

Prevalence of Pregnancy Related Low Backpain Among the Pregnant Women at the Selected Hospitals of Lahore City, Pakistan

Marjan Tariq^{1*}, Umair Ahmed¹, Waqar Afzal¹, Kamran Hanif¹, Hira Shafiq¹

University Institute of Physical Therapy, The University of Lahore, Lahore, Pakistan.

*marjantariq999@gmail.com

Abstract:

In pregnancy biomechanical changes cause many musculoskeletal problems. Low Back Pain (LBP) is a common complaint in pregnancy. LBP is considered as axial or parasagittal discomfort in lumbar region.

Objective:

To determine the prevalence of pregnancy related low back pain among pregnant women at selected hospitals of Lahore city.

Methods:

The study design was cross sectional and the data were collected at selected hospitals in Lahore with sample size 1000. The Modified Oswestry Disability Index Questionnaire was used to collect the data. Collected data were analyzed through SPSS 21 version software.

Results:

The results have shown that the prevalence of low back pain during pregnancy was 26.3%. The mostly were housewives. The back pain mostly occurred in 3rd trimester of pregnancy with several activities that Increase Low Back Pain likes prolong sitting, standing, lifting heavy objects and leaning forward. Some risk factors like overweight and abnormal posture were also the cause of Low Back Pain.

Conclusions:

Low Back Pain in pregnancy was very common. Mostly women were not aware of proper treatment of low back pain. Physiotherapy played a vital role to minimize the low back pain and also the pregnancy related complications.

Key words:

Prevalence, Pregnancy, Low back pain, prolonged sitting, prolonged standing.

Introduction:

The pain refers to the lumbar region of the spine surrounding the 1st lumbar vertebra. The spine is the area that form lordotic curve. The most common site of low back pain is 4th and 5th lumbar segment.¹ LBP is a common complaint in pregnancy. LBP is considered

as axial or para-sagittal discomfort in lumbar region. Lower back pain put a bad effect on women's routine life, capability to work and value of life consequently also affecting national efficiency.² Pregnancy related LBP is often unprocessed.³ The pregnancy etiology of low back pain is multifactorial and commonly linked with hormonal, vascular and biomechanical modification.⁴ The laxity of PG ligaments or the other ligaments are disturbed by relaxing hormone. Pelvic joint movements are slightly higher due to the consequence of increased ligament laxity. If laxity of ligament not treated by changed neuromotor mechanism can cause separation and widening of the symphysis pubis.⁵ In pregnancy LBP defined various modifications in load and body mechanics throughout the carrying of a child. In pregnancy weight increases and shift center of gravity anteriorly. Postural changes cause anterior shift which result increase lordosis.⁴ Presence of low back pain in earlier stage or throughout previous pregnancies, maternal age, heavy work, diagnosis of hypermobility, socioeconomic class that are the risk factors.⁶ Discomfort in lumbar region may also change the PP region, mostly sacroiliac joint during pregnancy or direct stretch of intrapelvic structures. Discomfort in the lumbar spine can radiate to the posterior thigh or buttock. Many circumstances LBP rapidly recover but if the LBP is continuous some reasons like infection or preterm labor.⁷ To differentiate Pelvic Girdle Pain from other disorder or illness pain provocation test are use. In pelvic Girdle pain posterior pain provocation test is positive.⁸ Though motion palpations outcomes is the most commonly used diagnostics tools but they have limited value in differential diagnosis. Particularly its validity, sensitivity and specificity in overall have not been effectively studied.⁹ Low back pain in pregnancy disturbs women's lives affectedly. After delivery low back pain is the main reason of sick leave.¹⁰ The

prevalence rate of LBP during pregnancy increase 61% to 88%.¹¹ Mostly LBP occur in first 6 months of pregnancy¹². Physical demanding job and stress increase LBP in pregnancy.¹³ The low back pains can be intermittent or constant and present in one place or radiate or refer to further regions. The low back pain is a sharp or burning sensation or a dull ache pain. When a strained in a muscle or ligament that holds the vertebrae in a proper position produced low back pain. The spinal column formed by the vertebrae in which the spinal cord passes. The spine reduces its stability when the ligaments and muscles are weak and cause pain. During pregnancy LBP is common and about half pregnant females are indicated by low back pain.¹ During pregnancy 50-90 % women develop symptoms of low back pain.¹⁴ During pregnancies LBP is common illness and LBP is also with stiffness and soreness.¹⁵ Pregnancy can be defined as carrying a fetus and developing embryo in the female body. The pregnancy can be confirmed through following tests such as positive result on the counter urine test, blood test, and ultrasound. The total duration of pregnancy is 9 months and also measures the date of last menstrual period. There are 3 trimesters in pregnancy and one trimester contains 3 months.¹ In pregnancies some women experienced dull LBP because it is more commonly in those who have 2 or more children and some women feel pain in the sacroiliac joint and the pain start at morning stiffness and then continue throughout the day.¹⁶ Best possible result can get after taking the early credentials and treatment of the individuality of every pregnant women. Nerve stimulation, physiotherapy, yoga stabilization belts, relaxation, pharmacological treatment and massage are the gold standards conservative treatment of Low back pain.¹⁷

