Prevalence of Sacroiliac Joint Dysfunction Among Females In Lahore: A Cross Sectional Study

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Highlights:

- The present study is a cross-sectional survey to estimate the prevalence of sacroiliac joint dysfunction among females in Lahore.
- Five cluster tests and Oswestry disability questionnaire were used to diagnose the SIJ dysfunction and level of pain, respectively.
- The estimated prevalence is 46.71% among females.

Abstract:

For the past many decades, the sacroiliac joint has become a topic of concern in the literature. The sacroiliac joint dysfunction is generally acknowledged as a primary cause of low back pain. It is more common among females. The load-bearing surfaces in the SI joint, effects of pregnancy, a sedentary lifestyle, or the prolong standing position in which the sacrum is more horizontal, are thought to be associated with a higher rate of sacroiliac joint dysfuntion in females.

Objectives: This study aimed to find out the prevalence of sacroiliac joint dysfuntion and risk factors among females in Lahore, Pakistan.

Methods: The study population included 167 females with low back pain from different hospitals in Lahore. The study design was descriptive cross-sectional. Five cluster tests were performed on the subjects for confirmation of SI joint dysfunction. To assess the level of pain in the patients affected with SI joint dysfuntion, Oswestry Low Back Pain and Disability questionnaire was used.

Results: Out of 167 females, 78 (46.71%) were experiencing sacroiliac pain. The dysfunction was more common in married young ladies (58.68%). The patients with compression test (61.68%) and thigh thrust test (50.30%), out of 5 cluster tests were positive.

Conclusion: It was concluded that the prevalence of sacroiliac joint dysfunction among females in Lahore is 46.71 % and it was significantly more common among married females

The patients with SIJ had a moderate level of pain.

Key Words: Sacroiliac Joint Dysfunction, Low Back Pain, SIJ Cluster Tests, Prevalence, Risk Factors

Introduction:

Sacroiliac joint dysfunction is although very common but it is often overlooked cause of low back pain.1, 2 SIJD is commonly described as an origin of low back pain. The SIJ is defined as a true synovial joint.3The absence of its diagnostic gold standard and its anatomical position complicaties the assessment procedure and differential diagnosis. Females are most affected by this condition.4The total prevalence of sacroiliac joint dysfunction in the population has been calculated in various medical studies, which is ranged from 19.3% and 47.9% among patients with having low back pain. Around 15 to 30% of low back pain can be due to sacroiliac joint dysfunction. SIJD is age-dependent and is more prevalent in older people 60 years or above. Moreover, the prevalence of sacroiliac dysfunction in the overall population is still unidentified. The potential risk factors for the sacroiliac joint dysfunction are gender, lower BMI, pregnancy-induced changes like weak pelvic blood circulation and muscle endurance, sacroiliac joint hemorrhage occurring during birth, hormonal-induced joint laxity, and gender-related diverse biomechanical behaviors

in the sacroiliac joint. Familiar reasons are fall on butts or accident while driving. It is not difficult to diagnose this dysfunction in very initial stages by asking the patient the exact point of pain. In case of SIJD, patient puts finger on the fortin area and tells the physician or therapist about most painful point. Diagnosis with this fortin area test is highly associated with SIJD.6 Traditional treatments of sacroiliac joint dysfunction consists analgesics, anti-inflammatory agents, ice, heat, and physical rehabilitation. Physical therapy rehabilitation must emphasize on the entire abdomino-lumbo-sacro-pelvic-hip complex. This approach must be focused on articular, muscular, neural, and fascial restrictions, inhibitions, and deficiencies. The transverses abdominis is the vital muscle for the functional retraining of the core muscles. Correction of leg length discrepancies, somatic dysfunction, inflexibility, and poor posture are also essential.7 Various osteopathic techniques are employed to manage SIJD, such as; manipulation of SIJ, myofascial release, METs, strain counter strain etc.8 For the past many decades, the sacroiliac joint has become a topic of concern in the literature. The SIJD is normally acknowledged as the primary cause of pain in low back. It is more common among females. The load-bearing surfaces in the SI joint, effects of pregnancy, a sedentary lifestyle, or the prolong standing position in which the sacrum is more horizontal, are thought to be associated with a higher rate of sacroiliac joint dysfuntion in females. Therefore present research was directed to find out the prevalence of sacroiliac joint dysfunction in females of Lahore city, Pakistan.

Methods:

The ethical approval was granted by the Ethical Review Board of the University of Lahore. The study population included 167 females patients. The study design was cross-sectional. Non-probability convenient sampling technique was used. After confirming the willingness, investigators distributed questionnaires to participants. To measure functional disability, Oswestry Low Back Pain and Disability Questionnaire (ODQ) was used. The Special diagnostic tests (5 SIJ Cluster tests) were performed to confirm SIJD. The population was screened according to the inclusion and exclusion criteria, signs and symptoms, and physical examination. In this study, the Provocation tests SJI5 (distraction test, compression test, thigh thrust test, Gaenslen test, and the FABER test) were utilized for the diagnosis of SIJD.Inclusion criteria included the patients with SIJ pain or the low back pain, 20-40 years old, and patients with 3 or more than 3 positive SIJ 5 cluster tests. While the exclusion criteria was lumbar pain due to any systemic/infectious disease, lumbar/ pelvic fractures, ongoing malignancy, inability to give consent and mental illness.

