

# **The Impact of Prenatal Yoga On Low Back Pain in Third Trimester Pregnancy: A Case Study**

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## **ABSTRACT**

Low back pain is one of the most prevalent and complex pain complaints worldwide, especially in Indonesia. In pregnant women, particularly in the second and third trimesters, low back discomfort is a frequent complaint. It is estimated that over 70% of pregnant women experience some sort of low back discomfort at some time throughout pregnancy, labor, and postpartum. This study was conducted to describe low back pain in pregnant women in the second and third trimesters. Midwifery care was provided in a continuity of care manner to a pregnant woman in her third trimester, through delivery, postpartum, neonatal care, and family planning, using the Varney's midwifery management process and SOAP documentation at Private Midwifery Practice of Nurmala Dewi, S.ST in Bandar Lampung in 2023. The research employed a descriptive design with a case study approach, conducted from February 16-23, 2023. The research subject was Mrs. K, a 17-year-old woman. The assessment format was used as the instrument, and informed consent was obtained from the subject to participate in the study. Continuity of midwifery care which includes yoga exercises at least twice a week with sessions of 30-60 minutes can reduce complaints of low back pain. Suggesting the mother to sleep on her left side and using a pillow as support to reduce pressure on the back can be an intervention combined with prenatal yoga suggestions.

**Keywords :** Prenatal yoga, Low back Pain, Third Trimester Pregnant Women

## INTRODUCTION

A pregnant woman undergoes several changes in anatomical and physiological during gestation period. It can damage the musculoskeletal system can create pain or discomfort in the lower back (Manyozo et al., 2019). According to the theory, back pain is one of the most prevalent discomforts encountered during pregnancy. This discomfort could be caused by pressure on the back muscles or spinal changes that put tension on the joints. The prevalence of back pain during pregnancy is also influenced by changes in body posture, weight increase, and ligament realignment. Increased body weight and changes in spinal physiology during pregnancy are major contributors to this discomfort (Oktavia et al., 2023).

Back pain was shown to be common among pregnant women. It is critical for stakeholders to pay closer attention to pregnancy problems, such as low back discomfort (Salari et al., 2023). Pregnant women in their second and third trimesters, as well as younger women, were found to have a higher risk of LBP. Many research have shown that higher gestational age and young women have an increased risk of getting LBP (Manyozo et al, 2019). A history of back discomfort during a prior pregnancy is similarly linked to the prevalence of low back pain (Rahayu, 2023).

Low back pain in the third trimester is caused by an enlarged uterus, leading to postural changes and a shift in the center of gravity forward. Low back pain slightly limits mother's activities of daily living, usually have troubles with basic activities of daily living such as walking, wearing clothes, standing up from chair, even when sitting down (Berber and Satilmism 2020; Anggasari, 2021). Although generally physiological, lower back pain can become pathological if not properly managed, leading to chronic lower back pain, increased postpartum low back pain, and long-term back pain that is more difficult to treat. Low back pain in pregnant women in various regions in Indonesia reaches 60-80% of the incidence. One effort made to overcome this is by doing prenatal yoga (Fransia et al, 2022).

Prenatal yoga, or yoga exercise during pregnancy, is a specialized form of Hatha yoga adapted for the needs of expectant mothers. It aims to support women in preparing physically, mentally, and spiritually for childbirth. With careful preparation, mothers can gain confidence for a smoother and more comfortable delivery (Yoo et al., 2015). Research has shown that

practicing prenatal yoga can assist women with anxiety, depression, stress, lower back pain, and sleep disturbances (Babbar and Shyken, 2016).

Regular exercise during pregnancy including yoga, result in better outcomes related to the course of pregnancy. Research shows that pregnant women should maintain physical activity and be willing to spend time participating in exercise programs such as yoga. Sports activities of this kind must be accompanied, preferably with the assistance of skilled personnel. Regular exercises like pregnancy yoga reduce the overall discomfort experienced by pregnant women, including lower back pain during pregnancy. These findings explain that yoga can improve body posture and strengthen back and abdominal muscles, thereby reducing back pain (Wadhwa et al., 2020). Pregnant women who exercise can reduce changes and pain during pregnancy. This will help to alleviate back pain and help the body carry the extra weight when pregnant. Pregnant women can decrease muscle stress caused by pregnancy, develop flexibility and muscle strength, and train the endurance and strength required for an easier and shorter labor (Yekefallah et al., 2021).