A cross sectional study conducted in India by Arati Mahishale, Sudini Santosh S Borkar. The aim of this study was to find out the prevalence of patterns of pregnancy induced LBP. The data was collected from 225 pregnant women. The LBP diagnostics test was confirmed by Modified Oswestry Disability Index Questionnaire and pelvic girdle questionnaire. The results of this study show that the prevalence of LBP was 31%.⁵ Another cross-sectional study conducted in Bangladesh by Shimul Chanda. The main purpose of this study was to find out the prevalence of pregnancy related LBP among the pregnant women. In this study 100 pregnant women

participate. According to this study the prevalence of low back pain was 51%. This study also stated that the LBP was most commonly occurring at second trimester of pregnancy. This study also shows that the prevalence of LBP was common in women who have their first pregnancy¹. According to Andreia the prevalence of LBP was 54.9%.¹⁸

The purpose of this study was to find the prevalence of LBP in pregnant women of Lahore Pakistan. Like other countries, Pakistan will also face the LBP burden among pregnant women. So awareness and educate the patients is so important and also educate the patients about physiotherapy role in pregnancy for the relieve of LBP and its complications.

Methods:

A cross-sectional study was conducted and non-probability convenient sampling technique was used to collect 1000 pregnant females. The Modified Oswestry Disability Index Questionnaire was used to collect the data. Pregnant women having back pain, aged between 18 to 35 years and willing to participate were included. While pregnant females with fractures, trauma, tumors and having other pathological conditions were excluded. The data were collected from Lady Wiliingdon Hospital Lahore, Lady Aitchison Hospital Lahore, Sir Ganga Ram Hospital Lahore, Mansoor Hospital Lahore and Social Security Hospital Lahore. SPSS version 21.0 was used for data analysis.

Results:

Among 1000 females, 263 (26.3%) women had LBP in pregnancy and 737 (73.7%) women were not having LBP in pregnancy as shown in Table 1.

Low Back Pain	Frequency	Percent
YES	263	26.3
NO	737	73.7
Total	1000	100.0

Table 1: Prevalence of Low Back Pain

Minimum age of participants was 18 and maximum age was 35 years and their mean age was 26.3±4.5, as shown in Table 2.

Age	N	Minimum	Maximum	mean	SD
	1000	18	35	26.316	4.5087

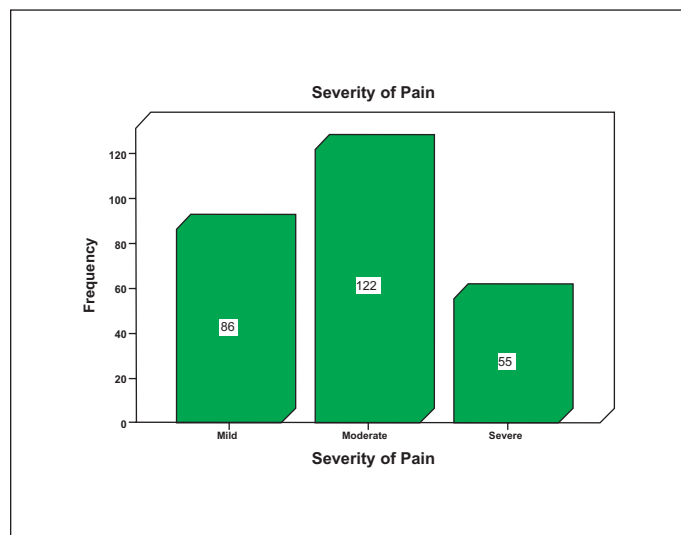
Table 2: Age of Females

According to table 3 the result showed that out of 263 females 25 (9.5%) patients had low back pain in first trimester (1-3 months) of pregnancy, 68 (25.9%) had pain in second trimester (4-6 months) of pregnancy and 170 (64.6%) had pain in third Trimester (7-9 months) of pregnancy.

