may be due to lack of information and limited understanding of health. Pregnant women with high school education showed knowledge about prenatal exercises. They may have received the information through school or public health programs. However, when compared to the knowledge of highly educated pregnant women, their knowledge may still not be comprehensive. Highly educated pregnant women are likely to have more comprehensive knowledge about exercise during pregnancy and will gain a deeper understanding of the physical and psychological benefits of exercise during pregnancy.

The occupation of pregnant women based on the results showed that third trimester pregnant women worked as housewives 7 people (70%), civil servants 1 person (10%), and self-employed 2 people (20%). Pregnant women in Sindangrasa Village, Ciamis Regency mostly work as housewives, on the other hand, housewives are also not free from challenges, heavy physical activities, such as taking care of the household and caring for children, can interfere with adequate rest and sleepPregnant mothers who work outside the home often face greater challenges in managing time between work and household responsibilities. A high workload, coupled with the demands of maintaining good health during pregnancy, can lead to physical and mental exhaustion.

Based on the researchers' analysis, pregnant women who work as housewives often have to handle various household chores, including cooking, cleaning and childcare. Therefore, this work can cause significant physical fatigue and reduce rest time and sleep quality. Strenuous physical activities such as lifting and prolonged standing can cause back pain and discomfort. Mothers who work as civil servants usually have set working hours, which can lead to stress and fatigue. The demands of meeting goals and deadlines can reduce rest time and negatively impact your sleep quality. Self-employed pregnant women often face income uncertainty and irregular workloads. This can lead to ongoing stress and disrupt sleep and rest patterns.

2. Sleep Quality in Third Trimester Pregnant Women in Sindangrasa Village, Ciamis Regency Before Pregnant Gymnastics is Implemented

Based on the results of research on 10 respondents by giving a PSQI questionnaire as many as 18 questions in the form of questions, it shows that the quality of sleep of third trimester pregnant women before being given pregnant gymnastics most of the respondents have poor sleep quality, namely as many as 8 people (80%) and 2 people (20%) have good sleep quality.

Sleep quality in pregnant women emphasizes the importance of understanding the various factors that affect sleep during pregnancy. Identifying and addressing sleep quality issues can help pregnant women improve their physical and mental health and support healthy fetal development. Appropriate measures such as pregnancy exercises

and relaxation techniques during pregnancy can help improve sleep quality and reduce the negative effects of sleep disturbances (Yumna, 2020).

The results of this study are in line with research (Mardalena & Susanti, 2022), showed that the average pre-exercise sleep quality during pregnancy was 19 (57.57%) and 10 (30.30%) reported moderate sleep disturbance. When entering the later stages of pregnancy, it is common to wake up frequently at night due to increased frequency of urination, experience nighttime burning, and, as you get older, find sleeping positions increasingly uncomfortable. This is based on the survey results which showed that most respondents often felt sleepy during pregnancy.

Based on the researcher's analysis, the poor sleep quality of most pregnant women in the third trimester was caused by several respondents who experienced physical discomfort due to changes in their physical condition. Furthermore, the results of the PSQI questionnaire filled out by respondents showed that the average hours of sleep per day for respondents was less than 65%. This is because many mothers experience sleep disturbances, such as not being able to fall asleep within 30 minutes.

Difficulty lying down for a few minutes, waking up at night or in the morning, waking up to go to the bathroom, difficulty breathing, coughing or snoring, feeling cold or hot at night, nightmares, pain in certain parts of the body, or breathing problems. body. This is the answer to the PSQI question. This is due to the score of 13 points on component 5.

3. Sleep Quality in Third Trimester Pregnant Women in Sindangrasa Village, Ciamis Regency After Pregnant Gymnastics is Implemented

Based on the results of research conducted on 10 respondents by giving PSQI questionnaires as many as 18 questions in the form of questions, it shows that of the 10 respondents almost all respondents have good sleep quality, namely a total of 9 people (90%) while respondents who have not experienced changes or have poor sleep quality are 1 person (10%).

Sleep quality itself includes 7 parameters, namely subjective sleep quality, sleep latency, length of night sleep, sleep efficiency, disturbances during night sleep, use of sleeping pills, and disruption of sleep activities during the day. The improvement in sleep quality obtained after the implementation of pregnant gymnastics for 6x in 3 weeks is evidenced by 7 parameters of sleep quality which are getting smaller in value in each parameter, improving the quality of sleep of third trimester pregnant women due to an increased sense of comfort, calm, and peace after the implementation of pregnant gymnastics. This is in accordance with the theory that sleep disorders cannot be corrected only by administering sleeping pills or anti-anxiety drugs, but with various nonpharmacological therapies that affect sleep quality (Alita, 2020).

