

# Correlation of Low Back Pain and Its Function Limitation Activity in Daily Life Among Office Worker

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## ABSTRACT

**INTRODUCTION:** Low back pain is associated with physical demands of the workplace, social support, and pain. The normal degenerative aging process, epidemiological studies reveal that poor ergonomic factors in the workplace contribute to low back pain in a back. Lifting or carrying loads, having a static posture for a long time and frequent bending and twisting have the physical load risk factors consistently associated with work-related back disorders.

**OBJECTIVE:** To correlate the Oswestry Disability Index and Quebec Back Pain Disability Scale in Office worker.

**METHOD:** 110 Office worker were selected for the study and the age between 30 to 45 year. A correlation study was conducted between Oswestry disability index and Quebec Back pain disability scale. Through Digital form.

**RESULTS:** Spearman's rho correlation was used for analyse data by using SPSS 20.00. Significant and very strong positive correlation was found between Oswestry disability index and Quebec back pain scale ( $r=0.91$  &  $p<0.05$ ) in Office worker.

**CONCLUSION:** Oswestry disability index and Quebec back pain scale were correlated in Office worker. Significant and very strong positive correlation found between pain and functional activity.

**Keywords:** Oswestry disability index, Quebec back pain scale, Pain, Functional Activity, Office worker

## INTRODUCTION

The modern world has increasingly grown more mechanized, with an increase in computer use, a decrease in physical exercise, and a rise in the risk of different diseases and musculoskeletal conditions. Two thirds of persons have experienced LBP at some point in their lives.<sup>[1]</sup> Over 12% to 44% of adults experience low back pain (LBP) at any given moment, making it a significant health issue.<sup>[2]</sup> Office workers

are frequently affected by LBP, with a one-year frequency of 23% to 38%.<sup>[3-5]</sup> low back pain (LBP) is the most common cause of work-related disability and the most costly cause. When it comes to workers compensation and medical costs, low back pain (LBP) is the most costly cause of work-related disability among individuals under 45 years of age.<sup>[6]</sup> It is also the most common cause of work-related disability. Over 100 billion US dollars are spent

annually on LBP in the USA. Any back pain, regardless of origin, that is felt between the ribs and the top of the leg is considered low back pain. Any back pain that develops during the course of work and is clinically determined to have been either partially or definitely caused by the claimant's job is referred to as work-related low back pain.<sup>[7]</sup>

Low back illnesses include soft tissue and muscle injuries as well as spinal disc issues including spondylolisthesis and hernias. Epidemiological studies show that, in addition to the natural degenerative aging process, poor workplace ergonomics can exacerbate low back diseases in people with healthy backs or hasten the deterioration of backs that are already damaged. An increased load or strain on the back is a result of poor ergonomic work conditions. Numerous circumstances, including as lifting, twisting, bending, stretching, uncomfortable motions, and static postures, might cause this. Physical labor, handling objects by hand, and operating a vehicle are among the tasks (where whole body vibration is recognized to be another significant element).<sup>[7]</sup> Although bone scans or x-rays may reveal disorders connected to the spinal discs, these tests frequently fail to identify additional anomalies, such as injury to the muscles and other soft tissues. It is really said that 95% of low back diseases are "non-specific".<sup>[7]</sup> Many risk variables, such as gender, age, lifestyle, psychosocial profile, physical demands of the job, social support, and pain perception, are linked to low back pain. Within two to four weeks, low back pain patients related to a first episode may be resolved. According to observations, people with low back pain issues may experience significant physical, social, and psychological disturbances that may have an impact on their ability to do their jobs. Loss of bodily function and declining general health are examples of the physical consequences.<sup>[8]</sup>

Low back pain has been found to be highly prevalent and incisive in office workers. Inappropriate low back flexion or rotation,

as well as other working environmental variables, may be the cause of this, as well as their extended sitting hours. But there isn't enough research available currently on the modifiable factors that contribute to low back pain (LBP) in office workers in contemporary work settings where extensive computer use is typical. The purpose of this study was to investigate the relationships between occupational risk factors and lower back pain (LBP) among office workers who use computers.<sup>[9]</sup>

## **MATERIALS & METHODS**

A cross-sectional observational study was undertaken among Office worker. The study was conducted those who willing to participated and between the age group of 30 to 45 year. A total of 110 Office worker completed the survey and were included in the study. All student were explained about the study and consent was taken for those who were asked to fill the questionnaire for low back pain and functional activity, which was a valid and responsive instrument that can serve as a diagnostic tool to determine the low back pain level and functional limitation activity. Modified Oswestry disability index for Low back pain and Quebec back pain disability index for functional activity.

Fairbank et al. (1980) established a well-defined Modified Oswestry Disability Index (MODI) for low back pain. Pain, personal care, lifting, walking, sitting, standing, sleeping, traveling, personal care, and employment/homemaking are the ten components of MODI. The total possible score range is 0-100 and higher score indicates worse function. Score Range: (0–20%) minimally disabled, (20–40%) Mild impairment, (40–60%) severe impairment, (60–80%) crippled, (80–100%) bedridden, or exaggerated. The inter-class reliability of the modified Oswestry disability index ranges from 0.83 to 0.99.<sup>[10]</sup>