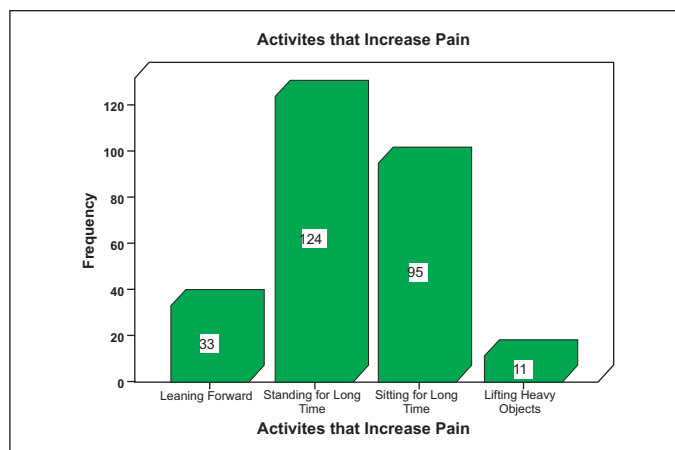
Trimester	Frequency	Percent
First	25	9.5
Second	68	25.9
Third	170	64.6
Total	263	100.0

Table 3: Descriptive statistics of trimester of pregnancy

Analysis revealed that there were 86 (32.7%) patients who had mild pain, 122 (46.4%) patients had moderate pain and 55 (20.9%) patients had severe pain during pregnancy as shown in Figure 1.

**Figure 1:** Severity of Pain

Activities that increase the low back pain were leaning forward 33 (12.5%),prolong standing 124 (47.1%), prolong sitting 95 (36.1%) and lifting heavy object 11 (4.2%) as shown in Figure 2.

**Figure 2:** Activities that increase pain

Analysis revealed that 38 (14.4%) patients had low back pain due to overweight, 119 (45.2%) patients had low back pain due to lack of exercise, 88 (33.5%) patients had low back pain due to under nutrition and 18 (6.8%) patients that have low back pain due to disturb posture.

Factors	Frequency	Percent
Overweight	38	14.4
Lack of exercise	119	45.2
Under nutrition	88	33.5
Disturb posture	18	6.8
Total	263	100.0

Table 4: Risk Factors for low back pain

Discussion:

According to this study the prevalence of LBP in pregnancy was 26.3%. According study conducted by Bailey A, the prevalence of LBP was 57.3%.¹⁷ But according to Vleeming A *et al*, the prevalence of LBP was 31%.¹⁰ Results are also in accordance with study of Shimul C, that prevalence of LBP during pregnancy was 51%.¹ The results showed that the Low Back Pain was most frequent in 3rd trimester (7-9 months). Shimul C, stated that the prevalence of low back pain was most frequent in 2nd trimester.¹ But according to Ramachandra P, *et al*, the prevalence of low back pain was reported to be less in the 3rd trimester (32.5%) compared to the 2nd trimester (37%).¹⁹ Current study showed that there were 20.9% patients who felt severe LBP in pregnancy and 32.7% patients felt mild LBP and 46.4% patients who felt moderate pain during pregnancy. But Shimul C, stated

that 35.29% patients had severe pain, 50.98% patients had moderate pain and 13.73% patients had mild pain during pregnancy.¹ Our study also stated that there were several activities that decrease or increase low back pain during pregnancy. Rest doing different activities that reduce back pain include side lying 6%, walking 11%, through exercise 1% and 14% through medication. But according to Mota MJ *et al*, the low back pain was mainly relieved with rest and worsened with the progression of the pregnancy, causing sleep disturbances and preventing the performance of daily activities, independently of parity.¹⁸ Current study showed that the low back pain was found in those females who had physical demanding job and these activities also increase low back pain like leaning forward (12.5%) and (47.1%) standing for a long time and (36.1%) sitting for a long time and (4.2%) lifting heavy objects. But Mota MJ *et al*, reported increased LBP in pregnant women who were exposed to heavier physical work, such as repetitive lifting and bending.¹⁸ Wang S-M *et al*, found no relationship between professional role and the incidence of pregnancy related LBP.²⁰ The risk factors that cause low back pain in pregnancy were overweight 14.4%, lack of exercise 45.2%, under nutrition 33.5% and disturb posture 16.8%. According to Mogren IM and Pohjanen AI also identified risk factor for developing LBP during pregnancy.⁶

Conclusions:

The prevalence of low back pain in pregnancy was 26.3%. It mostly occurred in third trimester of pregnancy. There were several risk factors that were reasonable for LBP during pregnancy like overweight, disturb posture, under nutrition and smoking. The majority of the patients were housewives. The low back pain was most due to physical demanding job.

