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Back pain: A challenge during the childbearing period

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Abstract

Back pain is one of the most common musculoskeletal complaints during the childbearing period, which includes pregnancy, labor, and the postpartum phase. It significantly affects maternal comfort, mobility, occupational performance, and overall quality of life. Pregnancy-related back pain primarily results from hormonal changes, mechanical stress due to weight gain, postural alterations, abdominal muscle separation, and pelvic joint instability. Globally, the prevalence ranges from 40% to over 75%, with increasing severity as gestational age advances. Risk factors include prior history of back pain, multiparity, younger maternal age, and higher pre-pregnancy body mass index.

Back pain during pregnancy presents in various forms such as lumbar pain, pelvic girdle pain, sacroiliac joint pain, sciatica, and coccygeal pain. Clinical manifestations include dull or sharp pain in the lower back, radiating discomfort to the buttocks or legs, stiffness, sleep disturbance, and activity limitation. Although primarily a clinical diagnosis, careful assessment is essential to rule out serious conditions.

Management focuses mainly on non-pharmacological interventions including postural correction, exercise therapy, physiotherapy, support devices, and lifestyle modification. Pharmacological treatment, when required, is limited to safe analgesics under medical supervision. Nurses and midwives play a pivotal role in early assessment, health education, exercise promotion, psychological support, and postpartum guidance. Early identification and multidisciplinary management are essential to prevent chronicity and improve maternal health outcomes.

Introduction

The childbearing period includes pregnancy, childbirth, and the postpartum stage, forming a continuous process that directly affects the health and well-being of both mother and newborn. Throughout this time, women experience extensive physiological, hormonal, emotional, and social changes that prepare the body for fetal growth, delivery, and recovery after birth. A comprehensive understanding of these phases is crucial for healthcare professionals to deliver effective, evidence-based maternal care and to minimize maternal and neonatal complications.

Childbearing is both a biological and social milestone in a woman's life. It involves progressive adaptations that support fetal development, enable safe delivery, and facilitate maternal restoration during the postnatal period. Maternal health research consistently highlights the need for integrated and continuous care across pregnancy, labor, and the postpartum phase to enhance health outcomes and reduce the risk of morbidity and mortality.

Challenges During Pregnancy

Pregnancy involves significant physical, hormonal, emotional, and metabolic changes necessary for fetal growth and preparation for childbirth. These adaptations often result in common discomforts such as nausea, vomiting, headache, back pain, heartburn, constipation, leg cramps, edema, and urinary frequency. Major physiological changes occur across cardiovascular, respiratory, renal, gastrointestinal, hematological, and metabolic systems, including increased blood volume and cardiac output, hypercoagulability, altered lung capacity, increased renal filtration, delayed gastric emptying, and reduced insulin sensitivity. While these changes are largely normal, they may affect a woman's comfort and quality of life, highlighting the importance of proper antenatal care, balanced nutrition, regular screening, and health education.

Challenges During Labor

Labor, particularly when medically induced, can present both physical and emotional challenges. Women undergoing induction may experience pain, discomfort from repeated examinations, anxiety, and feelings of reduced autonomy, especially when communication is inadequate. Birth experiences are strongly influenced by the quality of care, including respectful communication, emotional support, and involvement in decision-making. Although medical indications often guide induction, limited participation in decisions may negatively affect women's satisfaction. Positive labor experiences are more likely when women feel informed, supported, and respected by healthcare providers.

Challenges During Postpartum

The postpartum period is frequently associated with persistent physical and psychological health issues. Common problems include back pain, dyspareunia, urinary and anal incontinence, perineal pain, anxiety, and depression, which can continue for months or years after childbirth. Despite their prevalence, many of these conditions remain under-recognized and inadequately managed. These challenges can significantly impact a woman's physical comfort, emotional wellbeing, and quality of life. Comprehensive, respectful, and continuous maternal care beyond childbirth is essential to address long-term health needs and promote overall wellbeing.

Why back pain is most common problem

Low back pain (LBP) during pregnancy is common, affecting nearly 50% of women during pregnancy or the postpartum period. Although widely studied, its exact cause remains unclear. Mechanical factors play a major role: weight gain, abdominal enlargement, and forward shift of the center of gravity increase strain on the lumbar spine. Postural adaptations such as increased lumbar lordosis, stretching of abdominal muscles, reduced core stability, gluteus medius weakness,

and increased axial loading on intervertebral discs further contribute to discomfort.

