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Original Article

Prevalence and Disability of Low Back Pain Among Physical Therapists in Lahore: A Cross-Sectional Study

Madiha Ahmad[1], Nabeel Ahmed[2], Hammad Sabir[3], Naveed Anwar[4]

[1] Department of Anatomy and Histology, University of Veterinary and Animal Sciences, Lahore, Pakistan
[2] University Institute of Physical Therapy, University of Lahore, Lahore, Pakistan
[3] Xinjiang Medical University, China
[4] NHS North PCN, Harlow, England

***Corresponding author: Madiha Ahmad, madihaahmad1994@gmail.com**

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ABSTRACT

Background: Low back pain is a frequent occupational musculoskeletal complaint among physical therapists because clinical practice often involves bending, lifting, trunk rotation, prolonged standing, manual therapy, and patient handling. Objective: To determine the prevalence of low back pain, assess disability level, and examine associations with selected demographic and occupational factors among physical therapists in Lahore. Methods: An analytical cross-sectional study was conducted among 50 physical therapists from government, private hospital, and clinical settings in Lahore using purposive sampling. Data were collected through a self-administered questionnaire and the Oswestry Low Back Pain Disability Questionnaire. Demographic and occupational variables included gender, age, smoking status, working hours, work experience, and treatment method. Data were analyzed using SPSS version 21, and associations were assessed using the Chi-square test at $p<0.05$. Results: The prevalence of low back pain was 30.0% (15/50; 95% CI: 19.1–43.8). Among affected participants, 80.0% had minimal disability and 20.0% had moderate disability. No statistically significant association was found between low back pain and gender, age, work experience, working hours, smoking status, or treatment method. Conclusion: Low back pain was prevalent among physical therapists in Lahore, although most affected participants had minimal disability. Larger studies are recommended to confirm occupational and lifestyle-related risk patterns. Keywords: Low back pain, physical therapists, prevalence, Oswestry Disability Index, occupational health, cross-sectional study.

INTRODUCTION

Low back pain is one of the most common musculoskeletal conditions affecting working-age adults and is frequently defined as pain or discomfort localized between the costal margin and the inferior gluteal folds, with or without associated functional limitation (1). When low back pain occurs without identifiable fracture, inflammatory disease, malignancy, neurological compromise, or other specific spinal pathology, it is commonly classified as non-specific low back pain. The condition has substantial occupational relevance because it contributes to sickness absence, reduced work productivity, functional limitation, and repeated health-care utilization. Although many individuals recover within the first year, a considerable proportion continue to experience persistent or recurrent symptoms, making low back pain an important public health and workforce issue (2).

Physical therapists represent a uniquely vulnerable occupational group because their clinical work frequently requires repetitive bending, sustained standing, trunk rotation, manual handling, patient transfers, mobilization techniques, exercise demonstration, and prolonged static or awkward postures. These exposures may place repeated mechanical load on the lumbar spine and surrounding soft tissues,

particularly when ergonomic resources are limited or patient volume is high. Previous studies have reported substantial variation in the prevalence of work-related musculoskeletal disorders and low back pain among physiotherapists across different countries and practice settings, including Egypt, Turkey, Saudi Arabia, Taiwan, Vietnam, Japan, and other regions (3–12). This variation may reflect differences in workload, clinical specialty, staffing patterns, ergonomic training, reporting methods, and health-care infrastructure.

The available international evidence suggests that low back pain among physical therapists is influenced by multiple personal and occupational factors, including gender, body mass index, years of experience, patient-handling frequency, manual therapy workload, working hours, repetitive movement, smoking status, and inadequate recovery time (9,10,12–14). However, evidence from Pakistan remains limited, particularly from Lahore, where physical therapists work across diverse private clinics, hospitals, and rehabilitation settings with variable ergonomic conditions and workload demands. Local data are important because findings from other countries may not be directly generalizable to Pakistani clinical environments, where staffing ratios, treatment settings, patient expectations, and workplace resources may differ substantially.

Despite the recognized occupational burden of low back pain among rehabilitation professionals, there remains a need for context-specific evidence regarding its prevalence, associated disability, and relationship with selected demographic and occupational factors among physical therapists in Lahore. Identifying the magnitude of low back pain and its functional impact can help guide workplace prevention strategies, ergonomic awareness, and occupational health planning for rehabilitation professionals. Therefore, this study aimed to determine the prevalence of low back pain, assess disability level using the Oswestry Disability Index, and examine the association of low back pain with gender, age, smoking status, working hours, years of experience, and type of treatment method among physical therapists in Lahore.

