

## A STUDY OF INCIDENCE AND FACTORS FOR LOW BACK PAIN DURING PREGNANCY IN RURAL INDIAN WOMEN

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### ABSTRACT

**Introduction:** Pregnant women are at an increased risk of back pain due to hormonal, physiological, anatomical, psychological and mechanical factors. The incidence and factors may be different among rural and urban women; and primi-gravidae and multigravidae. The causes of back pain are also varied among pregnant women.

**Aims and Objectives:** The present study was conducted to find out the incidence and factors for low back pain among primi-gravida and multi-gravida rural women.

**Material and Methods:** A prospective observational study in the Physiotherapy department of a rural tertiary hospital of central India on 100 subjects comprising of primigravida and multigravida pregnant females in their last trimester in the age group of 20-30 years.

**Observations and Result:** Out of hundred subjects that were studied for the incidence of back pain, fifty-five (55%) had low back pain and the incidence was found to be maximum in primigravida (67%). The commonest cause of the pain was of muscular origin in 31%. The maximum incidence of low back pain of 44% was found in the age group of 22-26.

**Conclusion:** In the rural setup, the incidence of pain is common in third trimester and mostly of muscular origin and in low back area. The incidence of back pain is more among primigravidae.

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## INTRODUCTION

There are many causes of back pain and a pregnant woman is not immune to the ills her peers are prone to. To list a few, the causes of back problems are spondylosis, prolapsed intervertebral disc, symphysis pain, coccydynia, sciatica, spondylolisthesis etc. Pregnant women are more at risk, as a result of physiological (e.g. joint laxity), anatomical (e.g. increased lumbar curve), psychological (e.g. inability to concentrate) and mechanical (e.g. altered center of mass) changes that take place during pregnancy.<sup>1</sup>

Various studies have proved to show that 50-60 % women suffer from low back pain. <sup>2</sup>Knowledge of the type of back pain, that is, whether it is lumbar, sacroiliac, or nocturnal can help institute targeted treatment according to the relevant pathophysiology.<sup>3</sup> It is essential that the woman be fully informed about her condition and that support networks are in place to enable her to manage it. Hilde et al 2002 stated that there was no evidence to suggest that advice to be active is harmful, but there is evidence to suggest that prolonged bed rest is, it would therefore be wise to advise the women to

remain active within their pain range. <sup>4</sup>If symptoms are less acute, a reduction in overall activity is still advisable, but with a similar approach to managing symptoms and maintaining back care and posture. The expert with regard to women's function is the physiotherapist. The women's health physiotherapist will be able to help her use her core skills along with the obstetric knowledge to her benefit. This is an essential role in enabling the women manage their symptoms and would include how to sit, to lie, to move with minimal efforts and least pain.<sup>5</sup> The ladder to motherhood may be fruitful with contentment and bliss but apart from this a correct posture of back with proper exercise regimen is recommended for a painless back during pregnancy.

Since there is lack of studies conducted in rural pregnant women of India, the present study was undertaken to find out the incidence of common origin of low back pain in third trimester in pregnant women. As the incidence of low back pain is on the rise, our study also aimed to find out the most common origin of back pain and whether the pain is more common among multigravidae, so that appropriate preventive measures could be instituted for the rural population.

## MATERIAL AND METHODS

A prospective observational study was conducted in the Physiotherapy department of a rural tertiary hospital of central India. The subjects in the age group of 20-30 years were recruited from Out-patient department of Obstetrics and Gynaecology and from the Maternity wards. A sample of hundred subjects was taken from January 2016 to December 2016 based on inclusion and exclusion criteria detailed below. A prior written informed consent was taken from all the participants. Prior approval for the study was obtained from the Institutional Ethics Committee. A detailed history was obtained from primigravida and multigravida pregnant females in last trimester with the help of a pre-designed assessment profoma. The information about previous pregnancies and related data was found from medical records. A proper observation of posture as well as their pain assessment was done. Subjective perception of pain during movement and pain at rest were scored on a numeric rating scale (NRS) comprising of 11 point scale from 0 (no pain) to 10 (maximum pain).<sup>6</sup> A detailed muscular assessment and special test were done (as given in appendix) according to the limitation of a pregnant female in her last trimester.

### Inclusion Criteria

- Multigravidae and primigravidae in their last trimester.
- Females who came 1 or 2 day prior to delivery.

### Exclusion Criteria

- Participantson complete bed rest after 5 months of pregnancy.
- Genital prolapse or other conditions like cancer cervix.
- History of kidney disease, tuberculosis and visceral disease.
- History of falls, accidents and trauma.

### Tools and material

Pen, pencil, NRS score, Assessment profoma

## OBSERVATIONS AND RESULTS

We have done a survey on hundred participants and incidence of low back pain in pregnancy was found to be among fifty-five participants (55%), out of which 37 (67%) were primigravida and 18 (33%) were multigravida. (Fig.1) The back pain was more common among primigravida (in thirty seven out of 55 primigravida participants -67%) and less common in multigravida (in eighteen out of 45 multigravida participants - 40%). This result was statistically significant at  $p < .05$  (chi-square = 7.438,  $p$ -value of .006386).