Low back pain is the most commonly reported physical discomfort among pregnant women in their third trimester, affecting more than two-thirds. Yoga has grown in popularity as a pain-relieving practice. According to Fatriani (2023), more than half of the pregnant women in Bandar Lampung (55.6%) have adequate knowledge of prenatal yoga. In the third trimester, 46.7% of pregnant women experienced reduced knowledge-related physical discomfort. This condition can also be related to the pain tolerance ability of pregnant women which can be different for each individual. A midwife should explain to pregnant women the discomforts that may arise due to physiological changes during pregnancy. Low back pain, shortness of breath, frequent urination, difficulty sleeping, cramps, edema, varicose veins, and fatigue are among the most common pregnancy discomforts (Astuti, 2017).

Conducting a prenatal yoga to reduce back pain in pregnancy is feasible and safe. Several studies have found significant reductions in symptom severity over a 12-week period, supporting the idea that yoga helps improve pregnant women's comfort (Holden et al., 2019). These findings imply that yoga is a safe and useful strategy for expecting moms, but additional study is needed to offer more thorough information on the effectiveness and validity of yoga therapy during pregnancy (Jiang et al., 2015). Low back discomfort is

widespread among pregnant women, particularly in the third trimester, indicating the need for therapies to increase mother well-being.

## **METHOD**

This case study aimed to provide midwifery care for a pregnant woman with low back pain at a midwife's private practice in Bandar Lampung. The design used was descriptive with a case study approach. The case study was conducted from February 16-27, 2023. The subject was Mrs. K, a 17-year-old woman. Data was collected through interviews, observation, and direct care. The subject signed an informed consent form to participate in the study. The intervention used in this study was prenatal yoga to reduce low back pain in the third trimester.

## **RESULTS**

This study was conducted at the Private Midwifery Practice, located in Nurmala Dewi's Midwife Practice in Bandar Lampung City. On February 16, 2023, the researcher provided midwifery care to the client Mrs. K. The subjective data assessment on February 16, 2023, at 11:00 AM WIB during the ANC 1 visit described Mrs. K, G1P0A0, aged 17 years, of Javanese ethnicity, Muslim, with a junior high school education, and a housewife. Her husband, Mr. T, is 20 years old, of Javanese ethnicity, with a high school education, an entrepreneur, and also a Muslim, residing in Rajabasa, Bandar Lampung, Indonesia.

The client reported experiencing low back pain for the past week. The objective data assessment indicated that her general condition was good, her consciousness was compositus, her vital signs were within normal limits, and the examination revealed that the mother frequently complained of low back pain. To address this issue, the mother was provided with care, including informing her that low back discomfort during pregnancy is normal.

The care plan was developed based on the interpretation of the formulated data:

- 1) Explain to the mother that the examination results are normal.
- 2) Training the mother prenatal yoga, which aims to strengthen muscles, improve body balance, and relieve back pain.
- 3) Advise the mother to consume a balanced diet, including rice, vegetables, protein, and fruit, and reduce the intake of oily foods. Recommend that the mother eat vegetables,

particularly green leafy ones like spinach and katu, and encourage her to drink plenty of water.

- 4) Inform the mother to schedule a follow-up visit in one week or to seek healthcare services immediately if she experiences any complaints.

