

Original Article

Prevalence of Low Back Pain in Pregnant Females

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ABSTRACT

Background: Low back pain (LBP) during pregnancy is a common condition that affects a significant number of women, impacting their daily activities and overall quality of life. Various studies have documented the prevalence and severity of LBP among pregnant women, highlighting the need for more focused healthcare strategies.

Objective: The aim of this study was to assess the prevalence, onset, and severity of LBP in pregnant women, and to evaluate the impact of LBP on their daily activities, with a view to enhancing prenatal care and management approaches.

Methods: A cross-sectional study was conducted over six months at two hospitals in Lahore, involving 181 pregnant women selected through non-probability convenience sampling. Data were collected using the Oswestry Low Back Pain Disability Questionnaire and the Numeric Pain Index Scale. Statistical analysis was performed using SPSS version 25, focusing on descriptive statistics to calculate means, standard deviations, and prevalence percentages. Ethical considerations followed the Helsinki Declaration guidelines, with informed consent obtained from all participants.

Results: The prevalence of LBP among the participants was 76.8%. The pain onset was most frequently reported in the second trimester (38.1% of cases). Severity assessments revealed 36.5% of participants experienced moderate pain and 40.3% severe pain. LBP significantly impaired daily functions, with many women reporting difficulties in walking, sitting, and engaging in other routine activities.

Conclusion: LBP is highly prevalent among pregnant women and begins primarily in the second trimester, with a considerable impact on daily activities. This study emphasizes the necessity for routine prenatal assessment and targeted interventions to manage LBP, which could improve pregnancy outcomes and maternal health.

Keywords: Low Back Pain, Pregnancy, Prevalence, Pain Management, Prenatal Care, Numeric Pain Index, Oswestry Disability Index, SPSS Analysis, Healthcare Outcomes, Maternal Well-being.

INTRODUCTION

Low back pain or pelvic pain (LBPP) during pregnancy, commonly recurrent or continuous for over a week, remains a prevalent concern with many potential etiologies, impacting various population groups and without a standardized external validation for symptoms reported by individuals. The International Association for the Study of Pain (IASP) categorizes pain as an unpleasant sensory and emotional experience tied to actual or potential tissue damage, a definition that encapsulates the experience of LBPP during pregnancy (1-4). Despite its disabling effects, LBPP is often under-treated and considered a normal, inevitable aspect of pregnancy, which affects a significant portion of pregnant women, generally starting around the 18th week and peaking between the 24th and 36th weeks. Factors influencing the likelihood of experiencing LBPP include biomechanical changes due to the forward shift in the center of gravity from an enlarged abdomen and breasts, resulting in altered posture, lumbar lordosis stress, and increased paraspinal muscle tension (2-4). Furthermore, physiological changes like significant water retention driven by progesterone and ligamentous laxity induced by relaxin exacerbate these symptoms (2, 5, 6).

The role of relaxin, a hormone that peaks in the first trimester and remains elevated throughout pregnancy, in causing ligamentous laxity and generalized discomfort, contributes notably to the instability of the pelvis and spine misalignment. However, the link between circulating relaxin levels and the severity of LBPP symptoms remains controversial as many studies find no significant correlation (7, 8). In addition to hormonal changes, a gravid uterus compressing the great vessels also decreases spinal blood flow, further contributing to LBPP, especially in the latter half of pregnancy (5).

Several risk factors heighten the likelihood of LBPP during pregnancy, including maternal age, socioeconomic status, previous pregnancy-related pain, heavy physical work, parity, body mass index, a personal or family history of LBP or hypermobility, as well as psychological factors like stress, anxiety, and depression related to pregnancy (9-12). These discomforts, exacerbated by prolonged postures and physical activities, often remain unaddressed until they interfere significantly with daily routines, despite the substantial number of pregnant women affected by them. The stress associated with LBPP also leads to concerns about the health of the developing baby, underscoring the psychological impact of this condition (13, 14).

