



**ORIGINAL RESEARCH PAPER**

**Occupational Therapy**

**PREVALENCE OF LOW BACK PAIN IN NURSING STAFF WORKING IN COVID – 19 WARDS USING QUEBEC BACK PAIN DISABILITY SCALE**

**KEY WORDS:** Nurses, Low back pain, Covid-19

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**ABSTRACT**

**Background:** Low Back Pain (LBP) is one of the occupational musculoskeletal diseases that occur most commonly in nurses among all health care professionals.  
**Objectives:** *Primary Objective:* To evaluate prevalence of LBP in Nursing Staff working in Covid-19 wards using Quebec Back Pain Disability Scale (QBPDS)  
*Secondary Objective:* To evaluate different components of daily activities affected by LBP using QBPDS.  
**Study Design:** Cross sectional, prospective and non-randomized study design.  
**Study setting:** Nurses working in Covid-19 wards from different municipal hospitals. **Methods:** Soft copies of QBPDS were provided to the nurses and they were instructed to score the difficulty they have in performing activities of daily living. Consent was taken from all the participants through same Google form. They were graded on the basis of total score obtained. Higher score correlated to greater difficulty.  
**Results:** Statistical calculations were done. Among 97 participants, the mean score on the QBPDS was 19% which suggested mild LBP and mild disability in the nurses working in Covid-19 wards. Parameters like bed mobility, sleep, standing, sitting, walking, bending, carrying and lifting are somewhat affected in nurses with LBP.  
**Conclusion:** This study shows prevalence of low back pain on QBPDS being mild in 97 nurses having working in Covid-19 wards.

**INTRODUCTION**

The Nurses response world-wide to the crisis of Covid-19 has moved nursing into a global spotlight in a way that calling it 'year of the nurse' never would otherwise have been justified (Ipek Kose T et al; 2017). They are working in the forefront and are managing patient screenings, placement as well the care of patients in the COVID zone. Nurses are working round the clock, pushing themselves to the limit and putting their lives on the line, very often with limited resources (Ipek Kose T et al; 2017). Low Back Pain (LBP) is the leading cause of occupational absence among nurses (Ozlem Ovayolu et al; 2014) and the most important reason cited for changing jobs by health- care workers (Nourollahi M et al; 2018) In addition, it has been shown that 11% of nurses quit their jobs as a result of LBP (Hoda Jardi et al; 2020).

The reported prevalence of LBP among nurses varies worldwide from 85.7% in England, 11 to 62% in Italy<sup>12</sup>, and 80.9% in Hong Kong (Maul I et al; 2003). The practices that require heavy lifting such as transferring and carrying the patients as a part of nursing care are among the main factors that cause LBP in nurses.

**AIMS AND OBJECTIVES**

**AIM:**

To evaluate prevalence of LBP in Nursing Staff working in COVID-19 wards using Quebec Back Pain Disability Scale (QBPDS)

**OBJECTIVE:**

To evaluate different components of daily activities affected by LBP using QBPDS.

**MATERIALS AND METHODOLGY**

**STUDY SETTING:**

Nurses working in COVID-19 wards from different municipal hospitals were asked to answer the QBPDS according to the difficulty they have in performing activities of daily living.

**STUDY DESIGN:** Cross sectional, prospective and non-randomized study design.

**METHOD:**

Soft copies of QBPDS were provided to the nurses and they were instructed to score the difficulty they have in performing activities of daily living. They responded to each question by marking along the score range from 0 (no difficulty at all) to 5 (unable to do). Consent was taken from all the participants through same Google form. They were graded on the basis of total score obtained. Higher score correlated to greater difficulty.

**Software used:**

Fusion Table.

The QBPDS is a condition-specific questionnaire developed to measure the level of functional disability for patients with LBP that was designed, developed and validated by Kopec et al in 1995.

**INCLUSIVE CRITERIA**

1. Nursing staff working in COVID-19 wards.
2. Both sexes were included.
3. Nurses working with doctors and patients in COVID-19 wards.
4. Age group: 20 – 37 Years

**EXCLUSIVE CRITERIA**

1. Nurses working in Non COVID-19 wards
2. Age groups: <20 and >37 years.
3. Nurses having any other co-morbidities
4. The mean score on the QBPDS was 19% which suggested mild LBP and disability in the given population.

**RESULT**

Total 97 Nurses falling in inclusion criteria participated in the study.

