



Original Article

Prevalence of Symphysis Pubis Dysfunction in Pregnant Women

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ABSTRACT

Pregnancy is a period when a woman's body leads to various musculoskeletal issues including Symphysis Pubis Dysfunction (SPD). The term symphysis pubis dysfunction refers to a collection of distressing symptoms that occur in the pelvic area and cause limitation while performing activities of daily living. **Objective:** To find the Prevalence of symphysis pubis dysfunction in pregnant women. **Methods:** From June 2022 to January 2023, following a duration of 6 months, a descriptive cross-sectional study was conducted on 267 pregnant women aged 20–35 years. Those with pelvic pain during any trimester were enrolled from gynecology department of Riphah International Hospital and Al-Khidmat Razi Hospital, Rawalpindi. Participants meeting inclusion criteria were evaluated for symphysis pubic pain based on specific criteria, including (signs and symptoms, palpation, and diagnostic tests like the Positive Patrick Faber and Trendelenburg tests). Pain severity was assessed using visual analogue scale. **Results:** Out of 267 participants, 32% participants were diagnosed with symphysis pubis dysfunction while 68% participants did not have SPD. The most prevalent symptoms are turning over in the bed (79%), bending down (75%), and standing on one leg (71%) which is mostly reported by the majority of women in the third trimester with moderate pain perception. **Conclusions:** Study concluded the notable prevalence of SPD with the most prevalent symptoms turning over in the bed, bending down, and standing on one leg. These symptoms were predominantly noted among women in the third trimester, accompanied by a moderate level of pain.

INTRODUCTION

Many physiological changes occur in females during pregnancy that support the baby's healthy development and normal birth at the end of the gestation but there may be some pathological changes that may affect both maternal and fetal well-being like anencephaly, gestational diabetes mellitus, pregnancy-induced hypertension, symphysis pubis dysfunction, etc. [1, 2]. The term symphysis pubis dysfunction (SPD) refers to a collection of distressing symptoms that occur in the pelvic area. The pelvic joints stiffen up or move abnormally during pregnancy which may affect both the front and back of the pelvis [3, 4] The symphysis pubis is a fibro cartilaginous non-synovial joint that is developed by the pairing of the pubic bones [5]. Pregnancy is the most prevalent period for

SPD. An increased pelvic load, loose ligaments, and reduced muscular strength are all effects of pregnancy [6]. Other risk factors for SPD include engaging in physically demanding activity while pregnant, as well as experiencing exhaustion as a result of bad posture and a lack of fitness [7]. The musculoskeletal discomforts most frequently reported by pregnant women include pain in the lower back and the symphysis pubis area. These discomforts can be influenced by cultural and environmental factors unique to each pregnant woman's situation [8]. Pubic symphysis dysfunction is characterized by discomfort in the region of the pubic bones that increases with activity like walking, lifting, or stair climbing. The patient usually complains of, tenderness over the pubic symphysis, suprapubic edema,

swelling, waddling gait with short steps. The character of pain experienced by patients is burning, stabbing, or shooting, prolonged in duration radiating towards the abdomen, back, leg and perineum, and aggravated by movement [6, 9]. Walking and stair climbing are the most painful movements [10]. The common symptoms of pubic symphysis diastasis or dysfunction is pain which is localized in the area of pubic bones that gets worse when the patient is doing movements like the abduction of the hip, walking, lifting heavy weights, rolling over in bed or stair climbing [11]. Categorizing pregnancy-related pain based on the symptoms, it is divided into five subgroups or elements: Pelvic Girdle Syndrome, Symphysiolysis, Unilateral Sacroiliac Syndrome, Bilateral Sacroiliac Syndrome, and a miscellaneous group [12]. Pelvic girdle pain is another name that is sometimes used to refer to SPD. This condition doesn't affect the fetus but it may be quite painful and bothersome for the mother; even it can restrict maternal mobility by causing severe pain [13]. SPD is a relatively common and painful condition affecting 1/3rd of pregnant women. The main focus of this study was to check the prevalence of symphysis pubis dysfunction as there was a scarcity of data available. Previously numerous researches have been conducted on pelvic girdle pain and symphysis pubis pain in the postpartum period but the data on the prevalence of symphysis pubis pain during pregnancy was limited. In Pakistan, especially in twin cities, there is a dearth of literature. This study provided insight into the prevalence of symphysis pubis dysfunction during pregnancy in twin cities so that there is awareness about this disease in society and it can be managed properly on time.