MATERIALS AND METHODS

An analytical cross-sectional study was conducted among professional physical therapists working in different government hospitals, private hospitals, and clinical rehabilitation settings in Lahore, Pakistan. The cross-sectional design was selected because the objective was to estimate the point prevalence of low back pain, describe associated disability, and examine associations between low back pain and selected demographic and occupational factors at a single period of assessment. The study population included male and female physical therapists aged 22–45 years who were actively practicing clinically at the time of data collection, regardless of whether they had current low back pain, so that prevalence could be estimated across both symptomatic and asymptomatic participants.

Participants were selected through purposive sampling from available clinical settings in Lahore. Physical therapists were eligible if they were between 22 and 45 years of age and were engaged in clinical practice involving patient assessment or treatment. Physical therapists were excluded if they had a known diagnosis of disc bulge, disc herniation, serious spinal trauma, tumor, rheumatoid arthritis, systemic lupus erythematosus, diabetes mellitus, hypertension, or other systemic disease that could independently influence musculoskeletal pain or disability. These exclusion criteria were applied to reduce confounding from non-occupational or medically driven causes of low back pain. Written informed consent was obtained from all participants before data collection, and participation was voluntary.

Data were collected using a two-part questionnaire. The first part consisted of a self-administered questionnaire designed to record demographic and occupational characteristics, including gender, age category, smoking status, daily working hours, years of professional experience, and type of patient treatment method used in clinical practice. Age was categorized as ≤30 years and >30 years, working hours as ≤4 hours and >4 hours per day, professional experience as ≤3 years and >3 years, and treatment

approach as single-method or multiple-method practice. Low back pain was recorded as a binary outcome based on the participant's self-reported presence or absence of pain in the lower back region. The second part consisted of the Oswestry Low Back Pain Disability Questionnaire, which was used to assess functional disability among participants who reported low back pain. Disability was interpreted according to standard ODI categories, with scores of 0–20 indicating minimal disability and 21–40 indicating moderate disability.

A total of 70 questionnaires were distributed among eligible physical therapists, and 50 completed questionnaires were returned, yielding a response rate of approximately 71.4%. Only fully completed questionnaires were included in the final analysis. The final sample therefore consisted of 50 physical therapists, which was considered adequate for a preliminary descriptive cross-sectional estimate of low back pain prevalence in the available clinical population. Because purposive sampling was used, the findings were interpreted as exploratory and context-specific rather than fully generalizable to all physical therapists in Lahore.

Data were entered and analyzed using SPSS version 21. Descriptive statistics were used to summarize participant characteristics, prevalence of low back pain, and ODI disability categories. Categorical variables were presented as frequencies and percentages. The prevalence of low back pain was calculated as the proportion of participants reporting low back pain among the total sample. Associations between low back pain and categorical demographic or occupational variables were assessed using the Chi-square test; where expected cell counts were small, exact testing would be more appropriate for confirmatory analysis. A p-value of less than 0.05 was considered statistically significant. Because of the small sample size and limited number of outcome events, results were interpreted cautiously, and nonsignificant findings were not considered evidence of absence of association. Data integrity was maintained through review of completed questionnaires before entry, exclusion of incomplete responses, and consistency checks during analysis.

The study was conducted in accordance with ethical principles for human participant research. Written informed consent was obtained from all participants, confidentiality of participant responses was maintained, and data were used only for research purposes. No external funding was received, and the authors declared no conflict of interest. The dataset was reported to be available from the corresponding author on reasonable request.

RESULTS

A total of 50 physical therapists were included in the final analysis. Most participants were male (56.0%), aged ≤30 years (70.0%), non-smokers (80.0%), worked for more than 4 hours per day (68.0%), had ≤3 years of work experience (60.0%), and used multiple treatment methods in clinical practice (78.0%) (Table 1).

Table 1. Demographic and Occupational Characteristics of Participants (n=50)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	28	56.0
	Female	22	44.0
Age	≤30 years	35	70.0
	>30 years	15	30.0
Smoking status	Smoker	10	20.0
	Non-smoker	40	80.0
Working hours/day	≤4 hours	16	32.0
	>4 hours	34	68.0
Work experience	≤3 years	30	60.0
	>3 years	20	40.0
Treatment method	Single method	11	22.0
	Multiple methods	39	78.0

The overall prevalence of low back pain was 30.0%, with 15 of 50 physical therapists reporting low back pain. The estimated 95% confidence interval for prevalence was 19.1% to 43.8%, indicating a clinically relevant occupational burden despite the modest sample size (Table 2).

