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A Cross-Sectional Evaluation of Low Back Pain Myths Among Postgraduate Orthopaedic, Neurology, and Physiotherapy Practitioners

Noor Khoso[1*], Nazia Muhammad Razzaq[1], Kareem Baksh[1], Muhammad Baksh[1]
[1]Bolan Medical College, Quetta

ABSTRACT

Objective: This study aimed to evaluate the perceptions of postgraduate medical doctors of orthopaedic, neurology and doctors of physical therapy (DPT) regarding the etiology, pathophysiology, and intervention-related aspects of low back pain, as assessed through Deyo's Myths Questionnaire.

Background: Low back pain is a common musculoskeletal problem and a major cause of disability worldwide. Despite growing evidence on its management, misconceptions about its causes and treatment still exist among healthcare professionals, which may influence clinical practice and patient care.

Methodology: A cross-sectional observational study was conducted among 240 postgraduate practitioners (80 orthopedic, 80 neurology, 80 DPT) recruited from Balochistan, with data collection at BMC Quetta, between August and December 2025. Eligible participants were aged 25 years or above, while practitioners from other domains and those younger than 25 years were excluded. Deyo's validated Myths Questionnaire, covering ten domains of common misconceptions about LBP, was administered in paper and electronic formats. Data were analyzed using SPSS version 27.2, applying descriptive statistics and chi-square tests to assess group associations at a significance level of $p<0.05$.

Results: A total of 242 postgraduate healthcare practitioners participated, with 240 valid responses analyzed. Participants were equally distributed among Orthopedics, Neurology, and Physiotherapy domains. No significant association was found between professional domain and gender ($p=0.816$), while age distribution differed significantly across groups ($p<0.001$). Significant inter-domain differences were observed for myths related to low back pain chronicity, posture, weak core musculature, necessity of surgery, and effectiveness of medical treatments ($p<0.05$). Orthopedic and neurology practitioners more frequently endorsed structural and surgical misconceptions, whereas physiotherapists demonstrated comparatively better awareness of active and conservative management. No significant differences were noted for myths related to disease severity, imaging, tissue damage, exercise-related pain, or bed rest.

Conclusion: The persistence of myths among medical practitioners highlights a significant gap in current training, emphasizing the need to align medical curricula with contemporary evidence-based guidelines and to incorporate structured educational interventions.

Keywords: MBBS, Bachelor of Medicine and Bachelor of Surgery, DPT, Doctor of Physical Therapy, LBP, low back pain.

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Corresponding Author: Dr Noor Ahmed khosa, Professor of Neurology, Head of Department, Bolan Medical College,
Email: drnoorahmedkhosa@gmail.com

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INTRODUCTION

Low back pain (LBP) represents a substantial global public health challenge and remains one of the leading causes of disability across all age groups. Among musculoskeletal disorders, LBP contributes significantly to medically certified sick leave, particularly within economically productive populations.[1] Chronic low back pain—defined as pain

persisting for longer than three months—is among the most prevalent pain conditions worldwide, ranking second only to lower limb pain.[2] Globally, LBP is categorized among the "big four" rheumatologic and musculoskeletal conditions, alongside osteoarthritis, soft tissue rheumatism, and inflammatory rheumatic diseases.[3] According to the Global Burden of Disease studies, LBP is the leading cause of years lived with disability (YLDs), affecting up to 80% of individuals at some point during their lifetime and accounting for an estimated 601 million YLDs worldwide.[4] The point prevalence of activity limitation due to LBP is approximately 7.3%, translating to nearly 540 million affected individuals at any given time.[5-8]

Beyond its clinical impact, LBP imposes a considerable economic burden on health care systems globally. In 2015 alone, LBP was responsible for approximately 60.1 million disability-adjusted life years (DALYs), reflecting a 54% increase since 1990, with the steepest rise observed in low- and middle-income countries.[9-15] In high-income settings, the financial implications are equally alarming; annual costs associated with LBP management exceed £12 billion in the United Kingdom and US$134.5 billion in the United States, largely driven by overmedicalization and low-value care.[16] These data underscore the urgent need for evidence-based, cost-effective approaches to LBP management.[17]

