Original Article

# Prevalence of low back pain in pregnant women and its impact on activities of daily living

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**Objective:** To determine the prevalence of pregnancy-related low back pain (LBP) in the third trimester and to assess its harmful impact on everyday life such as standing, walking, sitting, lifting, travelling, and sleeping.

**Methodology:** We included 103 pregnant women in 3rd trimester using a purposive sampling technique at Independent Teaching Hospital from June 2018 to February 2019. Visual analogue scale (VAS) to measure pain intensity and Oswestry disability Index (ODI) questionnaire were used to assess functional limitations. Date were analyzed using SPSS version 20.

**Results:** The prevalence of LBP was 83.5%. Out of 103, 22.1% women had severe pain that comes and goes. Activity of daily livings (ADLs) including personal care, lifting, walking, sitting, standing, sleeping, social life, and travelling were positively correlated with disability level of the participants ($P<0.05$).

**Conclusion:** There was high prevalence of LBP in pregnant women. As pregnancy progresses in the last trimester, the intensity of pain and the degree of disability increase, which affects the quality of life and ADL. (Rawal Med J 202;45:439-442).

**Keywords**: Low back pain, pregnancy, activities of daily living.

## INTRODUCTION

Low back pain (LBP) accounts for more years lived with disability than any other health condition.[1] It occurrs once in their life time in approximately 80% of the world's population.[2] Pregnancy-related low back pain (P-LBP) develops in about 50–90% pregnant women.[3] Pregnancy brings many changes in the human body, like biomechanical, hormonal or psychosocial.[4] The effect of P-LBP mostly restricts the women to perform routine activities for instance; women experience unpleasant feelings during washing, dressing, lifting heavy loads, walking a distance, sitting and standing for prolonged duration, sleeping hours, social interactions and travelling.[5] LBP during pregnancy is frequent and is considered as part of the pregnancy process.[6–8]

The incidence and causes for pain vary among countries. Hence, it is essential for different nations to determine their own prevalence rate of LBP.[9] To date, there is a lack of information regarding the prevalence of LBP in Pakistani women and its impact on ADLs is also unknown. Henceforth, this study was aimed to investigate the prevalence of LBP in the last trimester of pregnancy in Pakistani women and to assess their functional disability due to LBP.

## METHODOLOGY

In this cross sectional study, 103 pregnant women out of 200 in the 3rd trimester of pregnancy were recruited thorough purposive sampling technique from Independent University Hospital, Faisalabad, Pakistan from June 2018 to February 2019. An informed consent was signed by all patients. The ethical approval was taken from Ethical Review Committee of Riphah International University, Faisalabad.

Women diagnosed with any previous history of spinal or orthopaedic problem, any systemic disease, high risk pregnancy, decreased Vitamin D, and anaemia or with any traumatic injury and psychiatric disorders were excluded. Visual analogue scale (VAS) was used to evaluate the intensity of pain and Oswestry disability index (ODI) was used to assess functional disabilities following LBP on ADL. ODI is believed to be a valid and reliable and it is worthwhile for measuring

the outcomes.[10,11]

**Statistical Analysis:** Date were analyzed using SPSS version 20. P-value at <0.05 was considered to be statistically significant.

## RESULTS

A total of 103 pregnant women were eligible out of 200. Average age was 25.11±4.23 year (Table 1). Out of 103 women, 86(83.5%) had LBP. The majority of pregnant women experienced moderate intensity of pain i.e. 36 (41.9%), while the pain occurred commonly at third trimester 38 (44.2%) (Table 2).

**Table 1. Demographic features of participants (N=103).**

| Variables | | Frequency | % | Mean | Std. Dev. |
|---|---|---|---|---|---|
| Age in (Year) | 18-23 | 41 | 39.8 | 25.11 | 4.23 |
| | 24-29 | 43 | 41.7 | | |
| | 30-40 | 19 | 18.4 | | |
| Occupation | Housewives | 100 | 97.1 | | |
| | Working women | 3 | 2.9 | | |

**Table 2. Prevalence of pregnancy related LBP.**

| Pain | Frequency | % |
|---|---|---|
| **Yes** | 86 | 83.5 |
| **No** | 17 | 16.5 |
| **Number of days of back pain** (N:86) | | |
| Up to 1 month | 24 | 27.9 |
| 1.1-2 month | 20 | 23.3 |
| 2.1-3 months | 16 | 18.6 |
| More than 3 months | 26 | 30.2 |
| **Gestation Period (Months)** (N:86) | | |
| 7th | 22 | 25.6 |
| 8th | 26 | 30.2 |
| 9th | 38 | 44.2 |
| **Month of starting back pain** (N:86) | | |
| Up to 3 | 24 | 27.9 |
| 3.1-6 months | 34 | 39.5 |
| 6.1-9 | 28 | 32.6 |

**Table 3. Association between independent and dependent (disability level) variables.**

| Variables | Chi-square value | P-value |
|---|---|---|
| AGE | 8.48 | .387NS |
| Month | 8.98 | .344NS |
| Pain intensity | 48.52 | .000** |
| Personal care | 61.09 | .000** |
| Lifting | 55.79 | .000** |
| Walking | 93.86 | .000** |
| Sitting | 63.29 | .000** |
| Standing | 72.57 | .000** |
| Sleeping | 64.00 | .000** |
| Social Life | 68.67 | .000** |
| Traveling | 52.97 | .000** |
| Changing degree of pain | 58.89 | .000** |