The results of this study are in line with research (Mardalena & Susanti, 2022), the study stated that doing exercise during pregnancy, the average respondent's sleep quality decreased slightly in 18 people (54.54%), and in 2 people (6.06%) the quality of sleep remained poor. Pregnant women who performed prenatal activities throughout the third trimester reported improved sleep quality. Regular exercise during pregnancy can help mothers sleep well and relieve discomfort (Alita, 2020).

Based on the researchers' analysis, the improved sleep quality in pregnant women in the later stages of pregnancy is due to the increased feelings of comfort, calm and peace after exercising during pregnancy. Exercising during pregnancy can help relieve muscle tension, improve blood circulation and make you feel relaxed. The breathing

exercises taught during exercise can also help reduce stress and anxiety. The movements in pregnancy exercises aim to relieve back pain and increase sleep comfort.

4. The Effect of Pregnant Gymnastics on the Quality of Sleep of Third Trimester Pregnant Women in Sindangrasa Village Ciamis Regency Ciamis

Based on the results of research on 10 respondents by administering the PSQI questionnaire consisting of 18 questions before and after pregnancy gymnastics, of the 8 respondents before pregnancy gymnastics, almost all respondents, namely 8 pregnant women (80.0%) had poor sleep quality. the quality of sleep improved, but after doing pregnancy gymnastics the quality of sleep improved in almost all respondents, namely 9 pregnant women (90.0%). The results showed a P value <0.007. Based on Wilcoxon analysis to determine the difference in sleep quality before and after treatment 0.05.

Therefore, it was found that sleep quality improved before and after exercise during pregnancy, which indicates that exercise during pregnancy has an effect on the quality of sleep of pregnant women in the late stages of pregnancy in Sindangrasa Village, Ciamis Regency. This is in line with the theory that explains that relaxation exercises in pregnancy exercises are an alternative given to pregnant women who experience sleep disorders, because the movements of pregnancy exercises can cause relaxation involving parasympathetic nerves in the central nervous system. Where one of the functions of this parasympathetic nerve is to reduce the production of the hormone adrenaline or epineprin (stress hormone) and increase the secretion of the hormone noradrenaline or norepinephrine (relax hormone) so that it decreases anxiety and fatigue and tension in pregnant women to be more relaxed and calm (Heriyanti, Aulia, Anjani, & Fitriana, 2024).

The results of this study are in accordance with research conducted by (Septiana, Sapitri, & Novita, 2024). The results showed that the average quality of sleep of pregnant women before the intervention of pregnant gymnastics was 6.48 and after the intervention of pregnant gymnastics was 5.19, this shows that the average quality of sleep of pregnant women has increased after the intervention of pregnant gymnastics. This study is in line with (Purba, 2018) which found that the average sleep quality of pregnant women before the intervention of pregnant gymnastics was 10.70 compared to 7.80 after the intervention of pregnant gymnastics. Pregnant women sleep after pregnant gymnastics.

The results of this study still left 1 third trimester pregnant woman who experienced poor sleep quality. The characteristics of mothers who still experience poor sleep quality include multigravida, elementary school education, and working pregnant women. This condition is caused by the mother looking tired because she works all day as a housewife. So that mothers experience discomfort and lack of rest and sleep, often wake up at night to urinate, and back pain. This pregnant mother who was still experiencing poor sleep had some characteristics that may have contributed to her sleep problems. She is a multigravida, which means that she has experienced previous pregnancies. More pregnancy experience does not necessarily guarantee that the mother will be better prepared or more comfortable during the current pregnancy. On the contrary, previous experience can bring greater worry or anxiety, especially if there have been negative experiences associated with previous pregnancies or deliveries (Septiana et al., 2024).

Based on the researcher's analysis, there was a reduction in sleep disturbances in 9 pregnant women, which showed an improvement in sleep quality with regular prenatal exercise. In this study, prenatal exercises were performed 2 times a week, and the

duration was 15-20 minutes for each training session, so prenatal training was performed 6 times for 3 weeks. Therefore, exercise during pregnancy is quite effective in improving sleep quality. Pregnant mothers should do regularly to get better results. In addition, pregnant women also enjoy participating in pregnant exercises because they can meet other pregnant women friends and pregnant exercise participants and exchange experiences. Exercising 2 times a week during pregnancy can have a positive effect on pregnant women by making them feel more comfortable and happy.

Conclusion

The conclusion of this study is that pregnancy exercises have a significant effect on the quality of sleep of third trimester pregnant women in Sindangrasa Village, Ciamis Regency. The study showed that before the pregnancy exercises, most pregnant women experienced poor sleep quality, with 8 respondents experiencing sleep problems. However, after participating in the pregnant gymnastics program, there was a significant improvement, with 9 respondents reporting good sleep quality. Leaving 1 pregnant woman with poor sleep quality, this pregnant woman did not do routine pregnancy exercises because she was busy doing homework and lack of knowledge about the importance of doing routine pregnancy exercises. So this pregnant woman experienced discomfort and lack of rest and sleep, often waking up at night to urinate, and back pain.

