

Optimizing the Prenatal Yoga Community for Lower Back Pain Relief

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Article Info	Abstract
<i>Article History</i> <i>Submitted,</i> <i>Accepted,</i> <i>Published,</i>	<i>Improper posture during pregnancy forces additional stretching and fatigue on the body, especially the spine, leading to back pain. This pain can interfere with a mother's activities. Prenatal yoga is a self-help method that can reduce discomfort during pregnancy. Prenatal yoga combines complex activities involving stretching, movement, meditation, breathing, endurance, balance, and appreciation. This activity aims to help pregnant women understand and independently practice prenatal yoga at home to address their lower back pain. The methods used include presentation, discussion, demonstration, re-demonstration, and mentoring. Results showed a decrease in lower back pain in 80% of pregnant women; 70% of pregnant women's ability to practice breathing and concentration; 60% of pregnant women's ability to do prenatal yoga movements to overcome lower back pain; Only 40% of pregnant women are able to arrange a prenatal yoga series to overcome lower back pain.</i>
<i>Keywords:</i> <i>pregnant women;</i> <i>pregnancy; lower back pain; prenatal yoga</i>	

Introduction

Pregnancy causes physical and psychological changes in pregnant women. These changes often cause discomfort, which varies with each trimester. As the fetus grows, the mother experiences increasing physical discomfort, which can interfere with daily activities. Furthermore, pregnancy causes various changes throughout the body, affecting the cardiovascular, respiratory, hormonal, gastrointestinal, and musculoskeletal systems (Arummega et al., 2022; Tyastuti, 2016). Low back pain (LBP) is a musculoskeletal disorder caused by poor physical activity (Furlan et al., 2015). Low back pain can affect anyone, regardless of age, gender, or sex. Most low back pain is caused by weak back muscles, which can lead to muscle strain, characterized by pain when performing incorrect movements or remaining in a certain position for a long time (Fauziah Fatmawati et al., 2017).

The biomechanical causes of low back pain (LBP) are due to a forward shift in the center of gravity, which increases knee hyperextension and pelvic instability. These changes increase pressure on the lumbar vertebrae and paraspinal muscles. Gravitational pressure from the uterus on large vessels reduces blood flow to the spine and causes back pain, especially in late pregnancy (Putih & Nuraeni, 2017). The enlarging uterus and increased body weight cause muscles to work harder, which can put pressure on muscles and joints (Tyastuti, 2016). One of the causes of lower back pain is hormonal changes that cause changes in the soft supporting and connecting tissues, resulting in decreased muscle

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elasticity and flexibility, making the muscles stiffer and more easily tense. During pregnancy, relaxation of the joints around the pelvis and lower back of pregnant women is likely due to hormonal changes. Along with the gradual increase in weight during pregnancy and the redistribution of central body weight, there are hormonal influences on muscle structure that occur during pregnancy.

Both of these factors result in changes in posture in pregnant women. Changes in the musculoskeletal system occur as pregnancy progresses. These musculoskeletal adaptations include: increased weight, a shift in the center of gravity due to the enlarging uterus, relaxation, and mobility. Sacroiliac joint instability and increased lumbar lordosis, which cause pain, are more likely. This indicates a tendency for muscles to shorten when the abdominal muscles are stretched, which can cause muscle imbalances around the pelvis and lower back, and additional tension can be felt over these ligaments. This results in back pain, usually originating from the sacroiliac or lumbar, and can become a long-term back disorder if muscle balance and pelvic stability are not restored after delivery and postpartum. It is estimated that approximately 50% of pregnant women complain of some type of back pain at some point in pregnancy or during the postpartum period (Carvalho et al., 2017).

The negative impacts of lower back pain include a negative impact on the quality of life of pregnant women because it disrupts daily physical activities, reduces sleep quality, can continue until postpartum, and can have a negative impact on the psychology of pregnant women, so that they must receive treatment. Daily activities will be disrupted if a pregnant woman experiences lower back pain. If this complaint is not addressed promptly, it can cause long-term pain, and the mother may continue to experience lower back pain after delivery. Therefore, this complaint in pregnant women requires the attention of healthcare professionals to provide appropriate and adequate care (Dewi et al., 2018). Prenatal yoga is a mental skill, a technique for developing the overall personality and preparing pregnant women physically, psychologically, and spiritually (Amalia et al., 2025). Pregnant women are considered physically ready if they are less tired or weak, have increased flexibility and endurance, and experience reduced back pain. Prenatal yoga is a safe and effective exercise that helps pregnant women reduce anxiety and lower back pain (Qinxian Jiang et al., 2015).

