

# Comparison of Low Back Pain in Working and Non-Working Pregnant Females

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## ABSTRACT

**Background:** Pregnancy is the period during which a fetus develops inside the uterus or womb of a female. Low back pain is common during pregnancy, and it can have serious effects on physical, mental, emotional health during daily activities of living. Job routine commitments in working women may have impact on the level of low back pain during.

**Objective:** To compare the low back pain in working and non-working pregnant females.

**Methodology:** This was a descriptive cross-sectional study. The data was collected through validated Oswestry Disability Questionnaire and numeric pain rating scale from 121 pregnant females, 25 working and 96 non-working females, between the ages of 20 to 40 years with having low back pain working or non-working from Fatima Memorial Hospital, Lahore from October 2020 to March 2021 using non-probability convenience sampling. Statistical analysis was performed using SPSS 25.0 software.

**Result:** The mean age of the study is 27.91. Independent t-test showed statistically non-significant difference between back pain of working (n=25, M=5.76, SD=0.413) and non-working (n=95, M=5.78, SD=.186) females,  $t(120)=.080$ ,  $p=.936$ . the 95% confidence interval was -.0798 to 0.865. so, it failed to reject the null hypothesis. Also, there was no statistically significant difference between disability of working (n=25, M=12.68, SD=.8112) and non-working (n=95, M=15.27, SD=8.350) females.  $t(120)=-1.390$ ,  $p=.167$ . the 95% confidence interval was -6.282 to 1.100. so, it failed to reject the null hypothesis

**Conclusion:** The findings of study concluded that both working and non-working females have a statistically non-significant, equal level of pain and disability due to low back pain during pregnancy.

**Keywords:** Pregnancy, Low Back Pain, Working Women, Non-Working Women, Housewife, Female Job

## INTRODUCTION

Pregnancy is the time during which a foetus develops within the uterus or womb of a female. It is a natural biological phenomenon that all women undergo at some point in their lives. For some, it is a positive experience, whereas for others, it can be stressful.(1) During this nine-month period, hormonal, psychological, physical, and circulatory changes take place within the woman's body to prepare it for pregnancy. These alterations are also associated with additional issues. Low back pain is one of the most prevalent of these issues. Back pain is frequently accompanied by musculoskeletal issues.(2) When compared to non-pregnant settings, low back pain is significantly more common during pregnancy. Back pain prevalence rates during current pregnancy vary from 61% to 88%, compared to a one-year prevalence of back pain among women of the same age as 40% of the general population, regardless of aetiology.(3)

The prevalence of low back pain is significantly higher during pregnancy. In the third trimester, the prevalence of low back pain was 62.1% in Lahore, Pakistan.(4) In pregnancy, there are three types of back pain: posterior pelvic pain and lumbar pain. During pregnancy, pain typically occurs in the sacroiliac joints, pubic symphysis, and low back region. (5, 6) This pain, unlike radiculopathy, persists above the knees.(7) Low back pain is generic because it does not fit into any diagnostic category. Research from the past shows that there are many things that can cause low back pain, such as loose ligaments and a change in the centre of gravity when a woman's weight shifts forward in the second and third trimesters of pregnancy.(8)

Besides these factors one of important factor for low back pain is occupation or being employed or working women that are work in a confined area. Pregnant women who work night shifts and long duty hours have an elevated risk of developing pregnancy-related health problems.(9, 10) Using the Oswestry scale, compare the prevalence of low back pain in working versus non-working women, so that working women can take as much time off from their job/work area as possible to alleviate their back pains with more rest.(11) Second, it has been observed pregnant, non-working patients with back problems. A known relationship

between back pain and non-working women with pregnancy would open the door to further investigation and pin point preventive and treatment protocols.(12)

