

# NURSING INTERVENTION WITH PRENATAL YOGA IN MRS. A TO REDUCE LOW BACK PAIN IN THIRD-TRIMESTER PREGNANT WOMEN

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## ABSTRACT

**Introduction:** The third trimester marks the final three months of pregnancy, commencing from the 28th week and continuing until childbirth. One common discomfort experienced by pregnant women in their third trimester is low back pain. Low back pain that is not addressed during pregnancy can persist and intensify postpartum, potentially leading to chronic conditions that are more difficult to manage. One non-pharmacological therapy that can reduce low back pain is prenatal yoga. Prenatal yoga offers a holistic approach to pregnancy, improving physical fitness, reducing stress, and preparing the body for childbirth through exercises that strengthen the back, abdomen, and pelvic floor muscles. **Objective:** Implementing Nursing Care Through Prenatal Yoga Intervention to Reduce Lower Back Pain in Third-Trimester Pregnant Women in Sungai Kitano Village, Martapura Barat District. **Methods:** The research employed a case study of Mrs. A, a pregnant woman experiencing lower back pain. The intervention involved prenatal yoga therapy consisting of four 15-minute sessions. **Result:** Based on the assessment, the primary nursing diagnosis was acute pain. After four sessions of prenatal yoga therapy over two weeks, the patient's pain level decreased from a moderate level of 4 to a mild level of 2 on the pain scale. **Conclusion:** Prenatal yoga therapy can reduce low back pain in third-trimester pregnant women.

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**Keywords:** Low Back Pain, Pregnant Women, Third-Trimester, Prenatal Yoga

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## INTRODUCTION

Pregnancy is the fertilization of an ovum by a sperm, followed by implantation in the uterine lining (Fitriani, 2021). Pregnancy is a physiological process that changes the mother and her environment (Fitriah et al., 2018). Pregnancy is conventionally divided into three trimesters based on gestational age. The first trimester spans from 0 to 12 weeks, the second trimester from 12 to 28 weeks, and the third trimester from 28 to 40 weeks. Infants born during the third trimester are generally considered viable (Kasmiati et al., 2023).

The 2023 Indonesian Health Survey reported a total of 23,007 pregnant women nationwide. Within the province of South Kalimantan, the survey data indicated 297 recorded pregnancies (Kemenkes BKPK, 2023).

The third trimester marks the final three months of pregnancy, commencing from the 28th week and continuing until childbirth. Pregnant women in their third trimester often report various discomforts, such as lower back

pain, overall physical discomfort, sleep disturbances due to fetal movements, dyspnea, increased urinary frequency, constipation, and the development of varicose veins (Fitriani, 2021). Low back pain is a common complaint experienced in the lumbosacral area of the spine. During pregnancy, the growing uterus and associated weight gain cause the woman's center of gravity to shift. This shift, combined with hormonal changes that relax the ligaments, can lead to increased lower back stress and pain. The growing weight of the uterus is a primary contributor to these changes. Additional factors exacerbating lower back pain include excessive bending, prolonged standing without rest, and lifting heavy objects. These activities can be particularly taxing when a pregnant woman is already fatigued (Fitriani, 2021).

The prevalence of low back pain during pregnancy exceeds 50% in countries like the United States, Canada, Iceland, Korea, and Turkey. Non-Scandinavian countries, including

North America and Africa, have reported even higher prevalence rates, ranging from 21% to 89.9%. A significant proportion of pregnant women, ranging from 47% to 60%, report experiencing lower back pain between the fifth and seventh months of gestation. This discomfort is commonly exacerbated during nighttime hours and throughout the third trimester (Janah et al., 2023). The prevalence of back pain among pregnant women in various regions of Indonesia has reached as high as 60-80% (Anggraini & Ni'amah, 2023).