Research conducted by community service providers on lower back pain in 2023 indicated that 70% of pregnant women in Karangtengah Village experienced moderate pain, 5% experienced severe, controlled pain, and 25% experienced mild pain. This discomfort disrupts mothers' daily activities. Prenatal yoga relaxes the body and stretches muscles, improving blood circulation and producing endorphins. Endorphins are the best pain relievers because they are natural hormones produced by the human body. Various movements, including the *bilikasana* pose, strengthen and stretch the back muscles, reduce pressure on the growing fetus, relieve back pain, strengthen muscles, and increase pelvic sensitivity. *Janushirsasana* helps stretch the lower back muscles. *Parsvakonasana* stretches the side muscles and helps relieve back pain. *Prasarita Padottanasana* releases tension in the lower back, relieves back pain, improves blood circulation, and strengthens and stretches the inner thigh and pelvic floor muscles (Amalia et al., 2023).

Efforts undertaken by Karangtengah Village midwives include educating pregnant women on how to manage back pain through stretches taught in prenatal classes. This community service activity aims to provide pregnant women with additional skills to manage lower back pain through prenatal yoga. Prenatal yoga is given to healthy pregnant women without complications such as bleeding, premature rupture of membranes, increased blood pressure, sharp pain in the muscles, braxton hicks, edema.

Method

The methods for implementing community service activities include counseling, training, practice, mentoring, and the formation of a prenatal yoga community.

The community service activity "Optimizing a Prenatal Yoga Community Free of Lower Back Pain" was held in Karangtengah Village, Baturraden District, Banyumas Regency. This activity teaches pregnant women how to overcome the discomfort of lower back pain through prenatal yoga exercises. This activity involved 20 pregnant women in their third trimester. This activity is necessary to improve knowledge and skills for pregnant women. Village midwives can organize classes for pregnant women and establish a prenatal yoga community free of lower back pain complaints. The stages of this community service activity include the preparation, implementation, and evaluation stages. Preparation for this community service activity begins with identifying problems in the field/on the land; preparing permits; coordinating with the Baturraden II Health Center, Baturraden District, and Karangtengah Village; conducting an exploration of the activity location; recording targets; preparing an activity schedule; creating a training plan, formation and mentoring; preparing training media/modules, preparing yoga mats and blocks; and compiling an evaluation checklist.

The implementation of the community service activity "Optimizing the Prenatal Yoga Community Free from Complaints of Lower Back Pain" was carried out 4 times, with a frequency of 1 time per week. This activity began with the presentation of material on recognizing the discomfort of lower back pain during pregnancy and how to overcome it, and introducing prenatal yoga, practicing prenatal yoga movements in reducing complaints of lower back pain, compiling a prenatal yoga sequence for daily life, and forming a complaint-free Prenatal Yoga Community, which this community will then practice independently. The form of evaluation carried out was a post-test, and a process evaluation was conducted. Evaluation using a post-test instrument was carried out on pregnant women. Before and after the training, measurements were taken to assess lower back pain during pregnancy. Furthermore, a process evaluation was conducted, which involved assessing the implementation of the training. For the training, the team conducted a process evaluation by observing participants' responses, attitudes, and abilities throughout the training.

Results and Discussion

This community service activity is a collaborative activity with the Karangtengah Village Government, which has the largest number of pregnant women in Baturraden District, and actively conducts pregnancy classes by involving the cooperation of village midwives and the participation of pregnant women as related parties, so that it can increase knowledge and increase the skills of pregnant women in dealing with the discomfort of lower back pain during pregnancy. Community service activities can be seen in.



Picture 1. Activity for presenting material on lower back pain and how to overcome it

Picture 1 shows the presentation of the material, which began with an introduction from the community service team, consisting of five midwifery lecturers and five midwifery students. The community service team presented material on the discomfort of lower back pain experienced by pregnant women in their third trimester and how to overcome it. To

determine the complaints experienced by the pregnant women, the community service team distributed questionnaires. Throughout the activity, the pregnant women were very enthusiastic about listening to the material and practicing it directly.