METHODS

A descriptive cross-sectional study was conducted on 267 pregnant women aged 20-35 years, experiencing pelvic pain across all trimester of pregnancy. Duration of study was 6 months from June 2022 to January 2023. Data were collected from gynecology department of Riphah International Hospital and Al-Khidmat Razi Hospital, Rawalpindi through the convenient sampling. Participants having pelvic/pubis bone before pregnancy, having any previous medical condition which causes hip joint pain, specific previous injury/fall, and those who were taking any medications for pain relief were omitted from the study. Self-structured questionnaire was used to collect demographics and disease related information. Participants after meeting inclusion were evaluated for pubic pain by using the following diagnostic criteria which includes: 1) Significant sign and symptoms 2) Palpation 3) Diagnostic tests. According to the scoring system of SPD, two or more signs and symptoms should be present out of four. (Turning over in bed, stairs climbing, bending down,

and standing on one leg) [8, 11, 14]. In palpation testing entire anterior surface of the pubic symphysis was palpated while the patient was in supine lying. It was considered positive if pain elicited and persisted for more than 5 seconds after the removal of the examiner's hand [14] and diagnostic tests include Trendelenburg test and Patrick Faber test [15]. So according to the abovementioned criteria participants who had two out of four positive signs and symptoms with positive palpation and positive testing (Patrick Faber Test, Trendelenburg Test) were suspected to have SPD [16-18]. The severity of pain was assessed by Visual Analogue Scale [19]. Sample size was calculated by using Rao soft Software. 267 sample size was recommended by the software. Population size was 20000, margin of error was 5%, response distribution 50% and the confidence level was 90%. All the work was done after the approval from ethical review committee of Margalla Institute of Health Sciences, Rawalpindi (Ref. No. HF/154/22, dated June 14, 2022). Data were gathered after written consent from the participants. Participants had their right to ask any question regarding study or to terminate their participation at any point. Descriptive statistics were used to examine the data collected through questionnaires (e.g., mean and standard deviation). Data were presented in graphical and tabular form. All the statistical analysis were conducted using SPSS 25.0 software (SPSS Inc. Chicago IL, USA).

RESULTS

Self-structured questionnaire and diagnostic criteria for SPD was used to collect the information about demographics and disease related information from a sample of 267. The mean age of the participant was 27.19 ± 4.38 years, mean height was 163.63 ± 5.82 cm, mean weight was 67.70 ± 11.25 kg and mean BMI was 25.29 ± 4.07 . Out of 267 participants 60% females were multigravida and 40% were primigravida. 7% participants were in their first trimester, 21% participants were in the second trimester and 72% were in the third trimester. 17% women experienced pain in the first trimester, 35% experienced pain in the second trimester, and 48% experienced it in the third trimester as shown in table 1.

Table 1: Demographics and disease related information

Variables	Mean \pm SD		
Age (years)	27.19 \pm 4.38		
Weight (kg)	67.70 \pm 11.25		
Height (cm)	163.63 \pm 5.82		
BMI	25.29 \pm 4.07		
Multigravida	60%		
Primigravida	40%		
Trimester of pregnancy Onset of pain	First	Second	Third
	7%	21%	72%
	17%	35%	48%

Table 2 shows the significant sign and symptoms of SPD as “pain during turning over bed reported by 79% of participants out of total 267, pain on standing on one leg by 71% participants out of 267, pain during bending down by 75% out of 267 and pain during stair climbing” by 66% participants out of total 267.

Table 2: Signs and Symptoms of SPD

Signs and Symptoms	Percentage
Pain during turning over bed	79%
Pain on standing on one leg	71%
Pain during bending down	75%
Pain during stair climbing	66%

Table 3 shows the test that are used in the diagnosis of SPD which are “palpation testing, Patrick Faber test and Trendelenburg test” tested positive by 62%, 60% and 71% of the patients respectively out of total 267.