A range of non-pharmacological interventions can be employed to alleviate lower back pain during pregnancy. These include massage therapy, kinesio taping, aromatherapy with rose oil, acupressure, warm compresses, and prenatal exercises such as yoga. (Herfina, 2021). According to (Herfina, 2021) research, physical activity or exercise is the most effective therapy for reducing the severity of lower back pain

Prenatal yoga is a variation of traditional yoga adapted to accommodate the unique needs and physical changes experienced by pregnant women. The goal of prenatal yoga is to alleviate common discomforts during pregnancy and prepare expectant mothers physically, mentally, and spiritually for childbirth. Through thorough preparation, expectant mothers can gain the confidence and skills to experience a smoother and more comfortable childbirth (Wulandari & Andriyani, 2024).

Research has demonstrated that prenatal yoga can enhance bone and muscle health by improving structure and strength. Physiologically, yoga practices, including specific movements and breathing techniques, promote better blood circulation, facilitate nutrient uptake, and aid in the body's detoxification process. From a psychological perspective, yoga contributes to improved concentration, focus, and emotional well-being, leading to greater fulfillment (Wulandari & Andriyani, 2024).

Based on the background explanation above and the cases encountered, the researcher intends to examine the effect of prenatal yoga in alleviating back pain in pregnant women during the third trimester in Sungai Kitano Village, Martapura Timur District.

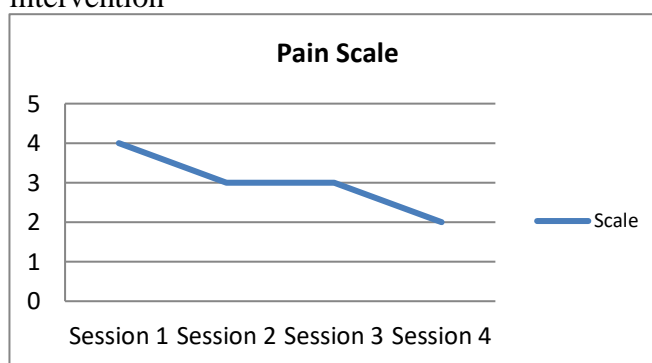
## METHODS

This study uses a case study approach in the provision of nursing care, aiming to assess the difference before and after the intervention of Prenatal Yoga in reducing lower back pain in pregnant women during the third trimester, using the Numerical Rating Scale (NRS) and Visual Analog Scale (VAS) to measure the level of pain. The researcher conducted the intervention in 4 sessions over 2 weeks, each lasting 15 minutes, with the respondents.

## RESULTS AND DISCUSSION

Pain scale before and after the intervention.

Image 1. Pain scale before and after the intervention



Based on Image 1, after conducting prenatal yoga for 4 sessions over 2 weeks, there was a reduction in the lower back pain scale in pregnant women during the third trimester. This is in line with the study of Rahmawati et al. (2021), which found a significant reduction in lower back pain.

Low back pain is experienced in the lumbosacral spine. During pregnancy, abdominal distension, an anterior shift of the center of gravity, and reduced abdominal muscle tone place increased stress on the spine. These changes necessitate spinal adaptation. As mobility decreases, the ligaments and muscles of the mid and lower spine bear a heavier load, resulting in muscle tension in the back (Simanjuntak, 2022).

Several factors influence lower back pain, including gestational age. It usually starts around 27 weeks, supported by reports of 20-28 weeks as the initial period where pain occurs. (Bryndal et al., 2020). Multiparity is associated with an increased risk of low back pain. The repeated stress of multiple pregnancies can result in muscle fatigue and insufficiency, compromising the ability of the musculature to adequately support the gravid uterus (Fithriyah

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et al., 2020). The onset of low back pain commonly occurs between the ages of 20 and 24 in women, with the severity often reaching its peak after age 40 (Sukeksi et al., 2018). Daily activities can exacerbate lower back pain in pregnant women, limiting their ability to engage in routine activities like personal hygiene, ambulation, sitting, and sexual intercourse. (Manyozo et al., 2019).

