

# Prevalence of Sacroiliac Joint Pain in Pregnant Women of Lahore City

HIRA SHAFIQ<sup>1</sup>, SANA TAUQEER<sup>2</sup>, FATIMA YOUNAS<sup>3</sup>, SOBIA GHAFOOR<sup>4</sup>, MOMINA ASGHAR<sup>5</sup>, MERYAM AZAM<sup>6</sup><sup>1</sup>Lecturer The University of Lahore, Pakistan<sup>2</sup>Senior Lecturer The University of Lahore, Pakistan<sup>3</sup>Consultant Okara Hospital<sup>4</sup>Physiotherapist<sup>5</sup>Demonstrator The University of Lahore,<sup>6</sup>Consultant Bahria HospitalCorrespondence to Dr. Sana Tauqeer, Email: [sana.tauqeer@uip.t.uol.edu.pk](mailto:sana.tauqeer@uip.t.uol.edu.pk)

## ABSTRACT

**Background:** Bio-mechanical changes during pregnancy impose postural deviation, its leading sacroiliac joint pain, or this pain increase with advancing pregnancy or interface the daily activities or sleep.

**Aim:** To determine the prevalence of sacroiliac joint pain.

**Methods:** This Cross sectional study was conducted at Kannan Physiotherapy and Spine Clinic Lahore, Pakistan. Convenient sampling non-probability sampling method was used, PGQ questionnaire or clinical tests are used to diagnose the sacroiliac joint pain.

**Results:** Total pregnant women are 196, There sum of all activity or sum value divided by 75 or multiply by 100, mean 37.30; std. deviation 18.239; minimum 0; maximum 85.(the population of 1000 pregnant women were considered of which 196(19.6%) said they feel pain while 804(80.4%) said they didn't feel pain or pain increase with trimester.

**Conclusion:** The study concluded that pregnant women are at mild to moderate rate of developing sacroiliac joint pain due to repetitive bad posture or heavy weight during pregnancy.

**Keywords:** Pregnancy, Sacroiliac joint pain, Pelvic girdle questionnaire, clinical test.

## INTRODUCTION

Pregnancy related sacro-iliac joint pain (SIJ) are the common problem described by the pregnant ladies in Pakistan society<sup>1</sup>. European program of different author, sacro-iliac joint dis-conform(SI) are describe " Posterior Pelvic dis-conform that mostly originate in pregnant women e.g., injury, inflammatory disease and degenerative joint disease. Dis-conform is fell between the posterior iliac crest and buttock, specially the section of the sacro-iliac joints (SIJ). The dis-conform May be radiated in the back thigh and can also occur with/or without the symphysis pubis pain"<sup>2</sup>.

The sacro-iliac joint (SIJ) may be reason of lumbar pain is a continual susceptible<sup>3</sup> but various author says that the sacro-iliac joint is a actual reason for dis-conform in the lumbar spine and buttock area<sup>4</sup>. The causes of sacro-iliac joint pain included hormonal changes, bio-mechanical alteration, metabolic factors, injury and stress of the ligament structures<sup>5</sup>.The hormone relaxin, disturb the condition of ligaments of the sacroiliac joint. The disturbance of ligament increased ligament laxity can enhance the movement in the sacroiliac joint<sup>5</sup>.Pregnancy related pelvic girdle pain classification depending on symptoms<sup>5</sup>.

Symptoms of the back of pelvic girdle and uni-lateral sacro-iliac joint are called as one sided sacro-iliac disease. Double sided Sacro-iliac disease includes indication of the back of pelvic girdle and bi-lateral sacroiliac joint<sup>5</sup>.Classification of the pelvic girdle pain in pregnant lady into four different groups: symphysis pain, symphysis and sacroiliac pain, sacro-iliac and back pain, and trochanteric pain<sup>6</sup>. Women with sacro-iliac joint pain feel sharp, cramping or Aching and dis-conform in deep uni-lateral or bi-lateral dis-conform in the buttock area, pain feel between iliac crest and the buttock, close to the sacro-iliac joints and distal to the back of spine. It decrease the power hold the position and daily activities for prolonged time, such as standing, walking, and sitting, etc<sup>7</sup>.Few studies show a hereditary relationship between the sacroiliac joint pain between from the mother to the daughter<sup>5</sup>.