The results of statistical analysis using the Wilcoxon test showed a p value of 0.007, which means that there is a significant effect between pregnancy exercises and improved sleep quality. Therefore, pregnancy exercises can be recommended as an effective intervention to help pregnant women improve their sleep quality, as well as provide benefits for maternal and fetal health.

References

1. Alita, R. (2020). Hubungan Senam Hamil dengan Rasa Nyaman Tidur pada Ibu Hamil Trimester III. *Jurnal Keperawatan Widya Gantari Indonesia*, *4*(1), 1–8.
2. Anggraini, W. Y., Ni'amah, S., & Suwi'i, S. (2023). Efektivitas Senam Hamil terhadap Nyeri Punggung pada Ibu Hamil Trimester III. *Jurnal Penelitian Perawat Profesional*, *5*(2), 495–498.
3. Asmarani, S. U., Purwati, A. E., & Yulianingsih, A. P. (2024). Edukasi Tanda Bahaya Kehamilan Pada Kelas Ibu Hamil Puskesmas Cipaku. *Kolaborasi: Jurnal Pengabdian Masyarakat*, *4*(4), 253–259.
4. Dinas Kesehatan Kabupaten Ciamis. (2024). Profil Kesehatan Kabupaten Ciamis Tahun 2024.
5. Handayani, H., & Nuryati, T. (2023). Pengaruh Senam Hamil Terhadap Penurunan Kecemasan pada Ibu Hamil Trimester III. *Jurnal Cakrawala Ilmiah*, *2*(6), 2749–2758.
6. Heriyanti, K. P., Aulia, D. L. N., Anjani, A. D., & Fitriana, D. (2024). Tingkat Pendidikan dan Pengetahuan Ibu Hamil Tentang Asupan Nutrisi di Posyandu Melati 2 Bida Ayu Kota Batam Tahun 2024. *Jurnal Inovasi Kesehatan Terpadu*, *5*(4).
7. Hoiriah, M., Kurniawati, D., & Juliningrum, P. P. (2023). Hubungan Tingkat Kecemasan dengan Kualitas Tidur pada Ibu Hamil Trimester III di Puskesmas Bago. *Pustaka Kesehatan*, *11*(3), 176–182.
8. Mardalena, M., & Susanti, L. (2022). Pengaruh Senam Hamil Terhadap Kualitas Tidur Pada Ibu Hamil Trimester III. *Jurnal'Aisyiyah Medika*, *7*(2).
9. Mongi, T. (2022). Pengaruh Senam Hamil Terhadap Kualitas Tidur pada Ibu Hamil

Trimester II dan III di Puskesmas Kema Minahasa Utara. *Jurnal Kedokteran Komunitas Dan Tropik*, 441–448.
10. Nurfazriah, I., & Fitriani, A. (2021). Pengaruh Senam Hamil Terhadap Kualitas Tidur Ibu Hamil Trimester III. *Prosiding Seminar Nasional Kesehatan*, *1*, 1531–1535.
11. Purba, R. . (2018). *Pengaruh Senam Hamil Terhadap Kualitas Tidur Ibu Hamil Trimester III di Mommies Clinic Surakarta*. Universitas Muhammadiyah Surakarta.
12. Putri, M., & Nur, H. (2021). Pengaruh Prenatal Yoga Dengan Kualitas Tidur Ibu Hamil Trimester Iii Di Uptd Puskesmas Aek Loba Tahun 2021. *JIDAN: Jurnal Ilmiah Kebidanan*, *1*(2), 61–71.
13. Septiana, M., Sapitri, A., & Novita, N. (2024). Pengaruh Senam Hamil Terhadap Kualitas Tidur Pada Ibu Hamil Trimester III. *Cendekia Medika: Jurnal Stikes Al-Maarif Baturaja*, *9*(1), 159–167.
14. Simanullang, E., Wirmayani, W., & Siahaan, P. Y. B. (2023). Pengaruh Senam Hamil Terhadap Kualitas Tidur Ibu Hamil Pada Usia Kehamilan Tm Iii Di Pmb Wrima Deli Serdang Tahun 2022. *JIDAN: Jurnal Ilmiah Kebidanan*, *3*(1), 33–38.
15. Yumna, Q. (2020). *Pengaruh Senam Hamil Terhadap Kualitas Tidur Ibu Hamil pada Usia Kehamilan 13 sampai 30 Minggu di Wilayah Kerja Puskesmas Batu dan Junrejo*. Universitas Islam Negeri Maulana Malik Ibrahim.
16. Yunanda, F., Lumbanraja, S., & Panjaitan, I. M. (2022). Perbedaan Kualitas Tidur Ibu Hamil Trimester III Sebelum Dan Setelah Melakukan Senam Hamil Di Desa Karang Anyar Kecamatan Langsa Baro Kota Langsa. *Miracle Journal*, *2*(1), 128–137.