Incidence of pain in age group of 18-22 years was found to be eighteen (33%), in age group of 22- 26 years was found to be twenty- four (44%) and in age group of 26 and above years was found to thirteen (23%). Hence, the incidence of low back pain was found maximum in the age group of 22-26 that was twenty - four (44%).

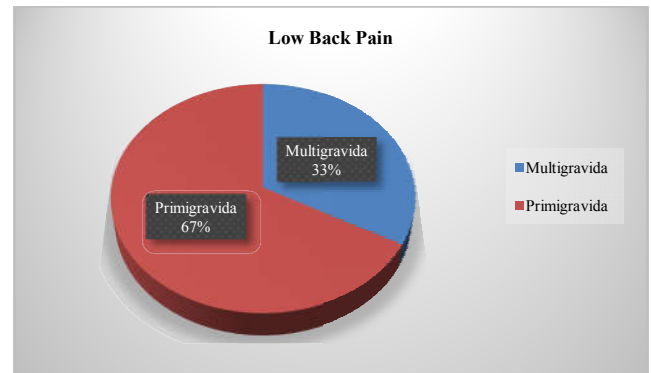


Fig 1 Distribution of participants with low back pain on the basis of parity

Table 1 Distribution of patients according to the origin of pain

Type of Pain	Number of participants	Percentage
Muscular origin	17	31
Neural origin	13	24
Bony origin	10	18
Disc origin	7	13
Sacro-iliac origin	8	14
Total	55	100

Type of low back pain, among fifty- five females with low back pain (55%) according to their origin, were found to be pain of muscular origin in seventeen (31%), pain of neural origin in thirteen (24%), pain of bony origin in ten (18%), pain of disc origin in seven (13%) and pain of sacro- iliac origin in eight (14%) of females. (Table -1)

The pain intensity on Numeric rating scale (NRS) was found to range between 1-3 in 80% of the participants.

## DISCUSSION

Main aim of the study was to find out the incidence of low back pain during pregnancy in women of rural area in their last trimester. Hundred patients were considered for the incidence of back pain and pelvis pain out of which 55% had complaints of low back pain and 45% did not have back pain.

The low back pain specifically occurs in the last trimester of pregnancy and is due to connective tissue laxity due to the production of relaxing hormone and overstretching of the back ligament due to exaggerated lordosis. The pain rating on Numeric rating scale score was seen to be less i.e. between 1-3 in the rural set up, since these women are subjected to a very active working life style. Most of the patients evaluated were farmers and laborers who have a very stable spine to carry the pregnant uterus. As the females in the rural area have an active life style and more indulged in manual labour, they have comparatively lesser pain scores in the third trimester.

It was mostly found in primigravidae in the age group of 22-26. Other studies have also found higher incidence of back pain in younger women.<sup>7,8</sup> Back pain was more common among primigravidae in our study. Some studies say it is more common during first pregnancy.<sup>9</sup> Our results were different from other studies, which say that lower back pain is more common among multigravidas especially grand multigravida due to changes in laxity of supporting soft tissues under the hormonal influences and repetitive overloading of pre-weakened structures.<sup>10</sup>

The majority of females in last trimester were found to have low back pain of muscular origin. The muscular labour origin pain is mostly due to overstretching of the back ligaments, the

change in the center of gravity, constant mechanical stress, fatigue of the supporting muscles and gradual creep of tissues may stress part of motor unit.<sup>11</sup>A correlation has been found between core muscle strength and disability related to low back pain during pregnancy.<sup>12</sup>With the demand of leading normal life throughout pregnancy, the pregnant women are forced into performing demanding tasks, in the form of long hours of standing, lifting heavy weights and frequent bending, which require good proximal stability which can only be provided by the deep or local core stabilizers of the trunk.

Proper ergonomics advice and a well-planned exercise program, if given to patients would decrease the incidence of low back pain, as it would help in proper alignment of spine and pelvis, with resultant decrease in musculoskeletal problems.

#### Limitations faced during study

The patients were not very cooperative with low intelligence. They did not understand the importance of problems, which they would face due to back pain in the last trimester.

They were negligent about bad posture and staying well aligned.

#### Suggestions

A psychological approach should be used to attain the confidence of patients

A general awareness program should be given in verbal, leaflets and pamphlets.

A long time survey should be done with a larger number of patients.

#### CONCLUSION

The study has concluded that in the rural setup the incidence of pain is common in third trimester. Pain is commonly of muscular origin mostly in low back area. It is more prevalent in the age group between twenty-two to twenty-six years. The incidence of back pain is mostly in primigravidae than multigravidae.

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