## MATERIAL & METHOD

It was a descriptive cross-sectional study, conducted from October 2020 to March 2021 at Fatima Memorial Hospital in Lahore. n = 121 was the calculated sample size. In groups, 96 non-working women and 48 working women will be recruited at a ratio of 2:1 (96 non-working to 48 working). With an effect size of  $d = 0.5$ ,  $\alpha = 0.05$ , and power = 0.80, the sample size is derived from the g. power calculation v.3.1 software using the parameters  $d = 0.5$ ,  $\alpha = 0.05$ , and power = 0.80. For data collection, a non-probability convenience sampling technique was utilized. Pregnant Women of 20-to 40-year-age in the second and third trimesters (12th week of pregnancy to birth (40th week) or 4 to 9 months of pregnancy) with low back pain were included. Further, the study included pregnant women with low back pain, whether or not they were working, as well as those with mechanical back pain. (13) Prior to data collection, the respective authorized body of Fatima Memorial Hospital, Lahore, granted approval. Before data collection, each participant was given a consent form. The data was collected from second and third-trimester pregnant women using a self-administered Oswestry Disability Index questionnaire and a numeric pain rating scale (NPRS).(14) Construct validity (Cronbach alpha = 0.877) and reliability of the Oswestry questionnaire were validated.(15) The pregnant females with complicated pregnancy, having low back pain due to causes other than mechanical, systemic or infectious disease, trauma history, and tumors were excluded.(16, 17)

**Data Analysis procedure:** Using SPSS 25.0 software, statistical analysis was performed. The mean and standard deviation of the numeric pain rating scale (NPRS) and the Oswestry disability index (ODI) were calculated and depicted using a histogram. Comparative analysis between groups was performed using independent t tests.

**RESULTS**

Out of 121, 25 women were working and 96 were not. Data from 121 patients was analyzed. The mean age of patients was 27.91, with a standard deviation of 4.539. The mean value of the Oswestry disability index score of 25 workers was 12.68, with an SD of 8.112. The mean value of the Oswestry disability index score of 96 non-working was 15.27, with an SD of 8.35.

The data for pain and disability in people working and not working was compared. An independent t-test was conducted to determine if a difference existed between the low back pain and disability of working and non-working pregnant females who were under normal follow-up at Fatima Memorial Hospital, Lahore. There was no statistically significant difference between the back pain of working (n = 25, M = 5.76, SD = 0.413) and non-working (n = 95, M = 5.78, SD = 0.186) females, as seen in table 1.  $t(120) = -0.080$ ,  $p = 0.936$ . The 95% confidence interval was -0.798 to 0.865, so it failed to reject the null hypothesis. Furthermore, there was no statistically significant difference in working (n = 25, M = 12.68, SD = 8.12) and non-working (n = 95, M = 15.27, SD = 8.35) females' disability.  $t(120) = -1.390$ ,  $p = .167$ . The 95% confidence interval was -6.282 to 1.100, so it failed to reject the null hypothesis.

Table 1: Comparison of Mean, Pain, and Disability among working and non-working pregnant females

	Working N=25 Mean + SD	Non-Working N=95 Mean + SD	P Value
Disability	12.68+8.112	15.27+8.350	0.167
Pain	5.76+2.067	5.78+1.813	0.936