Table 1. Results of Midwifery Care Observation for Mrs. K

| No | Time                        | Data Collection   | Assessment                                  | Planning   |
|----|-----------------------------|---|---|--|
| 1  | ANC 1<br>(16 February 2023) | <p>Subjective Data:</p> <ol style="list-style-type: none"> <li>1. Mother wants to check her pregnancy.</li> <li>2. Mother reports back pain since a week ago.</li> </ol> <p>Objective Data:</p> <p>General condition: good, compos mentis, Vital signs: BP: 110/80 mmHg, R: 20x/minute, P: 80x/minute, T: 36.5°C</p>  | <p>Mrs. K G1P0A0<br/>GA 34 weeks 6 days</p> | <ol style="list-style-type: none"> <li>1. Teach the mother prenatal yoga to strengthen muscles, improve body balance, and relieve back pain</li> <li>2. Encourage the mother to practice prenatal yoga at least twice a week, with sessions 30-60 minutes</li> <li>3. Inform the mother to return for a follow-up visit on 23 February 2023 or to seek medical care if she experiences any complaints</li> </ol>   |
| 2  | ANC 2<br>(23 February 2023) | <p>Subjective Data:</p> <ol style="list-style-type: none"> <li>1. Mother wants to check her pregnancy</li> <li>2. The mother reported that the back pain after following the first ANC recommendation felt reduced</li> </ol> <p>Objective Data:</p> <p>General condition: good, compos mentis, Vital signs: BP: 110/80 mmHg, R: 20x/minute, P: 80x/minute, T: 36.5°C</p> | <p>Mrs. K G1P0A0<br/>GA 35 weeks 6 days</p> | <ol style="list-style-type: none"> <li>1. Encourage the mother to continue practicing prenatal yoga at least twice a week, with sessions 30-60 minutes</li> <li>2. Advise the mother to sleep on her left side, using a pillow for support to reduce pressure on her back</li> </ol>   |
| 3  | ANC 3<br>(03 March 2023)    | <p>Subjective Data:</p> <ol style="list-style-type: none"> <li>1. Mother wants to check her pregnancy</li> <li>2. Back pain is no longer felt</li> </ol> <p>Objective Data:</p> <p>General condition: good, compos mentis, Vital signs: BP: 120/80 mmHg, P: 80x/minute, R: 20x/minute, T: 36.5°C</p>  | <p>Mrs. K G1P0A0<br/>GA 37 weeks</p>        | <ol style="list-style-type: none"> <li>1. Motivate the mother to continue prenatal yoga to strengthen back and pelvic muscles</li> <li>2. Repeat advice on sleeping positions and using pillows for support</li> <li>3. Explain the warning signs of pregnancy, such as swelling of the entire body, fever, blurred vision, severe headaches, reduced fetal movement, and the importance of seeking immediate medical attention if any of these signs occur</li> </ol> |

## DISCUSSION

The author collected information for the evaluation from both objective and subjective sources. Client interviews provided the subjective data, and a comprehensive physical examination provided the objective data. Mrs. K's subjective data indicated that she frequently reported experiencing low back pain. To address the mother's issue, she was informed that low back discomfort during pregnancy is normal, as the growing uterus causes the low back and spine to be pulled, leading to muscle tension and resulting in low back pain. In order to resolve pain complaints from clients, a midwifery care plan was developed and carried out continuously along with ANC visits made by pregnant women.

On the first ANC visit, midwife taught the mother with a series of procedures prenatal yoga in order to relieve her low back pain. In this training session, pregnant women will learn evidence-based knowledge and practical strategies to improve maternal-fetal outcomes (Soucy et al., 2023). The mother was recommended to do prenatal yoga to help with her low back pain. Yoga provides "space" for the mother and baby to breathe easily, educates the pelvic floor muscles to become more elastic and stronger, and incorporates restorative postures and relaxation techniques that are beneficial during labor (Sindhu 2014).

Midwife recommended and encouraged the mother to practice prenatal yoga at least twice a week, with sessions 30-60 minutes. Pregnant women reported increased effectiveness before and after yoga with a frequency intervention of twice a week for two weeks. Pregnant women can experience the benefits of yoga as a supplemental therapy in a health facility. The effectiveness value prenatal yoga according to Syafitri et al. (2024) was 55% (Syafitri et al., 2024). Study reported by Kosayriah et al (2020) in Bondowoso, East Java, Indonesia, Yoga was practiced four times in two weeks, each session lasting one hour.

Yoga techniques are intended to treat back and waist discomfort. The yoga program consists of breathing exercises, warm-up exercises, side stretches, and a variety of positions. Relaxation techniques and movements that emphasize breath control are extremely effective during yoga practice and when cramps occur. Applying breathing techniques will make pregnant women more comfortable and overcome discomfort in the third trimester (Oktavia et al., 2023). Prenatal yoga has a considerable effect on pregnant women's low back pain scales

throughout the third trimester. Participating in prenatal yoga on a regular basis can help pregnant women reduce their low back pain (Anggasari, 2021).