The prevalence and impact of LBPP illustrate a critical public health issue, as a high percentage of affected women continue to experience pain well beyond the childbirth and post-partum period, indicating the need for more targeted medical interventions and awareness to manage and mitigate this condition effectively (15). Thus, while LBPP during pregnancy is often viewed as a standard part of the process, its implications and the factors contributing to its persistence suggest that more dedicated research and healthcare strategies are required to address this pervasive issue.

MATERIAL AND METHODS

The study was conducted using a cross-sectional design over a six-month period, from June to December 2022, at Akhtar Saeed Trust Hospital EME and Farooq Hospital West Wood Colony, Lahore. To determine the prevalence of low back pain among pregnant women, a sample size of 181 participants was calculated employing a formula to ensure a confidence level of 95%. This sample was chosen through non-probability convenience sampling, focusing on pregnant individuals within the age range of 20 to 45 years, across all trimesters, who were experiencing low back pain localized in the lumbar region. Both multiparous and primigravida individuals were included. The study excluded individuals with pre-existing physical disabilities or low back pain pathologies, such as those caused by infections or trauma (16).

Data were gathered using the Oswestry Low Back Pain Disability Questionnaire and the Numeric Pain Index Scale, which participants completed during their visits. All data analysis was carried out using SPSS version 25, where descriptive statistics, including means and standard deviations, were calculated to summarize the data. Ethical considerations were strictly adhered to, following the guidelines set by the Ethical Committee of Akhtar Saeed College of Rehabilitation Sciences, Lahore. The study was conducted in compliance with the Helsinki Declaration. Informed consent was obtained from each participant after fully explaining the purpose and nature of the study. Confidentiality of participant information was maintained, and anonymity was ensured. Participants were informed of the absence of risks associated with the study and were given the freedom to withdraw from the study at any point. Additionally, appropriate data security measures were implemented to protect the privacy and integrity of the collected data. These rigorous ethical practices ensured that the rights and welfare of the participants were prioritized throughout the study.

RESULTS

In the conducted study, a significant majority of the pregnant participants reported experiencing low back pain, with 139 out of 181 respondents affirming this condition, representing 76.8% of the total sample (Table 1). Among these cases, the severity of the pain varied, with 66 individuals (36.5% of the total sample) experiencing moderate pain, rated between 4 to 6 on the Visual Analog Scale, and 73 participants (40.3% of the total sample) reporting severe pain, rated between 7 to 10 (Table 1).

Table 1: Prevalence and Severity of Low Back Pain During Pregnancy

Condition	Frequency	Percent	Pain Severity (Visual Analog Scale)	Disability (Oswestry Disability Index)
Low Back Pain				
Yes	139	76.8%	4-6 Moderate: 66 >7-10 Severe: 73	Moderate: 6 >Severe: 71 >Complete: 62
No	42	23.2%	N/A	N/A
Total	181	100.0%		

Table 2: Distribution of Low Back Pain Across Pregnancy Trimesters

Trimester	Frequency	Percent
1st Trimester	27	14.9%
2nd Trimester	69	38.1%
3rd Trimester	67	37.0%
Total	163	90.1%

Table 3: Number of Pregnancies Among Participants

Pregnancy Status	Frequency	Percent
Primigravida	55	30.4%
Multigravida	126	69.6%
Total	181	100.0%

The distribution of low back pain across the different trimesters of pregnancy shows a noticeable increase as pregnancy progresses. The second trimester had the highest frequency of reported pain, with 69 participants (38.1% of the total sample), closely followed by the third trimester with 67 participants (37.0%). The first trimester had the lowest occurrence, with 27 cases (14.9%) (Table 2). This distribution underscores the progressive nature of low back pain as pregnancy advances.

Regarding the disability levels among those experiencing low back pain, as measured by the Oswestry Disability Index, severe disability was reported by 71 participants, constituting a significant 39.2% of the total sample. Additionally, 62 participants (34.3% of the total sample) were classified as completely disabled due to low back pain. In contrast, only a minor fraction, 6 individuals (3.3% of the total sample), reported moderate disability (Table 1).