Healthcare providers' beliefs and attitudes play a pivotal role in shaping patient outcomes, influencing recovery trajectories, functional improvement, and adherence to treatment recommendations.[18] Evidence consistently demonstrates that clinicians' misconceptions directly affect clinical decision-making, including the use of diagnostic imaging, advice regarding physical activity, and selection of therapeutic interventions.[19] Orthopedic surgeons, neurologists, and physiotherapists frequently serve as first-contact practitioners for individuals with LBP, placing their knowledge and clinical beliefs at the forefront of patient care. Persistent misconceptions—such as the assumption that ongoing pain necessarily reflects structural tissue damage, that poor posture is a primary cause of LBP, or that imaging and surgery are routinely required—have been widely reported in the literature. These beliefs not only influence clinical practice but also reinforce fear-avoidant behaviors among patients, contributing to chronicity, psychological distress, and disability.[20]

A growing body of international research has examined myths and misconceptions related to LBP among healthcare students and practitioners across various disciplines. Studies from Europe, the Middle East, and South Asia have documented widespread endorsement of outdated biomedical beliefs among medical, physiotherapy, nursing, and allied health trainees.[6, 9–17] Variability in misconceptions has been observed across professional domains, stages of training, and healthcare systems, suggesting that educational background and discipline-specific curricula significantly influence clinical beliefs. Despite advances in pain science and the widespread availability of guideline-based recommendations emphasizing conservative, active, and biopsychosocial approaches, alignment between evidence and clinical beliefs remains inconsistent.[21-25]

Despite extensive international evidence, data from Pakistan and the broader Central Asian region remain limited. Inadequate integration of contemporary pain science into undergraduate and postgraduate curricula, limited dissemination of evidence-based guidelines, and a lack of structured inter-professional educational initiatives may contribute to the persistence of myths among healthcare practitioners. In this context, the present study aims to address a critical knowledge gap by evaluating myths and misconceptions regarding LBP among postgraduate orthopedic, neurology, and physiotherapy practitioners in Balochistan. By conducting an inter-domain analysis using Deyo's Myths Questionnaire, this study seeks to assess discipline-specific differences in beliefs, determine adherence to evidence-based principles, and provide region-specific insights to inform educational reforms and improve clinical management of low back pain.

METHODOLOGY

This cross-sectional observational study was conducted to evaluate the prevalence of myths and misconceptions regarding low back pain (LBP) among postgraduate healthcare practitioners across three professional domains. The study population comprised postgraduate practitioners from Orthopedics, Neurology, and Physiotherapy (Doctor of Physical Therapy, DPT), recruited from tertiary healthcare institutions in Balochistan, Pakistan. A total of 242 postgraduate practitioners were approached using purposive sampling, of whom 240 participants provided complete and valid responses and were included in the final analysis. Participants were equally distributed across the three professional domains,

including Orthopedics (n = 80), Neurology (n = 80), and Physiotherapy/DPT (n = 80). The study was conducted over a five-month period from August 2025 to December 2025, with data collection carried out primarily at Bolan Medical Complex (BMC) Hospital, Quetta, along with affiliated healthcare institutions. Postgraduate practitioners aged 25 years and above who were actively enrolled in or affiliated with Orthopedics, Neurology, or Physiotherapy training programs were eligible for inclusion. Practitioners from other medical disciplines, such as dentistry, pharmacy, or allied health sciences unrelated to musculoskeletal or neurological care, were excluded from the study. Data were collected using the validated Deyo's Myths Questionnaire, which assesses common misconceptions related to the etiology, prognosis, and management of low back pain. The questionnaire consists of ten myth-based statements, requiring participants to indicate their level of agreement.