On the second ANC visit, mother reported that the back pain felt reduced after following the first ANC recommendation. Midwife continued to advise the mother in practicing prenatal yoga at least twice a week, with sessions 30-60 minutes. In this visit, mother was recommended to sleep on her left side, using a pillow for support to reduce pressure on her back. Suggestions for pregnant women to adjust their sleeping position are informative for clients. According to Kumalasari et al. (2023), recommending mother to sleep on her left side, encouraging her to walk in the morning, advising against heavy household chores, and recommending that the mother avoid standing for long periods will decrease the intensity of low back pain experienced by respondents after prenatal yoga was done both at the first meeting to the fourth meeting.

In the third ANC visit, mother reported that back pain is no longer felt significantly. Midwife motivated the mother to continue prenatal yoga to strengthen back and pelvic muscles, as well as repeating advice on sleeping positions and using pillows for support. The combination of prenatal yoga and efforts to change to a better sleeping position are several ways to deal with low back pain in pregnant women. According to Dewi (2020), pregnant women choose a comfortable position and are advised to sleep on their left side will provide sufficient oxygen intake, thus creating comfort. Apart from that, pregnant women are asked to use pillows as a medium to support their backs.

According to Franisia et al. (2022), a study on the effects of prenatal yoga on back pain in third trimester pregnant women at the Depok Clinic found a significant difference in mean pain intensity before and after yoga. Prenatal yoga can help reduce the intensity of low back discomfort in third-trimester pregnant women. Purnamayanti and Utarini's (2020) study of pregnant women in Denpasar discovered that those who practiced prenatal yoga experienced minimal lumbopelvic pain in the third trimester. The majority of pregnant women (41.7%) reported spine discomfort ranging from the lumbar to above the sacrum. The result of study by Mustofa (2023) showed a significance of prenatal gentle yoga can reduce back pain intensity of pregnant women. The study explained that prenatal yoga is a movement that targets stiff, weak and untrained body parts to optimize mobility, strength and posture so that it has an impact on reducing pain.

The study was conducted by Oktavia et al. (2023) in the city of Surakarta in 2022. The Oswestry Disability Index (ODI) questionnaire, translated from English to Indonesian, was used to assess back pain in pregnant women in their third trimester. This is to assess impairment in low back pain, and it consists of ten questions with a score ranging from 0 to 100, including limits in exercise, sleep, social life, work, and personal care caused by low back pain. Prenatal yoga helped to reduce back discomfort in pregnant women in their third trimester. Prenatal yoga is recommended by researchers for pregnant women as a kind of physical activity. Prenatal yoga helps relieve back pain suffering by promoting proper posture and stretching the central nerve system of the spine. Prenatal yoga practice had a substantial effect on back pain reduction among pregnant women in the third trimester, according to the Faces Pain Scale-Revised questionnaire (FPS-R). Prenatal yoga was useful for reducing back pain among pregnant women in the third trimester and might be considered an appropriate strategy to assist pregnancy success (Rahayu, 2023).

Yoga is beneficial for relieving physical discomfort in pregnant women, especially during the third trimester. Prenatal yoga programs integrated into midwifery care, particularly through frequent attendance at prenatal classes at Public Health Centers, can assist pregnant women in managing discomfort during their pregnancy (Rafika, 2018). Prenatal yoga is also recommended to be carried out in private midwife practices. In addition to addressing low back pain issues, midwives should ensure continuity of care during pregnancy. ANC visits made by pregnant women at the midwife's Private practice are related to the completeness of the services provided, including the provision of facilities for carrying out prenatal yoga. Midwives need to pay attention to the availability of prenatal yoga to increase the number of ANC visits (Fatriani and Risneni, 2023). It is important to note in order to reach positive pregnancy, so that pregnant mothers becoming more pleasant during her pregnancy. Enjoying comfort while pregnant will improve the overall quality of life of pregnant women. Mother fills her days by maintaining positive relationships with her husband and family, as well as carrying out various social interactions with the surrounding community with a better sense of comfort during pregnancy.

## CONCLUSION

Continuity of midwifery care which includes yoga exercises at least twice a week with sessions of 30-60 minutes can reduce complaints of low back pain. Suggesting the mother to sleep on her left side and using a pillow as support to reduce pressure on the back can be an intervention combined with prenatal yoga suggestions.

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