Table 2. Prevalence of Low Back Pain Among Physical Therapists (n=50)

Low Back Pain Status	Frequency (n)	Percentage (%)	95% CI
Low back pain present	15	30.0	19.1–43.8
No low back pain	35	70.0	56.2–80.9

Chi-square analysis showed no statistically significant association between low back pain and gender, age, work experience, working hours, smoking status, or type of treatment method, as all p-values were greater than 0.05. However, some clinically meaningful trends were observed. Females had higher odds of reporting low back pain than males (36.4% vs 25.0%; OR=1.71, 95% CI: 0.51–5.80). Smokers also showed higher odds of low back pain than non-smokers (50.0% vs 25.0%; OR=3.00, 95% CI: 0.72–12.55), although this association did not reach statistical significance. Participants using multiple treatment methods had lower observed odds of low back pain compared with those using a single method (25.6% vs 45.5%; OR=0.41, 95% CI: 0.10–1.66), but this finding should be interpreted cautiously because of the small sample size and wide confidence interval (Table 3).

Table 3. Association Between Demographic and Occupational Factors and Low Back Pain

Variable	Category	LBP Yes n (%)	LBP No n (%)	Odds Ratio	95% CI	p-value
Gender	Male	7 (25.0)	21 (75.0)	Reference	—	0.384
	Female	8 (36.4)	14 (63.6)	1.71	0.51–5.80	
Age	≤30 years	10 (28.6)	25 (71.4)	Reference	—	0.736
	>30 years	5 (33.3)	10 (66.7)	1.25	0.34–4.59	
Work experience	≤3 years	9 (30.0)	21 (70.0)	Reference	—	1.000
	>3 years	6 (30.0)	14 (70.0)	1.00	0.29–3.44	
Working hours/day	≤4 hours	6 (37.5)	10 (62.5)	Reference	—	0.427
	>4 hours	9 (26.5)	25 (73.5)	0.60	0.17–2.13	
Smoking status	Non-smoker	10 (25.0)	30 (75.0)	Reference	—	0.123
	Smoker	5 (50.0)	5 (50.0)	3.00	0.72–12.55	
Treatment method	Single method	5 (45.5)	6 (54.5)	Reference	—	0.205
	Multiple methods	10 (25.6)	29 (74.4)	0.41	0.10–1.66	

Among the 15 participants who reported low back pain, most had minimal disability according to the Oswestry Disability Index. Twelve participants, representing 80.0% of symptomatic physical therapists, were classified as having minimal disability, while 3 participants, representing 20.0%, had moderate disability. The 95% confidence interval for minimal disability was 54.8% to 93.0%, suggesting that although low back pain was present in nearly one-third of the sample, functional limitation was generally low among affected participants (Table 4).

Table 4. Oswestry Disability Index Categories Among Participants With Low Back Pain (n=15)

ODI Category	Score Range	Frequency (n)	Percentage (%)	95% CI
Minimal disability	0–20	12	80.0	54.8–93.0
Moderate disability	21–40	3	20.0	7.0–45.2

Overall, the results indicate that low back pain was present in 30.0% of physical therapists, but most symptomatic participants reported only minimal disability. Although no statistically significant associations were found, smoking status, female gender, and single-method treatment practice showed higher observed proportions of low back pain. These findings suggest possible occupational and lifestyle-related patterns that may warrant further investigation in larger, adequately powered studies using adjusted regression analysis.

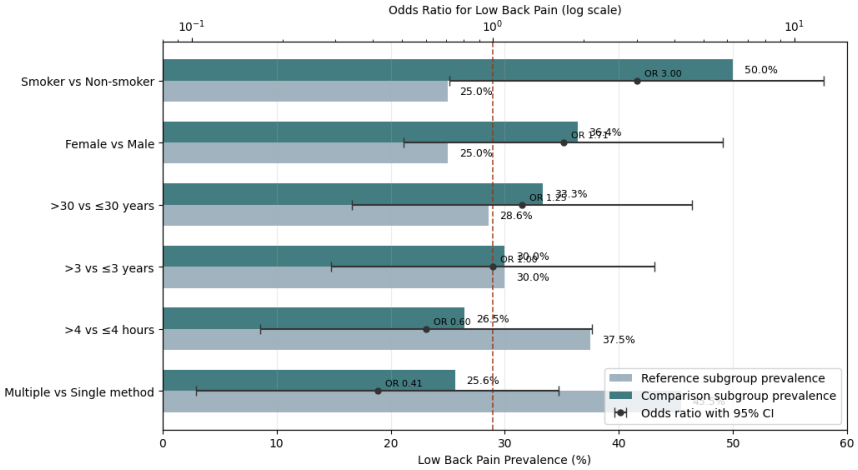

Figure 1. Low Back Pain Association Gradient Across Demographic and Occupational Factors

