

*Original Article*

# Quality of Life Among Young Nurses Due to Low Back Pain in Punjab, Pakistan: A Cross-Sectional Survey

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## ABSTRACT

**Background:** Low back pain is a common occupational musculoskeletal problem among nurses because clinical duties frequently involve prolonged standing, bending, lifting, patient handling, and sustained physical workload. **Objective:** This study aimed to find out the quality of life among young nurses due to low back pain working in selected Civil Hospitals of Punjab, Pakistan. **Methods:** A cross-sectional survey design was conducted among 200 young nurses recruited through convenience sampling from hospitals in Sargodha, Gujrat, Multan, Lahore, Sahiwal, and Layyah. Data were collected using the Oswestry Low Back Pain Disability Questionnaire and analyzed descriptively using SPSS version 23.0. Frequencies and percentages were calculated for overall LBP severity and activity-related limitations during standing and lifting. **Results:** Overall, 110 of 200 nurses reported low back pain, giving a prevalence of 55.0%. Mild pain was reported by 36 participants (18.0%), moderate pain by 42 (21.0%), and severe pain by 32 (16.0%). Standing-related pain or limitation was reported by 115 nurses (57.5%), while lifting-related pain or limitation was reported by 133 nurses (66.5%). Moderate-to-severe limitation was highest during lifting (47.0%), followed by standing (40.5%) and overall LBP severity (37.0%). **Conclusion:** Low back pain was common among young nurses and was most strongly reflected in lifting-related functional limitation. Ergonomic training, safe patient-handling practices, learning the control of good posture, preventive workplace strategies and promotion of healthy lifestyle are recommended. **Keywords:** Low back pain, Young Nurses, Quality of life, Occupational health, Oswestry Disability Index, Pakistan

## INTRODUCTION

Low back pain (LBP) is one of the most common musculoskeletal complaints localized below the costal margin and above the gluteal folds with or without leg pain affecting working populations and is particularly relevant in nursing because routine clinical duties require prolonged standing, repetitive bending, patient handling, awkward postures, and sustained physical effort. An episode of LBP has been defined as pain in the lower back lasting more than 24 hours and separated from previous or subsequent episodes by at least one month without symptoms, while work absence related to LBP reflects a clinically meaningful occupational consequence of this condition (1). Among healthcare workers, nurses are consistently identified as a high-risk group because their duties combine physical workload with psychosocial demands, including emergency care, time pressure, staff shortages, and frequent unplanned patient-care activities (2,3). The burden of LBP in nurses is therefore not only a clinical issue but also an occupational health concern that may reduce work efficiency, increase absenteeism, and contribute to long-term disability.

Previous international studies have reported quality of life affected due to LBP among nurses and hospital staff. In a rural hospital in southwestern Nigeria, the highest prevalence of back pain was observed among nursing staff compared with administrative workers and cleaners (4). Another Nigerian hospital-based study reported a 12-month LBP prevalence of 73.53% among nurses, with higher occurrence among female nurses than male nurses (5). Similar findings have been reported in other settings, where occupational LBP among nurses was associated with heavy lifting, prolonged standing, twisting, walking long distances, forward bending, and inadequate ergonomic practices (3,6). These findings suggest that nursing-related LBP is multifactorial and may arise from the interaction of physical workload, poor body mechanics, limited availability of lifting equipment, psychosocial strain, and insufficient back-care education.

The mechanisms underlying LBP in nurses are closely linked to the anatomical and functional demands placed on the lumbar spine. Pain may originate from structures such as the paravertebral muscles, fascia, ligaments, facet joints, vertebral periosteum, and the outer annulus fibrosus (7). Repeated spinal loading sustained static postures, and improper lifting techniques may increase mechanical stress on these structures, leading to pain, functional limitation, and reduced tolerance for activities such as standing, walking, lifting, sitting, travelling, and personal care. Since pain and disability are central features of LBP, assessment tools that capture functional limitation are important for estimating the practical impact of symptoms on daily and occupational activities (8,9). In this context, the Oswestry Low Back Pain Disability Questionnaire provides a structured way to evaluate activity-related disability among individuals with LBP.