Table 2: Deyo's Seven Myths of Back Pain. Deyo, R.A. (1998) 'Low-back pain', Sci Am, 279(2), 48-53 (LBP, Low back Pain)

S.No.	Myths
1	LBP is usually a serious medical condition.
2	LBP will become persistent and decorated in later life.
3	Persistent LBP is always related to tissue damage.
4	Everyone with back pain should have a spine radiograph.
5	Pain related to exercise is always a warning that harm is being done.
6	LBP is caused by poor posture.
7	LBP is related to weak core muscles.
8	Bed rest is the mainstay of therapy for LBP.
9	For a slipped disc, also known as a herniated disc or ruptured disc, the patient must undergo surgery.
10	Treatments like medication, steroids, and surgeries are effective in treating LBP.

Fig No. 1: Table showing myths of back pain

The tool has been widely used in previous studies to assess healthcare practitioners' beliefs regarding LBP.[6`9–17] Questionnaires were distributed in both hard-copy format and via Google Forms to ensure accessibility and maximize response rates. Prior to participation, written informed consent was obtained from all respondents, and strict confidentiality of participant information was maintained throughout the study. No identifying information was recorded. Data were entered and analyzed using the Statistical Package for the Social Sciences (SPSS), version 27.2. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic characteristics and response patterns. Chi-square tests were employed to assess associations between professional domains and responses to individual myths, with statistical significance set at $p < 0.05$. Ethical approval for the study was obtained from the Ethical Committee for Research, Postgraduate Medical Institute (PGMI), Civil Hospital Quetta, under reference number PGMI-67321, dated 17 August 2025.

RESULTS

A total of 242 postgraduate healthcare practitioners participated in the study. After exclusion of incomplete responses, 240 valid cases were included in the final analysis, yielding a response validity rate of 99.2%. The study population comprised 135 males (56.3%) and 105 females (43.8%) as shown in figure no 2. The mean age of the participants was 27.86 ± 3.05 years, with ages ranging from 25 to 45 years. Participants were equally distributed across three professional domains, including Orthopedics (n = 80, 33.3%), Physiotherapy/Doctor of Physical Therapy (DPT) (n = 80, 33.3%), and Neurology (n = 80, 33.3%).