The study also looked into the pregnancy history of the participants, where a substantial majority were multigravida, with 126 out of the total 181 participants (69.6%) having been pregnant more than once. In contrast, primigravida participants—those in their first pregnancy—accounted for 55 individuals or 30.4% of the total sample (Table 3).

These findings indicate a prevalent issue of low back pain among pregnant women, which tends to increase both in frequency and severity as pregnancy progresses. The significant levels of severe and complete disability reported highlight the substantial impact of this condition on the day-to-day functioning and quality of life of affected individuals. Moreover, the higher frequency of low back pain in multigravida participants suggests that previous pregnancies might contribute to the susceptibility of experiencing more intense pain in subsequent pregnancies.

DISCUSSION

In this study, the prevalence of low back pain (LBP) among pregnant women was found to be markedly high at 76.8%, aligning with previous research that reports prevalence rates ranging from 68.5% to 80% (16). This similarity is notable in comparison to studies like that by Gutke et al., which reported a 73% prevalence among Norwegian pregnant women, and another in central Portugal where approximately 64% of women experienced LBP at some point during pregnancy (16). Moreover, our findings resonate with a 2017 Brazilian study, which documented a 68% prevalence, and highlighted that LBP typically begins in the second trimester, a trend that was also observed in this study with 38.1% of the women reporting onset during this period (17).

The incidence of LBP increasing during the second trimester may be attributable to significant changes in spinal flexibility. Although some prospective studies have indicated a higher prevalence in the third trimester, our results differ, suggesting variations in the progression of LBP during pregnancy (17). The extensive impact of LBP on pregnant women's ability to perform daily activities, including walking, sitting, and engaging in travel, was profoundly noted. This functional limitation is exacerbated by the physical changes in the musculoskeletal system, such as increased spinal load from the growing fetus and exaggerated lordosis, which stress the spinal joints and contribute to dysfunction (18).

In terms of pain severity, our study found that 37.6% of the affected women experienced moderate pain, with 21.5% reporting severe pain, which closely aligns with a US study where the majority of the 645 surveyed pregnant women also reported moderate pain severity (19). The aggravation of pain by standing and the relief found in resting highlight the biomechanical contributions to LBP during pregnancy. These observations underscore the critical nature of LBP as a barrier to normal daily activities, confirming the findings from other literature indicating the severe disruption caused by LBP to daily life (20).

Despite the high prevalence and significant impact of LBP on daily functions, treatment remains limited, often because LBP is perceived as a normal and untreatable part of pregnancy. This underscores a notable gap in prenatal care, where advice on

prevention and management of LBP is crucial but often omitted. There is a clear need for routine incorporation of guidance and referrals to physiotherapy as part of prenatal care to address persistent symptoms effectively (17).

Reflecting on the limitations of this study, the use of a non-probability sampling method may affect the generalizability of the findings. Future research should consider employing a probabilistic sampling technique to enhance the representativeness of the results. Additionally, the reliance on self-reported measures for assessing pain severity could introduce bias; subsequent studies might benefit from incorporating clinical evaluations to verify these measures (17-20). The findings of this study not only reinforce the prevalent impact of LBP during pregnancy but also highlight the critical need for healthcare providers to routinely assess and address this condition. Educating pregnant women about LBP and providing targeted interventions can potentially improve their quality of life and reduce the undue burden of this common ailment.

CONCLUSION

This study underscores the high prevalence of low back pain (LBP) during pregnancy, significantly affecting women's daily activities and quality of life. The findings highlight the urgent need for healthcare providers to integrate routine assessment and management of LBP into prenatal care. Offering education on LBP and ensuring timely referrals to physiotherapy could significantly alleviate the discomfort experienced by pregnant women and mitigate the functional impairments associated with this condition. Addressing LBP during pregnancy not only improves maternal well-being but also contributes to more effective healthcare outcomes by reducing the burden of untreated chronic pain.

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