Dependent variable: Disability level. NS = Non-significant
** = Significant

**Fig. Oswestry disability index scoring explained level of disability due to P-LBP (N=86).**

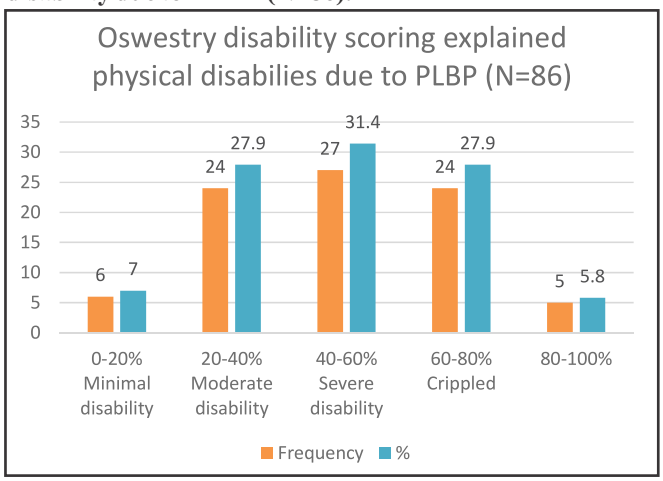


Table 3 shows that the chi-square value (8.48) has an insignificant association between the age of the patients and their level of disability. Similarly, it shows a non-significant relationship between month of gestation and level of disability. Pain intensity ($\chi2$=48.52), personal care (($\chi2$=61.09), lifting ($\chi2$=55.79), walking ($\chi2$=.93.86), sitting ($\chi2$=.63.29), standing ($\chi2$=.567), sleeping ($\chi2$r=.64.00), social life ($\chi2$=68.67), traveling ($\chi2$=52.97) and changing degree of pain ($\chi2$=.58.89) were positively correlated with disability level.

OWI showed that 27.9% participants were placed in crippled category (disabled up to 60-80 %) (Fig.).

## DISCUSSION

LBP is a common complaint in pregnancy seen in most women. Nonetheless, obstetrician-gynaecologists pay little attention to this health problem, because they are often considered to be a normal change in pregnancy.[7] We found that 86 out of 103 pregnant women were suffering from LBP. Mohseni-Bandpei et al reported relatively lower prevalence of LBP of 40.2% in the last month.[12] Similarly, Ansari et al reported a prevalence in Iranian pregnant women of 57.3% with 40.7% experienced pain in the last trimester.[9] A higher prevalence among Pakistani pregnant women might be due to poor posture and strenuous daily activity in our study population.

Most of women had back pain in ninth month of pregnancy. Almost 30.2% had pain in eighth month and 44.2% reported pain in ninth month of pregnancy. Intensity of pain in our study was 26.7% which was very mild pain. Moderate pain is experienced in last trimester of pregnancy.[13] Coban et al stated that level of pain in the 3rd trimester of pregnancy is usually less intense in those who experience back ache.[14] In contrary, one study concluded that pain intensity increases as the pain duration increases.[15]

LBP affects ADLs including lifting, walking, and standing, sitting, sleeping and social life interactions especially in the last three months as the baby size and weight reaches to its maximum. Biomechanical alterations are predominant that lead to further increment in pain of lower back. The present study found that 71 subjects had difficulty in walking. In Mohseni-Bandpei et al study, 76.3% reported that pain was aggravated when standing for prolonged duration and rest relieved the back pain.[12] The current study showed that 19.8% women had their social life hardly affected. Matsuzaki et al noted that life style was changed in the third trimester (e.g. working women cease their work due to pain.[16] Amador-Licona and Guizar-Mendoza reported low quality of life as the weight of pregnant woman increased in third trimester.[17] Mens et al stated that more than 80% pregnant women with LBP experienced distress on daily activities and had problems in housework, child rearing and job performance.[18]

Sleep is affected largely in the last month of pregnancy, as the back pain increases. Findings of current study showed that 73 subjects had LBP during sleep. Lopes et al concluded that with the progression of gestational age, the proportion of sleeping disorders increased.[19]

Travelling is also affected in the third trimester of pregnancy, mostly due to the backache. In the present study, 68 out of 86 pregnant women had difficulties during travelling. American College of Obstetricians and Gynecologists (ACOG) committee stated that travelling is not advisable during the last months of pregnancy because there are chances of Deep Venous Thrombosis and edema and prolonged sitting places stress on the spine that can lead to backache in travel.[20]

ODI score of the current study revealed that 31.4% pregnant women were placed severe disability. Recent research by Pierce et al also used ODI and concluded that less than 10% of their subjects had little disability, 11-39% had mild and moderate category had greater than 40%. Rate of disability is dependent on intensity of LBP.[4] One study observed that as the pain level increases, rate of disability also increases.[15]

## CONCLUSION

This study found a high prevalence of LBP in pregnant women in the third trimester. In addition, daily activities, including personal hygiene, lifting, walking, sitting, standing, sleeping, social life, and travel, were affected due to the presence of LBP in the third trimester of pregnant women.

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