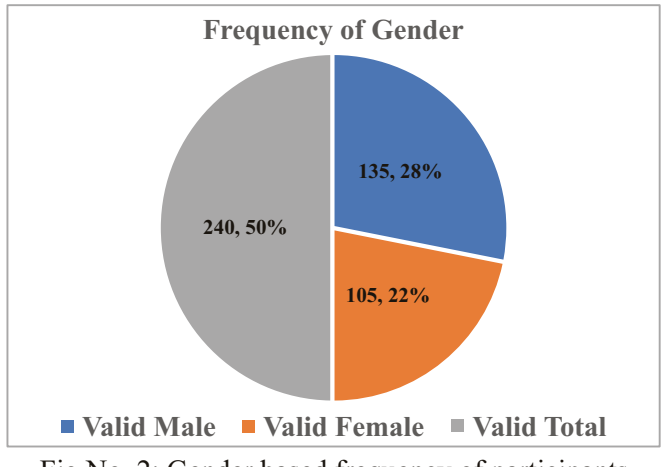


Fig No. 2: Gender based frequency of participants

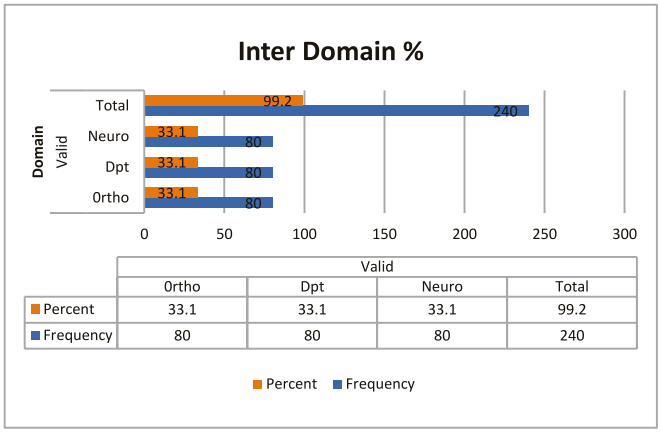


Fig No 3: Distribution of specialties of post graduates

Inter-domain comparison of demographic variables demonstrated no statistically significant association between professional domain and gender distribution ($\chi2=0.406$, df=2, p=0.816), indicating comparable gender representation across all three groups in fig no 4 Conversely, a statistically significant association was observed between professional domain and age categories ($\chi2=116.31$, df=20, $p<0.001$), suggesting variation in age distribution among orthopedic, physiotherapy, and neurology practitioners.

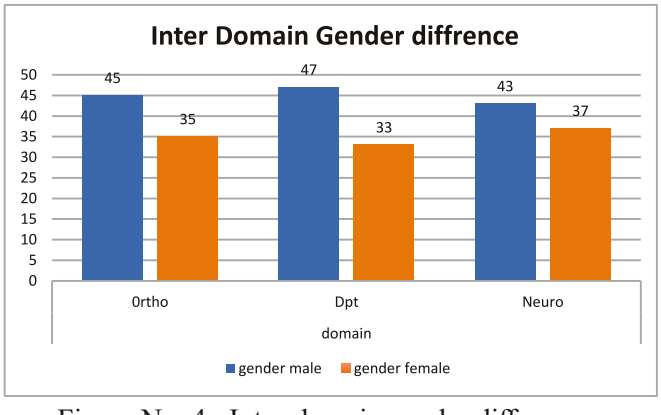


Figure No. 4: Inter-domain gender differences

Responses to Deyo's Myths Questionnaire revealed variable endorsement of misconceptions across domains. Statistically significant inter-domain differences were observed for several myths. For Myth 2—which states that low back pain progressively worsens and becomes persistent over time—a significant difference was found among the three groups ($\chi2=15.99$, df=4, p=0.003) as shown in figure no 5. Orthopedic and neurology practitioners demonstrated a higher tendency to endorse this misconception compared to physiotherapists.

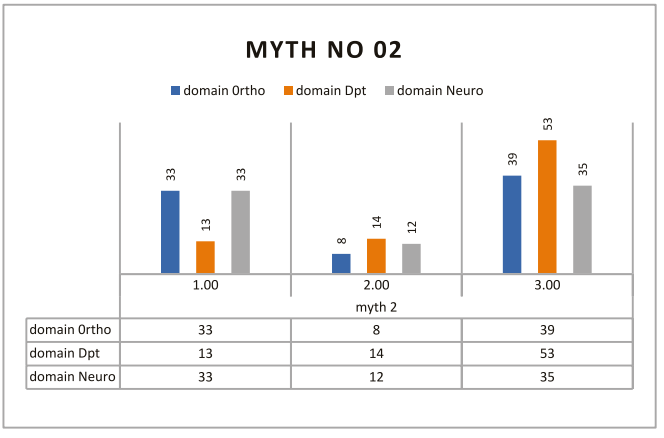


Figure No 5: Showing results of statistical significance among myth 02

Myth 6, addressing the belief that poor posture during sitting, standing, or lifting is the primary cause of low back pain, also showed a statistically significant association with professional domain ($\chi2=18.65$, df=4, p=0.001) as shown in figure no 6. This misconception was more frequently observed among orthopedic and neurology practitioners, whereas physiotherapists demonstrated comparatively better awareness of evidence refuting posture as a sole causative factor.