During pregnancy sacroiliac joint pain symptom occurs, may this symptom present during labour, postpartum period. 22% of all pregnant lady have some sacroiliac joint pain, with 5-8% having severe symptoms e.g., function limitation and disability<sup>8</sup>. On physical examination; waddling gait or disability of walking may be notice, soreness may be feel in palpation or pain increase in hip abduction<sup>4,5</sup>.

The sacro-iliac (SI) joint is the larger axile joint in the body, with a mean surface area of 17.5cm<sup>9</sup>. The SI joint characterised as a larger, auricular-shaped synovial joint. Actuality, A frontal third of the surface is connected between the sacrum and Ilium, it is real synovial joint; or absent of the posterior capsule<sup>10</sup>. Function of the ligamentous system; is limit the movement in all planes. In pregnant lady ligament are not strong, allowing the mobility, it is essential for child birth<sup>11</sup>. Basically sacro-iliac joint provide the support of muscle. Sacro-iliac joint assist to transfer the force of muscle to the pelvic bone. Some muscles, like; gluteus maximus, piriformis and biceps femoris, are attached to sacro-iliac joint to connective tissue. They act in the mobility of joint<sup>12</sup>. Lateral subdivision of L4-S3dorsal rami are main supply of Sacroiliac joint (SI) joint<sup>9</sup>. More recent literature recommended the front point is supply of the L2-S2<sup>9</sup>, L4-S2<sup>13</sup> and L5-S2 ventral rami<sup>14</sup>. In previously researches describe the .Sacroiliac joint mechanism of injury as a accumulation of axial load and abrupt motion<sup>15</sup>.

In anatomical plan, pathological alteration affect sacroiliac joint structure; such as capsular or synovial disturbance, capsular and ligamentous stress, decrease in movement or increase movement, external compaction or cutting forces, irregular joint mechanism, micro-fractures, macro-fractures, bone tumors, soft tissue injury, and osteoarthritis<sup>11</sup>. Several studies measure the reliability of tests sacroiliac joint pain and pathology. The tests are separate according to the motility or point of touch (palpation tests) and tension in the anatomical structure to produce the patient's symptoms (pain provocation tests)<sup>16</sup>. Different physical examination tests are help in diagnosis of SI pain<sup>17,18,19</sup>. Compression test: A clinical test used to identify pain of sacroiliac origin, which consists of placing vertical pressure on the hip of a patient lying on his or her side to spread the anterior superior iliac spine (ASIS). Patient has pain in the buttocks<sup>4</sup>. Posterior pelvic pain provocation test (P4): patient in supine position, examiner one hand place back of sacrum to maintain its position or other hand place on the knee to apply the download force along the axial of femur, or hold the position of of patient hip flexed with knee bend. Advise to avoid excessive adduction due to discomfort for the patient<sup>4</sup>.

Aims of this study are to describe the prevalence of Sacroiliac joint pain in pregnant women and investigate pain intensity and functioning limitation. With the best of my knowledge and research databases, there is no proper prevalence of SIJ Pain among pregnant women in Lahore, Pakistan.

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**METHODOLGY**

In this cross sectional study, convenient sampling procedure was used to gather data. Sample size was calculated using the online Epi Tools software for calculation of sample size population (epitool.ausvet.com)(33). Total pregnant women population were 1050 of which 1000 were fulfilling the inclusion criteria whereas 41 were not and 9 were not cooperative to participate. Purpose of this research was to determine the sacro-iliac joint pain prevalence in cross section survey was conducted among pregnant women of Kannan Physiotherapy and spine clinic Lahore Pakistan. Data collected more than 7 month. Questionnaire based on questions that was related to demographic data like age, occupation, weight and hospital. The standard questions included PGQ. For instance, pain in morning, evening and night. Pain rate/intensity while performing different routine task. After collecting the data 1000 pregnant women, data was analyzed on SPSS v21. Results showed the sacroiliac joint pain was 196(19.6%) out of 1000 pregnant women.

