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RESEARCH ARTICLE

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## PREGNANCY-RELATED SACRO-ILIAC JOINT PAIN RELIEF IS POSSIBLE THROUGH APPROPRIATE PHYSIOTHERAPY

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### ABSTRACT

Pregnancy brings along lots of changes in the mothers' bodies which adversely affect their health and activities of daily life (ADL) like sacroiliac joint (SIJ) pain. **Objective:** To ascertain the extent and pattern of sacro-iliac joint pain among pregnant and postnatal women reporting at a tertiary care hospital in north India. To assess the impact of physiotherapeutic intervention on these women. **Methods:** The target population consisted of women in the ante and post-natal stages, randomly selected from the Obstetrics and Gynecology OPD at a tertiary care hospital in northern India. They were asked about the care and precautions taken by them about SIJ pain during pregnancy and lactation. The data were collected using an interview schedule which included the socio-demographic profile, fitness problems, extent and pattern of sacro-iliac joint pain, obstetric history, and self-coping mechanisms used by the women for the same. They were advised to do SIJ light stretching exercises, isometric back and abdominal exercises, hot water fomentation, and back massage. The impact of physiotherapeutic intervention on these women was assessed. **Results & Conclusion:** Of the 174 subjects, 26 (14.9%) had SIJ pain. The impact of physiotherapeutic intervention on both ante-natal and postnatal women with SI joint pain showed significant improvement.

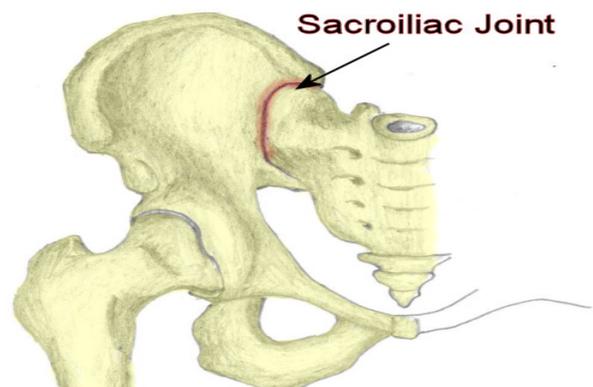
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### INTRODUCTION

Physical, postural, bio-mechanical, and hormonal changes occur throughout the 9 months of pregnancy. Skeletal tissue, muscle and connective tissue, blood volume, cardiac output, body weight, and posture are affected. This frequently necessitates many adaptations (1,2). These are gradually reversed in 6 months during the postpartum stage. The SI joints are located between the iliac bones and the sacrum, connecting the spine to the hips providing support and/or stability and play a major role in absorbing the impact when walking and lifting. From the back, the SI joints are located below the waist where two dimples are visible. SIJ pain is common among pregnant women affecting the back of the pelvis, the hips, and sometimes the legs. This kind of pain can last through delivery and into the postpartum period. Due to the hormonal effects of increased progesterone and relaxin during pregnancy there is reduced support and increased mobility in structures to which muscles and tendons are attached. Because of these changes and greater joint mobility, the hip and knee joints have less stability, which often causes discomfort and loss of balance. Abdominal fascia loosens due to hormonal effects early in pregnancy, thus allowing for greater stretching of the abdominal muscles (3,4). As more pregnant women engage in demanding occupations and sports, obstetricians, midwives, and pregnant women themselves must acquire knowledge/skills about the

physical changes of the pregnancy and the effect of exercise on the mother and fetus (4). A proper physical exercise regimen during antenatal care helps the women have a safe pregnancy and delivery (5). It has also been documented that most women (90%) have some or other fitness-related problems especially back pain during pregnancy and puerperium (6).



Wrong posture during sitting, standing, lying, and while picking up objects affects the health of pregnant and postnatal women (7).

Backache during pregnancy is largely a side effect of improper sitting positions (8). So, it is important to avoid these wrong sitting positions during pregnancy. Sitting with the legs hanging position increases blood flow to the legs. Swelling of the legs is common during pregnancy. An improper sitting position aggravates this condition. SIJ pain arises from the joint structures. SIJ pain is one of the most common causes of lower back pain in pregnant women. SIJ dysfunction generally occurs due to the adoption of wrong posture and abnormal movement of SIJ structures that results in pain. Evidence-based diagnosis and treatment of the painful sacro-iliac joint in pregnant women show good improvement, e.g. Lumbopelvic stabilization training and corticosteroid injections into the intra-articular space. (9).

**Objective:** To ascertain the extent and pattern of SIJ pain pattern among pregnant and postnatal women reporting at a tertiary care hospital in north India. To assess the impact of physiotherapeutic intervention on these women.

## METHODOLOGY

The study was conducted on female subjects aged 18-35 years of ages during their ante-natal and post-natal stages, in the gynecology /physiotherapy OPD of PGIMER, Chandigarh, between 2014-17. Pregnant women were asked about the extent and pattern of SIJ pain faced by them. They were advised to do SI joint light stretching exercises, isometric back and abdominal exercises, hot water fomentation, and back massage. They were asked about the care and precautions taken by them about SIJ pain during pregnancy and lactation. Their treatment seeking behaviour was also elicited.