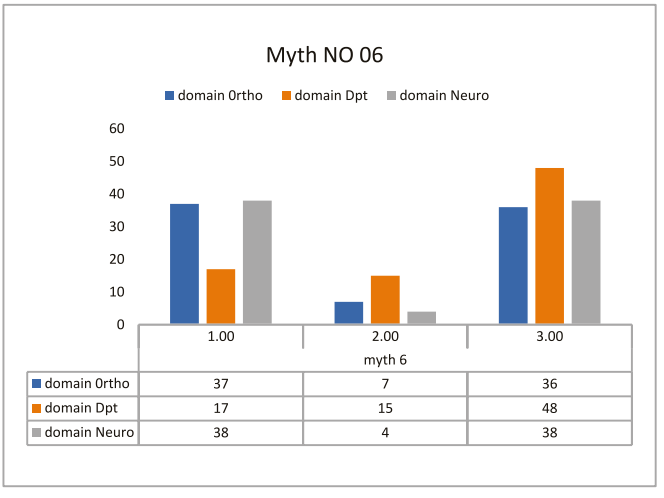
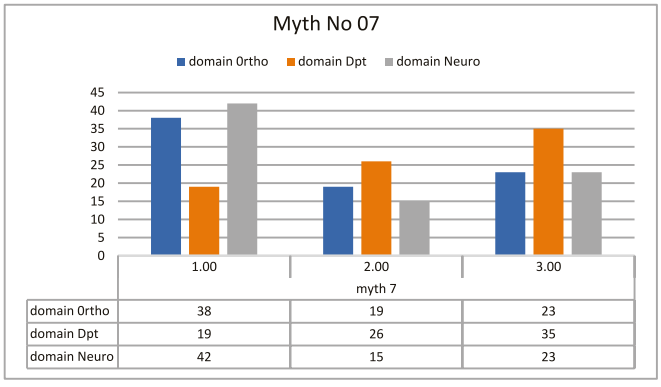


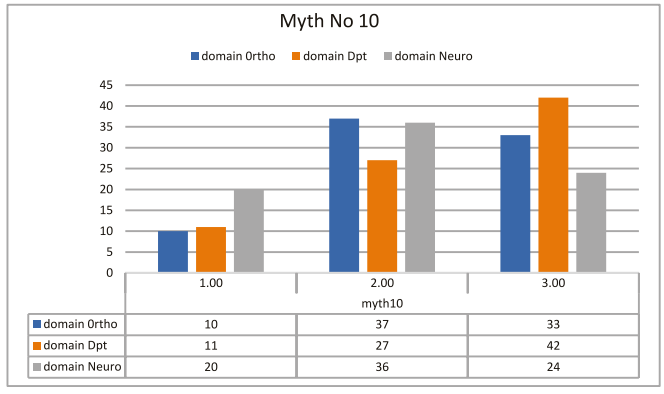
Figure No. 6: showing results of statistical significance among myth 6

Similarly, significant inter-domain differences were identified for Myth 7, which relates low back pain to weak core musculature ($\chi2=15.81$, df=4, p=0.003). Physiotherapists showed a relatively higher proportion of correct responses, reflecting greater familiarity with contemporary biopsychosocial models of pain and movement science.



domain 0rtho	38	19	23
domain Dpt	19	26	35
domain Neuro	42	15	23

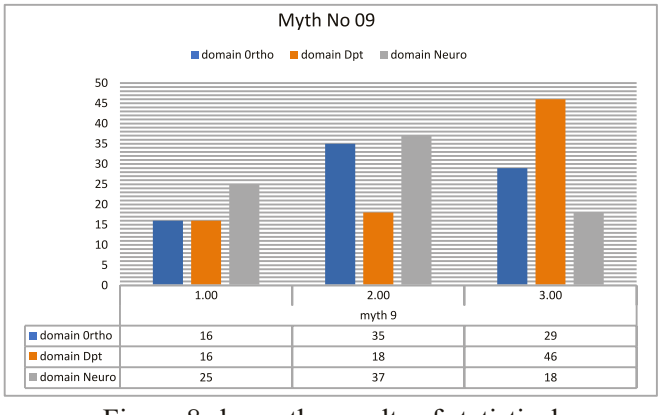
Figure No. 7: Shows the results of statistical significance among myth 07