Kopec et al. (1995) described the Quebec back pain disability index, a condition-specific measure of disability. Item response theory and factor analysis were used to

choose the final set of QUE items from a wider pool of questions based on factors such as responsiveness, item-total correlations, and test-retest reliability.<sup>4</sup>The scale's creators thought that using this strategy would probably result in a scale with better measuring qualities than scales created using a more instinctive manner of item selection.<sup>4,5</sup> Kopec and colleagues<sup>10</sup> reported the test-retest reliability for measurements obtained with the Quebec scale as ICC =0.93.<sup>[11]</sup>

**Inclusion criteria:**

- Male & female
- Office worker in age group between 26 to 40
- Have a work experience of minimum 1 to 2 year
- Person to willing participate

**Exclusion criteria:**

- H/O of any surgery
- Not having any type of radiating and compression pain
- Pregnancy
- Not have any of disc bulging
- Non cooperative subjects

**RESULT**

Spearman’s rho correlation was used for analyse data by using SPSS 20.00. To determine the correlation between low back pain and functional limitation activity, spearman’s correlation test was applied. A significant and very strong positive correlation was found between low back pain and functional limitation activity in daily life. [r=0.91, p value=<0.05] the choose significance level for the study was set at p<0.05. This indicates that a correlation with a p-value below 0.05 would be considered statistically significant.

		MODI	QUEBEC
MODI	Correlation co-efficient	-	0.914
	Level of significance		<0.01
QUEBEC	Correlation co-efficient	0.0914	-
	Level of significance	<0.01	

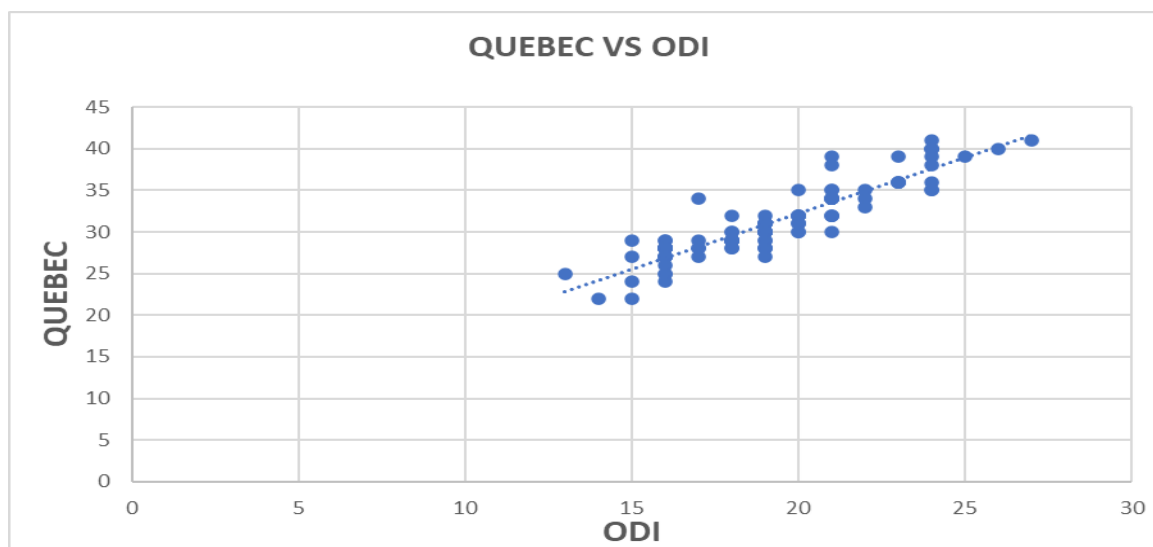


Table 1: r value of correlation between low back pain and functional limitation activite.

**DISCUSSION**

The present study showed that significant and strong positive relationship found between low back pain and functional limitation activity level among office

worker. Study showed that strong positive correlation found between Modified Oswestry disability index and Quebec back pain disability index among office worker. Respondent in this study, associated low

back pain with poor posture, prolonged sitting and standing and lack of sleep. According to the literature, bending forward and standing for extended periods of time are usually linked to low back pain.

In the year 2020, Soung Kyun Honga et al investigate the relationship between depression and the physical and daily life characteristics of patients with nonspecific chronic low back pain. There is a significant correlation was found between Oswestry disability index (ODI) and Back depression inventory (BDI).<sup>[10]</sup>

In the year 2002, Megan Davidson et al investigate the reliability of measurements obtained with the Waddell Disability Index was moderate, but the scale appeared to be insufficient to recommend it for clinical application. The Disability Role Limitations and the Roland-Morris Questionnaire. The most reliable measurements were obtained with the modified Oswestry Disability Questionnaire, the SF-36 Physical Functioning scale, and the Quebec Back Pain Disability Scale.<sup>[12]</sup>

In the year 2001, Fritz JM et al investigate the modified Oswestry disability index demonstrated superior measurement properties compared with the Quebec disability index. The correlation between the change scores of the modified OSW and the QUE was .82.<sup>[11]</sup>

In the present study found the significant and strong positive correlation found between low back pain and functional limitation activity among office worker with some of the activity limitation like prolong sitting and standing, poor posture, repetitive bending activity.

## CONCLUSION

The Present study showed that Oswestry disability index and Quebec back pain disability scale were correlated in Office worker. Very Strong Positive correlation was found between Pain and Functional Disability. This study has to some limitation that the research done across the Ahmedabad further study can be done in larger area can be taken. Further research

could explore the underlying factor that contribute to pain and functional Disability in Office worker.

## Declaration by Authors

**Ethical Approval:** Approved

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**Conflict of Interest:** The authors declare no conflict of interest.

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