Table 3: Diagnostic Testing for SPD

Diagnostic Testing	Percentage
Positive Palpation test	62%
Patrick Faber test	60%
Trendelenburg test	71%

Table 4 shows that 261 (98%) patients have 2 or more sign and symptoms positive, then palpation testing was performed on those exhibited 2 or more signs and symptoms positive and out of 267, 161(60%) showed positive palpation, then out of 161, 85(32%) were positive on diagnostic testing (Patrick Faber Test, Trendelenburg Test). So, the overall prevalence of SPD was calculated as 32%.

Table 4: Prevalence of SPD

Prevalence	Percentage
Patients with 2 or more sign/symptoms positive	98%
Patients with positive palpation + 2 sign/symptoms	40%
Patients with positive diagnostic test positive sign/symptoms + positive palpation	32%
Prevalence of SPD	32%

Figure 1 is the graphical presentation of SPD prevalence.

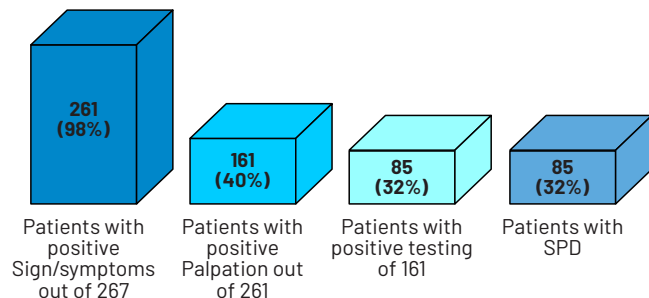


Figure 1: Graphical representation of SPD prevalence

DISCUSSION

The objective of the current study was to investigate the prevalence of Symphysis Pubis Dysfunction (SPD) among pregnant women living in the cities of Rawalpindi and

Islamabad. The outcomes of the research shed light on a substantial prevalence of SPD, which was identified at a rate of 32%. In 2021 Shahzad *et al.*, conducted a study in which they found that 46.3% experienced pain while bending down and 35% experienced severe pain during stair climbing and the positive palpation and Trendelenburg test were seen in 16% of the participants [12]. While in the current study, 75% felt pain during bending down, 66% felt pain during stair climbing and positive palpation was shown in 62% of the population and the Trendelenburg test was positive in 71%. Ramachandra *et al.*, in 2015 examined the prevalence of musculoskeletal dysfunction among pregnant women in India [8]. The findings indicated that 10.4% of pregnant women encountered symptoms indicative of SPD during their third trimester. Conversely, in the present study, the occurrences of symptoms during the first, second, and third trimesters were observed to be 17%, 35%, and 48% respectively. The variance in outcomes stems from the fact that the earlier study focused exclusively on primiparous women. Another study conducted by Mahishale *et al.*, in 2016 on the prevalence of pattern of pregnancy-induced pelvic girdle pain and lower back pain in urban and rural populations concluded that the prevalence of anterior pelvic pain was 15% and the prevalence of pelvic girdle pain and lower back pain in urban population was 75% and in rural population was 25% [20]. While in the current study, it turned out to be 32%. The different results were due to different inclusion criteria used in the previous study as they included those pregnant women who had lower back pain and pregnancy-related pelvic girdle pain with gestation age 16-40 weeks. Howell *et al.*, conducted a study in 2012 on pregnancy-related symphysis pubis dysfunction management and postpartum rehabilitation and found that there was severe pain experienced in symphysis pubis dysfunction [6]. While in the current study most patients experienced pain on a moderate level. The difference in severity was because, in the previous study, they included only those participants who were in their third trimester (30 weeks pregnant). The study's scope is restricted due to a limited sample size and its concentration on the twin cities of Rawalpindi and Islamabad. Consequently, the outcomes cannot be extended to the broader population.

CONCLUSIONS

Study concluded the notable prevalence of SPD with the most prevalent symptoms turning over in the bed, bending down, and standing on one leg. These symptoms were predominantly noted among women in the third trimester, accompanied by a moderate level of pain.

Authors Contribution

Conceptualization: HF, KB, MBM, AG, FA

Methodology: HF, AG

Formal Analysis: KB

Writing-review and editing: HF, KB, MBM, AG, FA

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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