**RESULTS**

Pregnant women often complaint about sacroiliac joint pain. Data collected in 1000 pregnant women.

Table 1: Relationship of frequency and percentage in different variable:

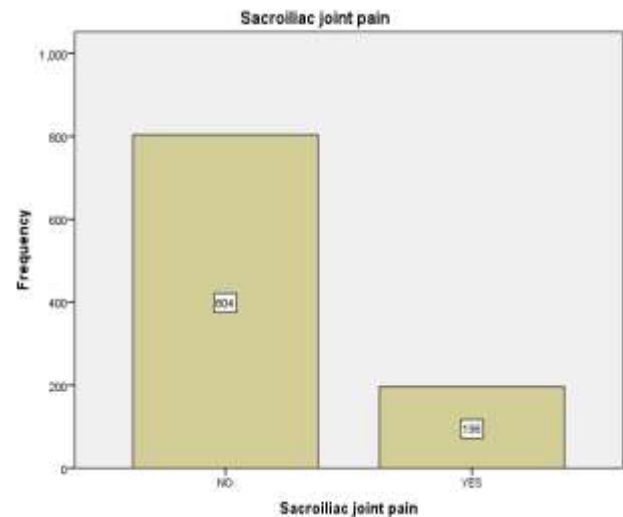
Statement	Response	Frequency	%age
Age	Mean	1000	1.5660
	Std.Deviation	.55674	1.00
	Minimum	1.00	3.00
	Maximum		
Occupation	H.W	191	97.4
	Worker	5	2.6
Blood pressure	High	29	14.8
	Low	34	17.3
	Normal	133	67.9
Weight kg	Mean	67.429	13.7584
	Std. Deviation	43.0	134.0
	Minimum		
	Maximum		
Month of pregnancy	First trimester	12	6.1
	Second trimester	36	18.4
	Third trimester	148	75.5
No of pregnancy	Primiparous	50	25.5
	Multiparous	58	29.6
	Grand multiparous	88	44.9
Sacroiliac joint pain	Yes	196	19.6
	No	804	80.4
Compression test	Yes	196	19.6
	No	804	80.4

Table 2: Standard questions:

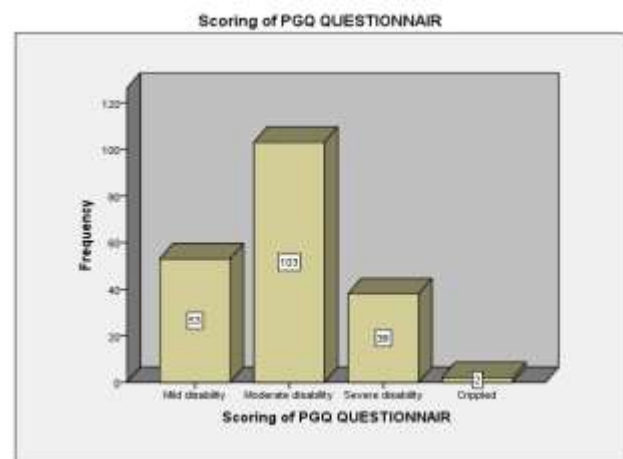
Statement	Response	Frequency	%age
Percentage	Mean	37.30	18.239
	Std. Deviation	0	85
	Minimum		
	Maximum		
Scoring of PGQ Questionnaire	Mild disability	53	27.0
	Moderate disability	103	52.6
	Sever disability	38	19.4
	Crippled	2	1.0