Mrs. A's lower back pain is influenced by multiple factors, including her advanced pregnancy at 34 weeks, her age of 30 years, and the physical demands of her daily household activities.

The reduction in lower back pain among pregnant women can be attributed to the specific movements and postures practiced in prenatal yoga. The practice of centering and pranayama enables pregnant women to cultivate a state of mindfulness and regulate their breathing, facilitating optimal oxygenation for maternal and fetal tissues. Prenatal yoga practice has been demonstrated to induce a reduction in cortisol levels, thereby promoting relaxation and reducing pain perception through modulation of the stress response. (Rejeki, 2019).

The mechanism underlying the analgesic effects of prenatal yoga involves the stimulation of endorphin release through the performance of specific yoga postures and movements. The Endogenous Opiate Theory posits that the human body possesses the capacity to synthesize endogenous opioid peptides, referred to as endorphins. Endorphins influence the transmission of nociceptive impulses, thereby modulating pain perception. Endorphins are hypothesized to function as neurotransmitters and neuromodulators, exerting an inhibitory effect on transmitting nociceptive signals. Endorphins induce analgesia via binding to opioid receptors situated on both pre- and post-synaptic neuronal elements, with a predominant inhibitory impact on neurotransmitter release at the pre-synaptic level. This interaction, upon binding, results in the inhibition of tachykinin, particularly substance P, release, thereby attenuating nociceptive transmission (Sidemen, 2016).

The implementation of warm-up exercises, such as Sukhasana, coupled with stretching and stabilization exercises, has been shown to reduce the severity of lower back pain in pregnant women. These movements facilitate

muscle relaxation, increasing flexibility and muscle and joint mobility. Stretching exercises facilitate increased muscle extensibility and joint range of motion, which can help prevent injuries and improve overall physical function. Regular prenatal yoga can help pregnant women maintain good posture, which is essential for overall comfort and well-being. The gentle stretching of muscles, joints, and the spine promotes flexibility and can alleviate common discomforts associated with pregnancy. Specific prenatal yoga postures, including the cow and cat pose, child's pose, and downward dog, promote spinal flexibility and muscle lengthening, which can alleviate lower back discomfort. (Cahyani, et al., 2020).

Regular relaxation practices such as meditation or deep breathing can significantly improve overall well-being by reducing stress, promoting relaxation, and stimulating the release of endorphins, which can alleviate both physical and emotional pain. Endorphins, endogenous opioid peptides produced by the human body, serve as natural analgesics. These can be stimulated through meditation, deep breathing, consumption of spicy foods, or therapeutic interventions like acupuncture and chiropractic adjustments. Elevated endorphin levels inhibit pain receptor activation, thereby preventing the transmission of pain signals to the spinal cord and subsequent interpretation of pain in the cerebral cortex (Suananda, 2017).

Prenatal yoga is a valuable tool for pregnant women, offering a range of benefits beyond physical conditioning. By reducing common discomforts such as back pain, improving flexibility, and promoting relaxation, prenatal yoga can enhance expectant mothers' physical and mental well-being (Holden, 2019).

## CONCLUSION

The nursing implementation for Mrs. A involves applying prenatal yoga, conducted over 4 sessions within 2 weeks, with a minimum frequency of once a day, to reduce lower back pain in a third-trimester pregnant woman. The evaluation results during the prenatal yoga intervention showed that the respondent reported a gradual reduction in pain after each session, with a pain scale of 2 at the final session. The results demonstrate that prenatal yoga can significantly decrease the scale of

lower back pain experienced by pregnant women during their third trimester.

While this study demonstrates the effectiveness of prenatal yoga in reducing lower back pain during pregnancy, further research is warranted to explore optimal treatment protocols. Future studies could investigate the impact of varying session frequencies, durations, and intensities, as well as the potential benefits of combining prenatal yoga with other complementary therapies such as massage or warm compress.

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