Picture 2. Prenatal Yoga Practices to Relieve Lower Back Pain

Picture 2 shows prenatal yoga practice after the pregnant woman understands the concept of how to manage lower back pain during pregnancy. The training is conducted face-to-face and interactively, allowing the pregnant woman to easily understand and directly observe and practice prenatal yoga. The prenatal yoga session begins with a warm-up, breathing exercises, yoga poses, and concludes with relaxation.

Table 1 Distribution of Back Pain Levels in Pregnant Women in the Third Trimester

Discomfort	Before		After	
	f	%	f	%
Lower Back Pain Levels				
No Pain	-	-	1	5 %
Mild Pain	6	30 %	13	65 %
Moderate Pain	12	60 %	6	30 %
Severe Pain Under Control	2	10 %	-	-
Total	20	100%	20	100%

Table 2 Distribution of Scores of Changes in Lower Back Pain Complaints in Pregnant Women in the Third Trimester

Lower Back Pain	f	Percentage
Down	16	80 %
Still	4	20 %
Go on	0	0 %
Amount	20	100 %

Table 3 Results of Pregnant Women's Ability to Practice Prenatal Yoga (20 mothers)

Ability	f	%
Breathing & concentration	14	70%
Relieving lower back pain	12	60%
Sequence compilation	8	40%

Table 1 shows the level of lower back pain before participating in prenatal yoga. The majority of pregnant women reported moderate pain (60%). After participating in prenatal yoga to address lower back pain, the majority of pregnant women reported mild pain (65%), and 5% reported no pain. Table 2 shows that 80% of pregnant women experienced a decrease in back pain. Low back pain is the most common complaint experienced by pregnant women, including the most common musculoskeletal problem during pregnancy, with a prevalence of 30% to 78% in the United States, Europe, and parts of Africa. Most experience severe pain, often limiting pregnant women's activities. This is associated with a poor quality of life, thus reducing pregnant women's productivity in daily life (Manyozo, 2019). The etiology of low back pain in pregnancy has not been fully elucidated, but it is often thought to originate from mechanical factors, hormonal factors, or body changes during pregnancy, such as reduction of the plantar arch, knee hyperextension, and pelvic anteversion. These changes put pressure on the lumbar lordosis, resulting in tension in the paraspinal muscles. Pressure on large blood vessels due to pregnancy can reduce blood flow to the spine and cause low back pain, especially in late pregnancy. Ligament weakness due to the hormone relaxin makes the lumbar spine and hip joints less stable, making them more susceptible to pain (Carvalho et al., 2017; Omoke et al., 2021).

Before the community service activity on prenatal yoga, the majority of pregnant women (60%) experienced moderate pain. This is consistent with a previous study that found that 73.3% of pregnant women in their third trimester used the VAS scale to describe moderate pain. This refers to the tendency of the abdominal muscles to contract when stretched, causing muscle imbalances around the pelvis and lower back, which can lead to excessive tension in the ligaments. This originates in the sacroiliac or lumbar region and can lead to long-term back problems if muscle balance and pelvic stability are not restored after delivery (Purnamasari & Widyawati, 2019).

After participating in prenatal yoga, the pain experienced by most pregnant women decreased, with the majority experiencing mild pain (65%). The greatest reduction in pain intensity was observed after prenatal yoga, meaning the mothers' pain decreased and their ability to perform daily activities improved. This is consistent with previous studies showing that pregnant women can participate in exercise, specifically prenatal gymnastics and prenatal yoga. These exercises aim to train the pregnant woman's physical condition. Regular physical exercise helps release endorphins and enkephalins, which are beneficial in inhibiting pain stimuli caused by the symptoms (Hidayati, 2019). Physical activity and yoga interventions have significant potential to reduce low back pain symptoms in pregnant women. Healthcare providers should recommend non-pharmacological treatment options, as they may be beneficial for pregnant women (Kinser et al., 2017).

According to a Canadian study, low back pain can interfere with daily activities. More than 50% of pregnant women experience emotional distress, reduced quality of life, and prolonged leave during pregnancy. Moderate exercise is an inexpensive, self-help strategy for pregnant women to reduce the severity of back pain during pregnancy (Davenport et al., 2019). Prenatal yoga is an alternative exercise option for pregnant women to improve joint flexibility. Studies have shown differences in lower back pain levels before and after participating in prenatal yoga. This is consistent with the theory that prenatal yoga offers benefits, including relief of back and waist pain, sciatica, constipation, urinary tract weakness, joint aches and swelling, accelerated physical recovery, and relief of postpartum depression (Amalia et al., 2025). Previous studies have shown that exercise has a significant effect on lower back pain in pregnant women. However, some side effects are unavoidable.