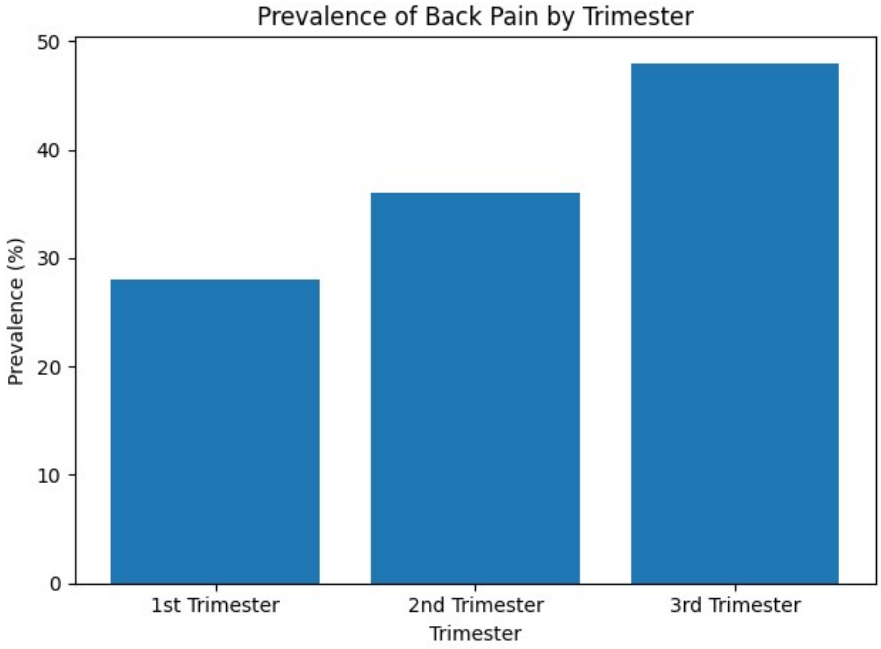
However, mechanical explanations alone are insufficient, especially when LBP occurs in the first trimester. Hormonal influences, particularly elevated relaxin levels, may increase ligament laxity and pelvic instability, though evidence regarding its direct association with pain severity is inconsistent.

LBP is a significant public health concern and one of the leading causes of activity limitation, frequent medical consultations, and surgical interventions. Women who experience severe LBP during pregnancy are at high risk of recurrence in subsequent pregnancies and later life. The condition can substantially impair occupational performance and daily activities, negatively affecting overall quality of life.

Epidemiology of back pain

A 2023 meta-analysis reported a global prevalence of 40.5% for pregnancy-related back pain, while recent studies show higher rates, sometimes exceeding 75%. The prevalence increases with gestational age, from about 28% in the first trimester to nearly 48% in the third trimester, with some late-pregnancy reports above 80%. Most cases involve low back pain or pelvic girdle pain, and 20–30% of women experience severe symptoms.

Postpartum, 15–21% of women report back pain within six months, and many continue to have symptoms beyond delivery, with around 20% experiencing persistent pain after one year. Prevalence varies by region, highlighting the global burden and the need for early identification and management.



Risk group

A prior history of back pain is the strongest risk factor, doubling the likelihood of recurrence during pregnancy, with reported prevalence reaching up to 85% among women who had pain in a previous pregnancy.

Multigravida women show higher rates (72%–76%) compared to first-time mothers.

Younger women under 25 years demonstrate prevalence rates between 72% and 90%, whereas women over 40 years report lower rates, around 45%.

Women with a pre-pregnancy BMI above 28 have a prevalence of approximately 71%, and obesity increases the risk by more than three times.

Causes of back pain during childbearing period

1. Hormonal Changes

Increased levels of the hormone relaxin loosen the ligaments and joints of the pelvis to prepare for childbirth. This joint laxity reduces spinal stability and leads to back pain.

2. Weight Gain

Normal pregnancy weight gain increases mechanical stress on the lumbar spine and pelvic joints.

3. Postural Changes

As the uterus enlarges, the center of gravity shifts forward. This causes increased lumbar lordosis (inward curve of the lower back), leading to muscle strain.

4. Muscle Separation

Stretching and separation of abdominal muscles reduce core support for the spine.

5. Pelvic joint stress

Increased pressure on the sacroiliac joints and pubic symphysis causes pelvic girdle pain.

6. Multiparity

Women who have had multiple pregnancies may experience weakened abdominal and pelvic muscles.

Emotional stress increases muscle tension, contributing to back discomfort.

Types of back pain in pregnancy

1. Lower Back Pain (Lumbar Pain)

Pain felt in the lower part of the back. It is similar to normal back pain. It becomes worse when standing or sitting for a long time.

2. Pelvic Back Pain (Posterior Pelvic Pain)

This is the most common type. Pain is felt deep in the buttocks or near the hips. It may spread to the back of the thighs. It increases while walking, climbing stairs, or turning in bed.

3. Sacroiliac Joint Pain

Pain occurs on one or both sides of the lower back. It happens because pregnancy hormones make the pelvic joints loose.