Although the burden of LBP among nurses has been documented in several countries, local evidence from young nurses working in Punjab, Pakistan remains limited. Young nurses may be exposed to high physical demands early in their careers, yet they may have limited ergonomic training, limited clinical experience, and variable access to assistive equipment. This creates a need for locally generated evidence on the prevalence and activity-related burden of LBP in this occupational group. Defining the magnitude of LBP among young nurses can help hospital administrators, educators, and rehabilitation professionals plan preventive strategies, ergonomic training, and early rehabilitation programs. Therefore, this study aimed to determine the quality of life affected due to low back pain among young nurses working in selected hospitals of Punjab, Pakistan, using the Oswestry Low Back Pain Disability Questionnaire. The research question was: what is the quality of life among young nurses due to low back pain in selected hospitals of Punjab, Pakistan, and how does it affect functional activities such as standing and lifting?

## **MATERIALS AND METHODS**

This study was conducted as a cross-sectional observational survey to determine the quality of life among young nurses due to Low back pain and its functional impact who are working in selected hospitals of Punjab, Pakistan. A cross-sectional design was selected because it was appropriate for estimating the burden of LBP at a defined point in time and for describing activity-related disability patterns in the target occupational group. The study was carried out in hospitals located in different cities of Punjab, including Sargodha, Gujrat, Multan, Lahore, Sahiwal, and Layyah, over a period of nine months. The study population consisted of nurses working in hospital settings who were available during the data collection period and agreed to participate voluntarily.

A total of 200 nurses were enrolled through convenience sampling. Participants were selected from the accessible nursing population in the participating hospitals. Eligible participants were young nurses actively working in clinical settings during the study period. Nurses who were unwilling to participate or who did not provide questionnaire responses suitable for analysis were not included.

Participation was voluntary, and confidentiality of personal and professional information was maintained throughout the study. The purpose of the study was explained to participants before data

collection, and consent was obtained before questionnaire administration. No identifying information was used in the analysis or reporting.

Data were collected using the Oswestry Low Back Pain Disability Questionnaire, which assesses the effect of low back pain on functional activities. The questionnaire was used to record pain-related functional difficulty in domains relevant to daily and occupational functioning, including pain severity and activity limitations such as standing and lifting. Responses were categorized according to the severity or functional limitation indicated by the questionnaire response options. The primary outcome variable was the prevalence of low back pain, defined as the proportion of participants reporting any category of LBP-related pain or disability. Participants reporting no pain were classified as not having LBP, whereas those reporting mild, moderate, or severe pain-related limitation were classified as having LBP. Secondary variables included activity-specific limitation during standing and lifting, expressed as frequencies and percentages across response categories.

To reduce information bias, the same questionnaire format was used for all participants, and responses were numerically coded before analysis. Data were entered into Microsoft Excel and then analyzed using Statistical Package for Social Sciences version 23.0. Data checking was performed before analysis to identify incomplete or inconsistent entries. The analysis was primarily descriptive because the study objective was to estimate prevalence and summarize functional limitation patterns. Categorical variables were presented as frequencies and percentages. The overall prevalence of LBP was calculated by combining all participants with mild, moderate, and severe pain categories and dividing this number by the total sample size. Activity-specific responses for standing and lifting were also summarized using counts and percentages. Since the available manuscript data did not provide subgroup variables such as age categories, gender distribution, work experience, shift duration, or ward placement, adjusted association testing and confounder-controlled modeling were not performed.

The sample size comprised 200 nurses, which provided a practical estimate of LBP prevalence within the accessible hospital-based nursing population across selected cities of Punjab. The use of multiple hospital locations was intended to improve the descriptive coverage of the sample across different clinical settings. Selection bias was addressed by clearly defining the sampling approach as convenience-based rather than random, and the findings were interpreted as representative of the surveyed participants rather than all nurses in Punjab. Confidentiality, voluntary participation, and ethical conduct were maintained during all stages of data collection. The study was approved through the Department of Physical Therapy, University of Sargodha. Data integrity was supported by numerical coding, spreadsheet-based data entry, SPSS-based analysis, and reporting of results as aggregated data only.