While lower back pain may not be permanently cured, it can usually be reduced. One recommended therapy is pregnancy yoga (Kandru et al., 2023).

This is consistent with a previous study of 30 pregnant women in Lampung who practiced prenatal yoga, which showed that prenatal yoga was effective in reducing lower back pain (Fauziah et al., 2020). Prenatal yoga is a form of exercise that includes physical postures, breath control, and meditation adapted for pregnant women (no inversions, deep twists, or prone lying). The movements practiced are modified and safe for both the mother and her fetus (Green et al., 2022). This is consistent with a previous study that stated that before prenatal yoga, of 30 pregnant women, 63.3% experienced severe pain, 33.3% moderate pain, and 3.3% mild pain. For three months, every two weeks, the pregnant women were given a 60-minute yoga intervention. After the intervention, complaints of lower back pain decreased. This was indicated by the results of 56.7% experiencing mild pain and 43.3% experiencing no pain (Makmun et al., 2022). Previous studies in China showed that prenatal yoga had the effect of reducing complaints of physiological discomfort, labor self-efficacy, and labor output (Rong et al., 2021).

Table 3 shows the results of measurements, showing that 70% of pregnant women were able to perform breathing and mindfulness exercises. In pregnancy yoga, breathing serves as a bridge of communication between the expectant mother and her unborn child, as well as a means of self-control, maintaining awareness during labor, and renewing the body's energy. In other words, all yoga breathing techniques can be used to balance mental activity and help alleviate discomfort during pregnancy. Pregnant women often experience discomfort, including lower back pain. Prenatal yoga includes teaching how to manage this discomfort. The movements are tailored to individual needs. This series of yoga poses has been modified and, when practiced regularly, can condition the body to become stronger, more robust, yet supple and flexible. During this community service program, 60% of pregnant women were able to overcome the discomfort they felt with several prenatal yoga poses. A prenatal yoga sequence is a daily yoga practice pregnant women can do, tailored to their trimester. The prenatal yoga sequence is very helpful in helping pregnant women achieve several beneficial poses. However, an evaluation conducted by the community service team found that only 40% of mothers were able to do it. This is because each individual absorbs information differently, and some poses and movements in prenatal yoga are unfamiliar or difficult to memorize, along with their benefits.

The analysis of the devotees showed a significant reduction in lower back pain after prenatal yoga. Lower back pain levels improved after prenatal yoga. Because the body is more relaxed and muscles are stretched, blood circulation is good, and the body produces endorphins. Endorphins are the best pain relievers because they are natural hormones produced by the human body. Prenatal yoga is designed for pregnant women, so the movements provided are expected to be beneficial for pregnant women. Various movements include the bilikasana/cat and cow pose/cat stretching posture. This movement strengthens and stretches the back muscles, reduces pressure on the growing and developing fetus, relieves back pain, strengthens muscles, and increases pelvic sensitivity. Another yoga movement, janushirsasana, is useful for stretching the lower back muscles. Parsvakonasana is a continuation of the virabhadrasana posture, which is useful for stretching the side muscles and helping to overcome back pain. Another yoga pose, prasarita padottanasana, or pyramid pose, is beneficial for releasing tension in the lower back, alleviating back and hip pain, improving blood circulation, and strengthening and relaxing the muscles of the inner thighs and pelvic floor. Regular prenatal yoga practice will have a positive impact on the health of pregnant women.

Conclusion and Suggestions

The achievement of community service activities was obtained by 80% of the level of lower back pain in pregnant women decreased; 70% of pregnant women's ability to practice breathing and concentration; 60% of pregnant women's ability to perform prenatal yoga

movements to overcome lower back pain; Only 40% of pregnant women were able to arrange a series of prenatal yoga to overcome lower back pain. From these results, the problem of lower back pain complaints in pregnant women was resolved with prenatal yoga techniques. This activity is useful for pregnant women to practice prenatal yoga movements themselves at home to overcome complaints of lower back pain. The recommendation for the next activity is to provide video media so that pregnant women can more easily remember some prenatal yoga movements when practicing them at home.

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