4. Sciatic Pain (Sciatica)

Sharp pain that starts in the lower back and moves down the leg. It happens when the sciatic nerve gets irritated.

5. Tailbone Pain (Coccyx Pain)

Pain at the bottom of the spine. It usually increases while sitting.

Clinical features

1. Location of Pain

- Pain in the lower back (lumbar region)
- Pain in the buttocks or pelvic area
- Sometimes pain spreads to the thighs or legs

2. Nature of Pain

- Dull, aching pain
- Sharp or stabbing pain (in sciatica)
- Continuous or intermittent

3. Radiating Pain

- Pain may move from the lower back to the buttocks and down the leg

1. Aggravating Factors

- Prolonged standing or sitting
- Walking long distances

- Climbing stairs
- Turning in bed
- Lifting objects

2. Relieving Factors

- Rest
- Changing posture
- Gentle exercise
- Support belts

3. Associated Symptoms

- Muscle stiffness
- Tenderness over lower back or pelvic joints
- Difficulty in walking
- Disturbed sleep
- Fatigue

Effect of back pain on mother and pregnancy

Effect on the Mother

1. Physical Limitations

- Difficulty in walking, standing, sitting, or turning in bed
- Reduced ability to perform household or occupational activities

2. Sleep Disturbance

- Pain may worsen at night, leading to poor sleep quality

3. Fatigue

- Inadequate rest and continuous discomfort increase physical exhaustion

4. Emotional Impact

- Increased irritability, stress, anxiety, or low mood

5. Reduced Quality of Life

- Limitation in mobility and daily activities affects overall well-being

6. Postpartum Persistence

- Pain may continue after delivery, affecting infant care and breastfeeding posture

Effect on Pregnancy

1. Decreased Physical Activity

- Reduced maternal mobility may affect general health and fitness

2. Increased Use of Medical Care

- More frequent consultations and need for supportive therapy

3. Work Absenteeism

- Severe pain may lead to sick leave during pregnancy

4. Impact on Labor Preparation

- Discomfort may limit participation in antenatal exercises

Assessment and Diagnosis

Assessment:

- Take history (onset, location, type of pain)
- Assess severity using pain scale
- Check posture and gait
- Palpate for tenderness
- Assess range of motion
- Perform neurological check if pain radiates
- Identify red flag signs

Diagnosis:

- Mainly clinical (based on history and examination)
- Classified as lumbar pain, pelvic girdle pain, or sciatica
- Imaging only if serious condition is suspected

Non-Pharmacological Management

a. Postural Correction

- Maintain proper sitting and standing posture
- Avoid prolonged standing or sitting
- Use lumbar support while sitting

b. Exercise Therapy

- Antenatal back-strengthening exercises
- Pelvic tilt exercises
- Stretching and mild strengthening exercises
- Prenatal yoga (under supervision)

c. Physiotherapy

- Pelvic stabilization exercises
- Manual therapy (if needed)

d. Support Devices

- Maternity support belts
- Proper footwear (avoid high heels)

e. Rest and Activity Modification

- Avoid heavy lifting
- Take frequent rest breaks
- Sleep on the side with pillow support

f. Heat or Cold Application

- Local warm compress to reduce muscle spasm

Pharmacological Management

- Paracetamol (as prescribed) is generally considered safe
- Avoid self-medication
- Strong painkillers only if prescribed by a doctor

Prevention strategies

- Maintain proper posture while sitting and standing
- Perform regular antenatal back-strengthening exercises
- Avoid heavy lifting and prolonged standing
- Wear low-heeled, comfortable footwear
- Sleep in side-lying position with pillow support
- Use maternity support belt if advised
- Maintain healthy weight gain

Role of Nurse / Midwife

- Early Assessment:.
- Health Education:
- Exercise Promotion:

Non-Pharmacological Management:

Encouragement of heat therapy, rest, activity modification, and use of support devices.

- **Medication Monitoring:** Safe administration and monitoring of prescribed analgesics.
- **Referral and Interdisciplinary Care:** Timely referral to physiotherapy or specialist services when indicated.
- **Postpartum Guidance:** Education on correct breastfeeding posture and safe infant handling to prevent recurrence.
- **Psychological Support:** Providing reassurance and counseling to reduce stress and improve maternal well-being.

Conclusion

Back pain during the childbearing period significantly affects maternal comfort and daily activities. Early identification and prompt management help prevent worsening of symptoms and long-term complications. A multidisciplinary approach involving obstetricians, physiotherapists, nurses, and midwives ensures comprehensive and effective care.

Nurse-led education is especially important, as proper guidance on posture, exercise, and lifestyle modifications empowers women to manage and reduce back pain, thereby improving maternal health and overall pregnancy outcomes.

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