References:

- 1- Shimul C. Prevalence of pregnancy related low back pain among the pregnant women at the selected hospital in Bangladesh (Doctoral dissertation, Department of Physiotherapy, Bangladesh Health Professions Institute, CRP).
- 2- Stuge B, Hilde G, Vøllestad N. Physical therapy for pregnancy-related low back and pelvic pain: A systematic review. *Acta obstetricia et gynecologica Scandinavica*. 2003 Nov 1;82(11):983-90.
- 3- Assis RG, Tibúrcio RE. Prevalência e características da lombalgia na gestação: um estudo entre gestantes assistidas no programa de pré-natal da maternidade Dona Íris em Goiânia. Trabalho de conclusão de curso. Universidade Católica de Goiás. Goiânia. 2004:10-28.
- 4- Sabino J, Grauer JN. Pregnancy and low back pain. *Current reviews in musculoskeletal medicine*. 2008 Jun 1;1(2):137-41.
- 5- Mahishale AV, Borkar SS. Prevalence of Patterns of Pregnancy induced Pelvic Girdle Pain and Low Back Pain in a Tertiary Care Centre-a Cross Sectional Study.-. *International Journal of Therapies and Rehabilitation Research*. 2015;4(4):122-4.
- 6- Mogren IM, Pohjanen AI. Low back pain and pelvic pain during pregnancy: prevalence and risk factors. *Spine*. 2005 Apr 15;30(8):983-91.
- 7- Bewyer KJ, Bewyer DC, Messenger D, Kennedy CM. Pilot data: association between gluteus medius weakness and low back pain during pregnancy. *The Iowa orthopaedic journal*. 2009;29:97.
- 8- Haugland KS, Rasmussen S, Daltveit AK. Group intervention for women with pelvic girdle pain in pregnancy. A randomized controlled trial. *Acta obstetricia et gynecologica Scandinavica*. 2006 Nov 1;85(11):1320-6.
- 9- Leboeuf-Yde C, van Dijk J, Franz C, Hustad SA, Olsen D, Pihl T, Röbech R, Vendrup SS, Bendix T, Kyvik KO. Motion palpation findings and self-reported low back pain in a population-based study sample. *Journal of Manipulative & Physiological Therapeutics*. 2002 Feb 1;25(2):80-7.
- 10- Vleeming A, Albert HB, Östgaard HC, Stureson B, Stuge B. European guidelines for the diagnosis and treatment of pelvic girdle pain. *European Spine Journal*. 2008 Jun 1;17(6):794-819.
- 11- Slipman CW. *Interventional spine: an algorithmic approach*. Elsevier Health Sciences; 2008.
- 12- Katonis P, Kampouroglou A, Aggelopoulos A, Kakavelakis K, Lykoudis S, Makrigiannakis A, Alpantaki K. Pregnancy-related low back pain. *Hippokratia*. 2011 Jul;15(3):205.
- 13- Verbunt JA, Smeets RJ, Wittink HM. Cause or effect? Deconditioning and chronic low back pain

- Pain. 2010 Jun 1;149(3):428-30.
- 14-** Hills EC. Mechanical low back pain. EMedicine. 2006 Jun 28.
 - 15-** Ansari NN, Hasson S, Naghdi S, Keyhani S, Jalaie S. Low back pain during pregnancy in Iranian women: Prevalence and risk factors. Physiotherapy theory and practice. 2010 Jan 1;26(1):40-8.
 - 16-** Osterman MJ, Martin JA. Epidural and spinal anesthesia use during labor: 27-state reporting area, 2008. National vital statistics reports: from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System. 2011 Apr;59(5):1-3.
 - 17-** Bailey A. Risk factors for low back pain in women: still more questions to be answered. Menopause. 2009 Jan 1;16(1):3-4.
 - 18-** Mota MJ, Cardoso M, Carvalho A, Marques A, Sá-Couto P, Demain S. Women's experiences of low back pain during pregnancy. Journal of back and musculoskeletal rehabilitation. 2015 Jan 1;28(2):351-7.
 - 19-** Ramachandra P, Maiya AG, Kumar P, Kamath A. Prevalence of musculoskeletal dysfunctions among Indian pregnant women. Journal of pregnancy. 2015;2015.
 - 20-** Wang SM, Dezinno P, Maranets I, Berman MR, Caldwell-Andrews AA, Kain ZN. Low back pain during pregnancy: prevalence, risk factors, and outcomes. Obstetrics & Gynecology. 2004 Jul 1;104(1):65-70