Total pregnant women are 1000; mean age of pregnant women 1.5660; std. deviation, 55674; minimum 1.00; maximum 3.00 but sacroiliac joint pain present only in 196(100%) pregnant women. Of which 191(97.4%) are house wife and 5(2.6%) are worker. In which 29(14.8%) are high blood pressure and 34(17.3%) are low blood pressure and 133(67.9%) are normal blood pressure. Weight mean 67.429; std. deviation 13.7584; minimum 43.0; maximum 134.0. First trimester 12(6.1%), Second trimester 36(18.4%), Third trimester 148(75.5%). Primiparous 50(25.5%), Multiparous 58(29.6%), Grand multiparous 88(44.9%) in which 804(80.4%) said they didn't feel pain whereas 196(19.6%) said feel pain. In which 196(19.6%) are positive SI compression test in pregnant women

and 804(80.4%) are negative test in pregnant women. Fig. 1:



Total pregnant women are 196, There sum of all activity or sum value divided by 75 or multiply by 100, mean 37.30; std. deviation 18.239; minimum 0; maximum 85 (Fig.1). Total pregnant women 196, in which Mild disability 53(27%); Moderate disability 103(52.6%); severe disability 38(19.4%); Crippled 2(1%) (Fig. 2).



**DISCUSSION**

A cross sectional study was used to calculate the sacroiliac joint pain in pregnant women. Data was collected from Lady Willingdon Hospital, Lady Aitchison Hospital, Sir Ganga Ram Hospital, and Jinnah Hospital. Sacroiliac joint pain were calculated with the use of PGQ and Special test (compression test, posterior provocation test).In this study standard way to perform test for examining the sacroiliac joint pain. This test helps to differentiate the sacroiliac joint pain, Lumbar pain and symphysis pain. This study show the considerable feeling of pain e.g., shooting, cramping, aching, sharp etc).In the retrospective study based on the PGQ questionnaire. This study conducted in urban by Mahishale, Arati, Borkar, Sudini Santosh. Data collected of 580 pregnant women. Confirm diagnosis of sacroiliac joint was done for 457 subjects, prevalence of sacroiliac was 65%. The prevalence of sacroiliac joint or low back was 75% in the urban pregnant population and 25% in the rural pregnant population. In another retrospective study conducted in Australian by Pierce, Heather, Homer, Caroline SE, Dahlen, Hannah G, King, Jenny. Data collected 96 women; use open and close ended

questions, or the prevalence point are 33(34%). Clinical examination of sacroiliac joint pain in pregnant women was chosen in this study. Total pregnant women population was 1050 of which 1000 were fulfilling the inclusion criteria whereas 41 were not and 9 were not cooperative to participate. Three main reasons occurred for non participants: (1) participants not sufficiently understand the language. (2) They think the questionnaire is a wasting of time. (3) Few of them were hesitating to answer clearly. The prevalence of sacroiliac joint pain among the population of 1000 pregnant women were considered of which 196(19.6%) said they feel pain while 804(80.4%) said they didn't feel pain. 116(59.2%) out of 196(19.6%) pregnant women described about their pain radiation over different regions in the body such as 24(12.2%) feel pain radiation in premium, 69(35.2%) feel in posterior thigh (affected side), 1(0.5%) feel in left buttock, 1(0.5%) feel in right buttock, 1(0.5%) feel in both buttock, 11(5.6%) feel in thigh down to knee, 7(3.6%) feel in both posteriorly, 2(1.0%) feel in middle of thigh while 80(40.8%) said no pain radiation. Different examination tests are used to diagnose the sacroiliac joint pain, such as Compression test, distraction test, posterior pelvic pain provocation test, Patrick-Faber test, Palpation test and drop test. In this study Sacroiliac joint compression joint test was used to obtain results while other test were good as well but circumstances for other test was not favorable regarding this clinical examination. The Compression test result was positive in 196(19.6%) while it was negative in 804(80.4%) pregnant women.

## CONCLUSION

It is concluded that pregnant women are at mild to moderate rate of developing sacroiliac joint pain due to repetitive bad posture or heavy weight during pregnancy. Pain intensity, disability, and functional limitation are measured in sacroiliac joint pain during pregnancy. Pregnant patients with sacroiliac joint pain have a considerable level of complaints. The overall severity of complaints is not related to previous postpartum sacroiliac pain.

**Conflict of interest:** Nil

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