## RESULTS

A total of 200 young nurses were included in the analysis. Overall, 110 participants reported low back pain, giving a prevalence of 55.0%, while 90 participants reported no low back pain. Among all participants, 36 nurses had mild pain, 42 had moderate pain, and 32 had severe pain, showing that moderate pain was the most frequent symptomatic category.

*Table 1. Overall Prevalence and Severity of Low Back Pain Among Young Nurses (n = 200)*

Category	Frequency (n)	Percentage (%)
No pain	90	45.0
Mild pain	36	18.0
Moderate pain	42	21.0
Severe pain	32	16.0
Any low back pain	110	55.0

Pain during standing was reported by 115 nurses, representing 57.5% of the sample. Among them, 34 participants reported mild pain during standing, 58 could stand for less than one hour without pain, 17 could stand for less than 30 minutes without pain, and 6 could stand for less than 10 minutes without

pain. This indicates that standing-related functional limitation was common, with 40.5% of the total sample reporting reduced standing tolerance beyond mild pain.

**Table 2. Standing-Related Low Back Pain and Functional Limitation (n = 200)**

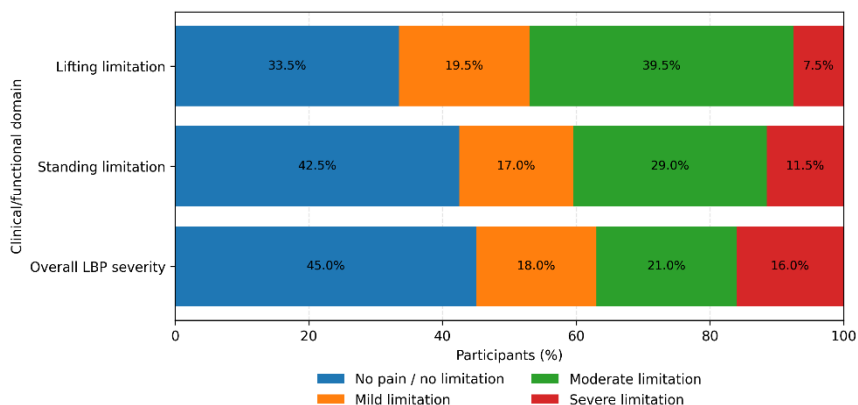
Standing Pain Category	Frequency (n)	Percentage (%)
No pain during standing	85	42.5
Mild pain during standing	34	17.0
Can stand less than 1 hour without pain	58	29.0
Can stand less than 30 minutes without pain	17	8.5
Can stand less than 10 minutes without pain	6	3.0
Any standing-related pain/limitation	115	57.5

Pain or difficulty during lifting was reported by 133 nurses, representing 66.5% of the sample. Mild pain during lifting was reported by 39 participants, while 46 could lift only when weight was conveniently placed. A further 33 could lift only light-to-medium weights, 14 could lift very light weights, and 1 participant reported the worst pain during any lifting activity. These findings suggest that lifting was the most affected functional domain among the reported activities.

**Table 3. Lifting-Related Low Back Pain and Functional Limitation (n = 200)**

Lifting Pain Category	Frequency (n)	Percentage (%)
No pain during lifting	67	33.5
Mild pain during lifting	39	19.5
Can lift only if conveniently placed	46	23.0
Can lift light-to-medium weights	33	16.5
Can lift very light weight	14	7.0
Worst pain during any lifting activity	1	0.5
Any lifting-related pain/limitation	133	66.5

Across the available functional domains, lifting showed the highest burden of pain or limitation at 66.5%, followed by standing at 57.5% and overall reported low back pain at 55.0%. Moderate-to-severe functional limitation was proportionally greater for lifting, where 47.0% of participants had moderate or severe lifting restriction, compared with 40.5% for standing and 37.0% for overall LBP severity. This pattern suggests that occupational tasks involving load handling may represent a particularly important functional burden among young nurses in this sample.