1. The maximum age of nurses working in COVID-19 wards is 20 to 22 years.
2. The maximum years of practising (Nursing) is 4 years.
3. The maximum months of practice in COVID-19 wards are 0 to 2.5 months.
4. The different components of Quebec scale described various components of daily living tasks and difficulty performing them **Table 1**.

**Table 1: Mean percentage of population describing levels of difficulty in performing various tasks on QBPDS**

Sr. No.	Component s	No difficulty	Minimal difficulty	Some what difficult	Fairly difficult	Very difficult	Unabl e to do
1	Bed/rest items	39.76%	26.46%	16.83 %	10.9 %	5%	2%
2	Sitting/standing items	46.6%	25.8%	12%	7%	5%	4%
3	Ambulation items	49.13%	24.06%	11%	10%	5%	1%
4	Movement items	56.33%	17%	11.63 %	8.93 %	5.4%	1%
5	Bending/stooping items	65%	16.22%	6%	9.15 %	3.3%	1%
6	Handling of large/heavy objects items	55.92%	20%	9.35%	9.45 %	4.55%	1%

**DISCUSSION**

- The mean score on QBPDS found to be 19% which suggests mild disability in nursing staff working in COVID -19 wards.
- In this study, sleep was minimally affected in 30%, somewhat affected in 17 % and severely affected in 20% among the nurses having LBP. This is supported by the study conducted by Saad M. Alsaadi, James H. McAuley (2003) and others on Prevalence of sleep disturbances in patients with LBP, in which they concluded that there was a high prevalence of sleep disturbances in patients with LBP, both chronic and acute and that the pain intensity was not highly associated with sleep disturbances.
- The study conducted by Catherine Koch and Frank Hansel on Non-specific LBP and postural control during quiet standing, concluded that the combination of neuromuscular and biomechanical parameters was associated with the impairment of postural control in individuals with LBP during standing. In accordance with their results, our study shows 29% of nurses had minimal difficulty, 14% of nurses had somewhat difficulty, 7% of nurses had severe difficulty and for 7% of nurses it was fairly difficult to stand for 20 to 30 minutes.
- The article written by Angela Maria Lis, Katia M. Black and others on Association between sitting and occupational LBP, shows how sitting and sitting while exposed to whole body vibrations affect low back pain. In this study, 19% of nurses had minimal difficulty and 24 % nurses had severe difficulty while riding in a car and 30% of nurses had minimal difficulty, 16% nurses had somewhat difficulty and 15% of nurses had severe difficulty while sitting in a chair for several hours.
- In this study, the effect of LBP on walking and climbing stairs shows that 51% nurses had no difficulty at all and 8% of participating nurses had severe difficulty to climb one flight of stair, 57% of nurses had no difficulty at all in walking a few blocks whereas 12% of nurses had severe difficulty and 40% of participating nurses had no difficulty in walking several miles while 5% nurses had maximum difficulty. This is in reference with the article written by Cathrin Koch and Frank Hansel on - Chronic non - specific LBP and motor control during gait.
- 25% of population had difficulty in reaching up to high shelves, 14 % in taking out food from the refrigerator, 14 % in making bed, 20% in putting socks or pantyhose on and 17% in bending over to clean the bathroom. These activities use flexion and rotation of the trunk which if not

stabilized can lead to LBP. This can be further justified in the article written by W E Hoogendoorn, P M Bongers and others on - Flexion and rotation of the trunk and lifting at work are risk factors for LBP of prospective cohort study.

- 10% of population had difficulty in moving a chair, 21% in pushing or pulling heavy doors, 26 % in carrying two bags of groceries and 27% in lifting and carrying a heavy suitcase. These activities include lifting and moving heavy objects and this can be further justified in the article written by Ingrid Heuch, Ivar Heuch and others on- Physical activity levels at work and risk of chronic low back pain.

**CONCLUSION**

The mean score on the QBPDS was 19% which suggested mild LBP and disability in the nurses working in COVID – 19 wards. Parameters like sleep, standing, and sitting are somewhat affected in nurses with LBP.

**LIMITATIONS**

- Limited sample size.
- Study was done in early outbreak of COVID – 19 with less exposure to the assigned work.

**SUGGESTIONS**

- Comparison between genders, age group, between emergency and non-emergency staff ward can be done.
- Interventional study can be done in order to differentiate between the pre and the post-intervention.

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