Scoring was done for existing practices of the respondents (n=26) regarding their posture (sitting/standing/lying) and daily activities (mopping/brooming /doing utensils/washing clothes/picking up things from the floor). The exercise protocol, physiotherapeutic intervention, postural corrections, and precautions were advised as per their problems. The results were duly recorded.

The data was analyzed with the help of standard software by a statistician. The values of all the variables were expressed as mean and standard deviation. Respondents were explained about the purpose of the study. Their written consent for participation was obtained before the investigation. All data was kept confidential. Approval from the respective institute's ethical committee was obtained before initiating the data collection.

## RESULTS

A total of 174 numbers of participants were included in the study: out of which, 156 were ante-natal and 18 were postnatal women. There were 159 women who delivered their babies normally, 13 cesarean and 2 forceps deliveries. Out of 174 subjects, 159 were primigravida and 15 were second time pregnant. Overall, 26 subjects had SIJ pain (14.9 %) in the ante-natal stage. They developed the problem before the delivery of their baby while their body weight was increasing. SIJ pain grades of these 26 subjects were A (10), B (8), and C (8).

Physiotherapeutic treatment was delivered to them and they showed significant improvement. Group-wise and severity-wise problem breakup of the SIJ pain subjects are given in the Table -1, at the baseline and till the sixth follow-up stages (Table-2).

**Table 1. SIJ pain starting from baseline and till sixth follow-ups**

Baseline SIJ pain (VAS score)	Number of respondents 26 (n=26)
0-5	0
6	8
7	10
8	5
9	3

**Table 2. Grade of SIJ pain (VAS score): at 6<sup>th</sup> follow-up**

Follow up-6 VAS score	Number of respondents 26 (n=26)
0	1
1	4
2	6
3	7
4	4
5	2
6	1
7	1

It was found that the maximum number of patients were in stages 6, 7, and 8 of VAS pain score; 3 patients had very severe pain level of 1 VAS score 9. After receiving physiotherapeutic management, the VAS pain level score reduced appreciably (Table 2). Maximum number of patient's pain level came down to less than 5 VAS score. Only 1 patient was in the level-6 and 1 patient was in the level-7. No patients were in the level-8 & level-9. So, very clearly, at each follow-up stage, there was a tendency of improvement, and the subjects were cured from the problems gradually till the last stage, i.e., follow-up-6.

## DISCUSSION

Having a baby is a wonderful experience for women for a good reason, but it is a fragile time for them. They experience various fitness-related problems because of growing uterus and related changes during pregnancy and after delivery. These are related to the biomechanical, anatomical, physiological, and hormonal (11) changes related to maternity. These changes are especially biomechanical effects that impact women's everyday activity and productivity (12). The pain scale reduced markedly after the intervention. The severity of symptoms was also reduced in women with prenatal SIJ pain along with postnatal neck and shoulder pain, and coccydynia (13). It was found that before training, very few women were trying to cope with their fitness-related health problems during the prenatal and postnatal period. Very few women knew about the required exercises and other interventions. The women had only knowledge about using hot fomentation to reduce symptoms. The physical and hormonal (14) changes that occur in pregnancy, such as a growing uterus, result in various physical health problems such as backache, tailbone pain, balance & postural problems, swelling & pain in the calf muscles, gestational diabetes, etc. Movements across the joints can also become very painful, particularly in pregnancy (15). This is worsened by the exaggerated lordosis of pregnancy, and increased load on the lower spine and the upper femoral heads (16). The effect of these anatomical changes and the resultant lower back pain and other problems etc. can lead to considerable physical dysfunction.

Nowadays, most of the women are working during pregnancy time. Various health issues related to pregnancy pose a threat to their fitness and as a result, they must face problems in their professional life also (17, 18). Some women are forced to leave or change their profession just because of a lack of fitness or problems related to pregnancy. In this study, some women were employed, who need to do long hours of desk work in the office. This often leads to lower and upper back pain. It is very much associated with working postures. Back pain was the most common complaint of pregnant women including SIJ pain in this study also (12). Most of them did not have an awareness of physical fitness and exercise. Maximum among them were housewives. They did not maintain correct posture while picking up objects and doing household chores. Most of them did not do any regular physical activity or exercise which seems to have affected their fitness level. Exercised during pregnancy (19, 20) offer many physical and emotional benefits which were seen in this study also. Most prenatal and postnatal women in this study suffered from many physical problems. In our society, most women get married at the age of 20-25 years which is also the main productive time in life (21). Even today, in India many females are not allowed to go outside the home before and after marriage for a walk or

exercise. Also, they do not have much knowledge about the various changes that occur during pregnancy and are not prepared for motherhood which affects their health (22). A maternity belt can help stabilize the lower back and abdominal muscles and improve overall effectiveness for preventing or alleviating pain and balance during and after pregnancy. Some women were advised to use maternity belts and showed good results. It also helps them do their daily living activities and move around comfortably. So, we can conclude that various types of exercises, postural advice, precautions, maternity belts, and behavioral therapy can reduce and even give complete relief from different types of problems of ante and post-natal women.

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