**Figure 1 Functional Low Back Pain Burden Across Overall Severity, Standing, and Lifting**

The figure shows that lifting produced the highest total pain-related burden, affecting 66.5% of participants, compared with 57.5% for standing and 55.0% for overall LBP prevalence. Moderate-to-severe limitation was also most prominent during lifting, affecting 47.0% of nurses, whereas standing-related moderate-to-severe limitation affected 40.5% and overall moderate-to-severe LBP affected 37.0%. This distribution indicates that although more than half of the nurses reported LBP, the clinical impact

was especially pronounced during lifting-related activities, supporting the need for ergonomic training and safe patient-handling strategies.

## DISCUSSION

The present study found that low back pain was common among young nurses working in selected hospitals of Punjab, Pakistan, with 110 of 200 participants reporting some degree of LBP, giving an overall prevalence of 55.0%. The severity distribution showed that 18.0% reported mild pain, 21.0% reported moderate pain, and 16.0% reported severe pain, indicating that more than one-third of the total sample experienced moderate-to-severe symptoms. This finding supports the view that LBP is a clinically relevant occupational health problem in nursing, where repeated spinal loading, prolonged standing, bending, twisting, and patient-handling tasks may contribute to lumbar discomfort and functional limitation (2,3,5). The observed prevalence is lower than the 73.53% reported among nurses in a Nigerian hospital but remains high enough to suggest a substantial burden in the local nursing workforce (5).

The activity-specific findings further clarify the functional impact of LBP in this sample. Standing-related pain or limitation was reported by 57.5% of participants, while lifting-related pain or limitation was reported by 66.5%. The greater burden during lifting is clinically important because lifting is a routine nursing activity and often involves unpredictable load, awkward posture, and rapid response to patient-care demands. Moderate-to-severe limitation was also more prominent during lifting than standing, suggesting that load-handling tasks may be a more disabling trigger than static posture alone. These findings are consistent with earlier evidence that heavy lifting, patient transfer, forward bending, twisting, and prolonged standing are important contributors to LBP among nurses and hospital staff (3,6). The results also align with reports that nurses with higher workload and longer standing or walking hours are more likely to experience LBP (10).

The quality of life is identified in this study also has practical implications for workforce health and patient care. LBP may reduce physical capacity, impair work efficiency, increase fatigue, and contribute to absenteeism or job modification. Previous studies among nursing staff have similarly reported high rates of occupational back pain and work absence, emphasizing that LBP is not merely an individual clinical complaint but a system-level occupational issue (11). In the present sample, the high proportion of nurses reporting lifting-related symptoms suggests that preventive strategies should prioritize safe patient-handling training, ergonomic education, use of assistive lifting equipment, adequate staffing, and early referral for rehabilitation when symptoms appear.

This study has several limitations that should be considered when interpreting the findings. The convenience sampling method limits generalizability to all nurses in Punjab. The analysis was descriptive, and the available dataset did not include subgroup variables such as age, sex, work experience, shift duration, ward type, body mass index, or previous history of musculoskeletal disorders. Therefore, risk-factor modeling, confounder adjustment, and subgroup comparison were not performed. Despite these limitations, the study provides useful local descriptive evidence showing that LBP and activity-related limitation are common among young nurses, especially during lifting and standing tasks. The aim of present study is to indicate the effectiveness of physical an rehabilitation intervention e.g exercise therapy, TENS, LASER therapy, massage, behavioral treatment, traction, Lumbar aids, heat and cold therapy, ergonomic adjustment and life style modification.

## CONCLUSION

The result of this study showed that Low back pain affects the quality of life among young nurses in selected hospitals of Punjab, Pakistan, affecting 55.0% of participants. Functional limitation was most frequent during lifting, reported by 66.5% of nurses, followed by standing-related limitation in 57.5%. These findings indicate that LBP is a meaningful occupational health concern in young nurses and highlight the need for ergonomic education, learning control of good posture, safe lifting practices,

appropriate patient-handling support, early preventive strategies and promotion of healthy lifestyle within hospital settings.

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