Low back pain showed the strongest observed gradient among smokers, with 50.0% reporting low back pain compared with 25.0% of non-smokers, corresponding to threefold higher odds, although the confidence interval was wide (OR=3.00, 95% CI: 0.72–12.55). Female physical therapists also showed a higher observed prevalence than males (36.4% vs 25.0%; OR=1.71, 95% CI: 0.51–5.80), while participants using multiple treatment methods showed a lower observed prevalence than those using a single treatment method (25.6% vs 45.5%; OR=0.41, 95% CI: 0.10–1.66). These patterns suggest clinically relevant occupational and lifestyle gradients, but the wide confidence intervals indicate limited precision due to the small sample size.

DISCUSSION

The present study found that 30.0% of physical therapists in Lahore reported low back pain, indicating that low back pain remains a relevant occupational health concern within rehabilitation practice. Although this prevalence is lower than estimates reported in several international studies, including Egypt, Turkey, Saudi Arabia, Vietnam, and pooled global analyses, it still represents a meaningful clinical burden because nearly one in three practicing physical therapists in this sample experienced symptoms (3–6,10). The lower prevalence observed in the current study may be related to differences in sample size, clinical setting, workload, ergonomic awareness, reporting methods, or participant characteristics. Because the present sample was relatively small and recruited through purposive sampling, the findings should be interpreted as preliminary local evidence rather than a definitive population estimate.

Most participants with low back pain demonstrated minimal disability on the Oswestry Disability Index, with 80.0% classified as having minimal disability and 20.0% as having moderate disability. This suggests that although low back pain was present, its functional impact was generally limited in this group. One possible explanation is that physical therapists may possess better knowledge of posture correction, movement modification, exercise therapy, and self-management strategies, enabling them to continue professional activities despite symptoms. Previous evidence has similarly suggested that physical therapists often modify their techniques, adjust treatment methods, improve body mechanics, or alter work habits after experiencing musculoskeletal discomfort (11,14). However, minimal disability should not be interpreted as clinically insignificant, because persistent low-grade symptoms may progress over time if occupational exposures remain unaddressed.

No statistically significant association was found between low back pain and gender, age, working experience, working hours, smoking status, or treatment method. However, the absence of statistical significance should be interpreted cautiously because the sample size was small and several subgroup comparisons had wide confidence intervals. Female physical therapists showed a higher observed prevalence of low back pain than males, and smokers showed a higher observed prevalence than non-smokers. These findings are consistent with previous literature suggesting that personal and lifestyle-

related factors may contribute to musculoskeletal symptoms among physical therapists, although larger studies are required to confirm these associations (9,10,12). Similarly, participants using a single treatment method showed a higher observed prevalence than those using multiple methods, which may suggest differences in workload pattern or treatment exposure, but this finding cannot be considered conclusive without adjusted analysis.

The findings should also be considered in light of occupational biomechanics. Physical therapy practice often involves manual handling, repetitive trunk flexion, sustained standing, rotation, patient transfers, and forceful therapeutic techniques, all of which may increase mechanical loading on the lumbar spine (3,10,13). Even when disability is minimal, repeated exposure to such movements may contribute to recurrent symptoms or chronic occupational strain. Therefore, ergonomic training, appropriate bed height adjustment, safe patient-handling techniques, workload management, regular rest intervals, and strengthening or conditioning programs may help reduce occupational risk among physical therapists.

This study has several limitations. The sample size was small, which limited statistical power and reduced the precision of association estimates. Purposive sampling may have introduced selection bias, and the findings may not be generalizable to all physical therapists in Lahore or Pakistan. Low back pain and occupational exposures were assessed through self-report, which may be affected by recall bias or reporting bias. The cross-sectional design also prevents causal interpretation between occupational factors and low back pain. In addition, potential confounders such as body mass index, physical activity level, clinical specialty, patient load, manual therapy frequency, psychosocial stress, and ergonomic training were not fully assessed. Future studies should use larger probability-based samples, validated exposure measures, adjusted regression models, and longitudinal designs to clarify predictors of low back pain and its progression among physical therapists.

CONCLUSION

Low back pain was present in 30.0% of physical therapists in Lahore, with most affected participants reporting minimal disability on the Oswestry Disability Index. No statistically significant association was found between low back pain and the assessed demographic or occupational variables; however, higher observed proportions among females, smokers, and those using single-method treatment indicate patterns that may warrant further investigation. The findings suggest that low back pain is a relevant occupational issue among physical therapists, but larger adequately powered studies are required to confirm associated risk factors and guide targeted ergonomic and preventive strategies.

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