SIJ - 5 Cluster Tests:

Figure 1: Compression test

Figure 2: Distraction or "gapping" test

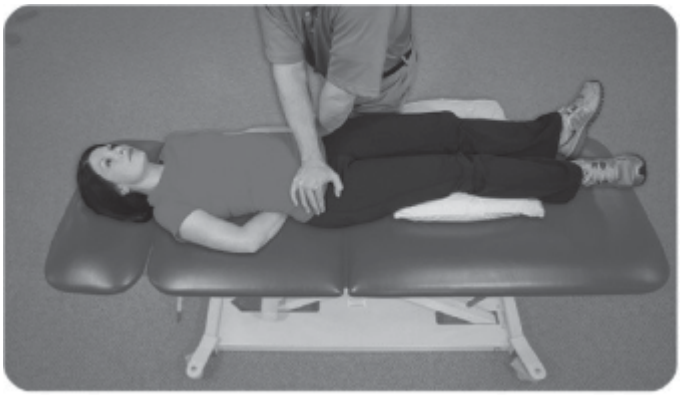

Figure 3: Thigh thrust test+

Figure 4: Patrick- Faber test

Figure 5: Gaenslen test

Statistical analysis was performed by using SPSS statistical software version 24.0. The qualitative data was presented in the form of frequency and percentage whereas quantitative data was presented in the form of mean and standard deviation

Variables	Construct	Frequency	Percentage
Compression test	Positive	103	61.68%
	Negative	64	38.32%
Distraction test	Positive	69	41.32%
	Negative	98	58.68%
Thigh thrust test	Positive	84	50.30%
	Negative	83	49.70%
Gaenslen test	Positive	83	49.7%
	Negative	84	50.3%
FABER test	Positive	81	48.50%
	Negative	86	51.50%
Sacroiliac Joint Dysfunction	Positive	78	46.71%
	Negative	89	53.29%

Table 1: Sacroiliac joint dysfunction diagnostic tests

According to Table 1, out of 167 young adults, 61.68% had positive while 38.32% had negative compression test, 41.32 % had positive while 58.68% had negative distraction test, 50.30% had positive while 49.70% had negative thigh thrust test, 49.7% had positive, and 50.3% had negative gaenslen test and 48.50% had positive while 51.50% had negative FABER test. There were 46.71% patients with positive and 53.29% were negative SIJ Dysfunction.

Pain intensity	Frequency	Percentage
No pain	8	4.79%
Mild pain	32	19.16%
Moderate pain	53	31.74%
Fairly severe	40	23.95%
Very severe	23	13.77%
Worst pain	11	6.59%

Table 2: Pain intensity associated with sacroiliac joint dysfunction

According to Table 2, out of 167 young adults, 4.79% were experiencing no pain, 19.16% were experiencing mild pain, 31.74% were experiencing moderate pain, 23.95% were experiencing fairly severe pain, 13.77% were experiencing very severe pain, and 6.59% were experiencing the worst pain.

Discussion:

Sacroiliac joint pain is one of the most common etiologies of low back pain encountered in daily practice. In the current study, those female patients were included which already had low back pain. Most of the female patients were housewives (58.1%) and married (58.7%). Usually, females suffered this disorder after

giving childbirth and during pregnancy. The prevalence observed in current study was 46.71% which is in context with the literature where it was manifested from 19.3% to 47.9% in the patient with low back pain. The prevalence of sacroiliac joint as a source of low back pain is reported 13% to 48% in various other studies.

René Toussaint et al. studied the prevalence of low back and sacroiliac joint dysfunction, which was 7.9%. These findings are quite different from the present study which has calculated the prevalence as 46.7%. Shete at al. observed the prevalence in postpartum women which is 26% who suffered from SIJ dysfunction. In outpatient studies, approximately 2.4% of all low back pain were due to the lesions of the sacroiliac joint, excluding those of infectious origin and the cases of osteitis condensans ilei. In this study, no patients were included during partum or postpartum period SIJD was significantly more common among married females (58.68%) and the patients with a positive compression test (61.68%), positive thigh thrust test (50.30%), out of 5 cluster tests. These two tests are important for the diagnosis of SIJD. A female positively diagnosed with SIJD must have one test positive of these two tests. The sacroiliac joint disorder is described as an ache experienced between the posterior iliac crest and gluteal fold especially withinside the area of the sacroiliac joint. The pain may also radiate to the posterior thigh. In pregnant ladies with back pain, SIJ pain possibility is observed almost to be 89%. Factors contributing to this symptom consist of pelvic adjustments in addition to changes to loading. This is because of an aggregate of mechanical, hormonal, circulatory, and psychosocial factors. It has been found that hormone relaxin increases 10-folds in concentration for the duration of pregnancy. Prolonged standing, awkward postures and repeated movements had been the most common etiologies. Rest was discovered to be the maximum relieving factor. BMI, standard health, smoking, the use of preventive strategies, having an assistant, and years of exercise had been observed to be associated with the prevalence of LBP. Disturbed mechanics and statics of the lower limbs also produce disorders of the sacroiliac joints and tremendous pressure that is greater at the ipsilateral joint because the extremity is subjected to a more than regular load due to the impaired function of the opposite limb. Various treatment modalities have been developed for low back pain including SIJ pain. The most commonly prescribed regime is conservative treatment, such as physical therapy, bed rest, and anti-inflammatory medications. Many studies have been conducted on the sacroiliac joint for determining its predisposing factors. Further studies are needed to be done to explore more predisposing factors for SIJD.

Conclusion:

The outcomes from this study were discovered that the prevalence of sacroiliac joint dysfunction among females in Lahore is 46.71 %. SIJD was significantly more common among married females. Moreover, SIJ pain in unmarried women was possibly due to hormonal changes during or before their menstrual cycle which increases joint laxity and makes them vulnerable to injury.

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