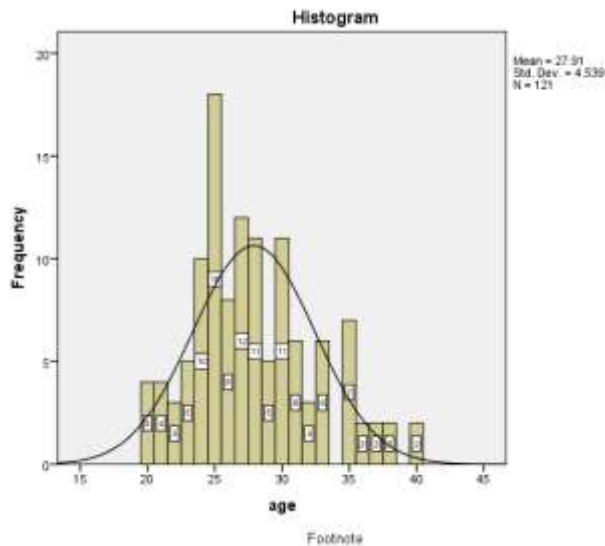


Figure 1: Average Age

**DISCUSSION**

The findings of this research reveal that back pain and disability due to back pain in the second and third trimesters of pregnancy among working and nonworking pregnant women are comparable and do not differ significantly. As compared to non-working pregnant women, there was no evidence of a statistically significant effect of work on pain and disability. Despite this, it was determined that the mean Oswestry scores for non-working shows were slightly higher, which may be attributable to other factors such as the total number of patients, the number of children women have, and the amount of housework they perform. The pain mean is identical for employed and unemployed women. Surprisingly, non-working women are reported to have a slightly higher rate of disability. Numerous researchers have demonstrated

a correlation between working women and disability, but this may be due to "workplace," "job task," or other environmental factors.

According to the findings of one study, 84.6% of pregnant women experience back pain. Both preoccupation and previous back pain were shown to be linked with back discomfort experienced during pregnancy. It was shown that there was a statistical connection between the absolute ODQ score and the level of pain experienced in terms of the utilitarian restriction handicap (VAS score). Individual reflection seated and standing behavior, sexual encounters, and participation in public activities all had a role. Both one's occupation and a history of having back pain in the past were risk factors for experiencing back pain while pregnant. The greater the score on the VAS, the greater the influence that the ODQ has. Consideration of oneself alone, sitting, standing, sexual activity, and participation in public activities all had a significant impact.(18)

According to the findings of a number of studies, there are factors related to a woman's employment that might contribute to back pain when she is pregnant and working. A study was conducted to evaluate the occupational factors that are connected with back pain in pregnant women who work in administration, human services, or higher education. At 20 weeks of pregnancy, an employee's level of discomfort was negatively connected with both the availability of rest breaks and the employee's level of autonomy in the workplace. At 34 weeks of pregnancy, a significant correlation was found between the presence of back pain and either being in a restricted location or being in a place that was limited. According to the findings of the study, reducing the number of rest breaks that pregnant women are permitted to take and encouraging them to exercise better self-control at work may help pregnant women have less severe back pain throughout their pregnancies.(19)

In another part the same study, the progression of pregnancy-related low back discomfort and impedance was investigated during the third trimester. During the third trimester, I had a rise in pain blockage. Pain catastrophizing at 24 weeks of gestation was correlated with increases in pregnancy-related low back pain, and this connection persisted over time (between 28 and 36 weeks). In addition to the anguish, researchers found a correlation between similar traits and a rise in pregnancy-related low back pain impedance. Because of this, the researchers were able to distinguish between a number of predetermined traits that are associated with an increase in discomfort throughout the third trimester. (20) The findings suggest that it is appropriate to study the effectiveness of medications that target both catastrophizing and sorrow (such as cognitive behavioral therapy) in the treatment of pain blocking. This is the case since both catastrophizing and sorrow may be adjusted. A follow-up study of pelvic girdle pain highlights the significance of pain evaluation in the lumbopelvic area during pregnancy and in the postpartum period for the purpose of identifying women who are at risk for chronic back pain. Significant pain in the pelvic girdle, which may linger for as long as eleven years and affects one in ten pregnant women. It is necessary to do research into the mechanisms that underlie the lack of a statistically significant difference in terms of disability and back pain experienced by pregnant women who work as opposed to those who do not work. It's possible that this was brought on by a low turnout of participants, rigid scheduling requirements, or the collection of data from a single institution.(21)

**CONCLUSION**

Overall, this study indicated that comparisons of back pain and disability in pregnant female workers and non-workers differ slightly but are not statistically significant. This study was conducted with a small number of participants over a brief period. It is necessary to conduct additional research comparing back pain and disability in specified occupation working pregnant women and non-working pregnant women. This should be conducted over a longer period with a strict baseline so that pain and disability can be monitored more closely, and pain persistence or resolution &

disability can be determined to aid physiotherapists and physicians in intervening and acting in the best interest of their patients. There is also the potential for future studies to concentrate on ergonomics and contributing factors in relation to pain and disability.

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