domain 0rtho	10	37	33
domain Dpt	11	27	42
domain Neuro	20	36	24

Figure No. 10: shows the results of statistical significance among myth 10

Myth 9, stating that a slipped or herniated disc invariably requires surgical intervention, demonstrated one of the strongest inter-domain associations ($\chi^2 = 22.95$, $df = 4$, $p < 0.001$) as shown in figure no 8. Neurology and orthopedic practitioners were more likely to endorse surgical necessity, whereas physiotherapists more frequently recognized the role of conservative management.



domain 0rtho	16	35	29
domain Dpt	16	18	46
domain Neuro	25	37	18

Figure 8 shows the results of statistical significance among myth 09

Additionally, Myth 10, concerning the belief that medical treatments such as medications, injections, or surgery are universally effective in treating low back pain, showed a statistically significant difference among domains ($\chi^2 = 11.17$, $df = 4$, $p = 0.025$) as shown in figure no 10. This finding highlight variability in treatment-related beliefs across disciplines.

In contrast, no statistically significant inter-domain differences were observed for Myth 1 (low back pain is usually a serious medical condition) ($\chi2=6.25$, $p=0.182$), Myth 3 (persistent low back pain is always related to tissue damage) ($\chi2=2.24$, $p=0.692$), Myth 4 (all patients with low back pain require radiographic imaging) ($\chi2=6.89$, $p=0.142$), Myth 5 (pain experienced during exercise always indicates harm) ($\chi2=3.48$, $p=0.482$), and Myth 8 (bed rest is the mainstay of treatment for low back pain) ($\chi2=9.14$, $p=0.058$). These findings suggest that misconceptions related to disease severity, imaging, pain interpretation, and rest-based management remain prevalent across all professional domains without marked inter-group variation.

Overall, the results indicate that while physiotherapists demonstrated comparatively better awareness in domains related to core stability and active management, substantial misconceptions persist across orthopedic, neurological, and physiotherapy practitioners. The presence of significant inter-domain differences in multiple myths underscores the influence of professional training background on beliefs regarding low back pain.

DISCUSSION

The present study demonstrates a substantial prevalence of myths and misconceptions regarding low back pain (LBP) among postgraduate healthcare practitioners in Balochistan, with significant variability across professional domains, including orthopedics, neurology, and physiotherapy. Although all three groups exhibited persistent misconceptions, physiotherapists demonstrated comparatively better awareness in domains related to active management and contemporary pain science, particularly concerning

core musculature and conservative treatment strategies. Conversely, orthopedic and neurology practitioners showed a higher tendency to endorse structural and biomedical explanations of LBP, including beliefs related to chronicity, posture, and surgical necessity.

Significant inter-domain differences were observed for multiple myths, notably those addressing the progressive nature of LBP, the role of posture, the contribution of weak core musculature, the perceived inevitability of surgical intervention for disc herniation, and the effectiveness of medical treatments such as medications and injections. These findings suggest that professional training background strongly influences clinical beliefs, with physiotherapists more frequently aligning with biopsychosocial and movement-based models of care, while orthopedic and neurology practitioners demonstrated greater reliance on traditional biomedical frameworks. Importantly, no significant inter-domain differences were identified for myths related to disease severity, the necessity of diagnostic imaging, exercise-related pain, or bed rest, indicating that these misconceptions remain widely shared across disciplines.

The findings of this study are consistent with international literature reporting widespread misconceptions about LBP among healthcare practitioners. Previous studies conducted in Europe, the Middle East, and South Asia have similarly documented persistent beliefs linking LBP to structural damage, poor posture, and the routine need for imaging and surgical intervention.[6↑9–17] McCabe et al. reported that physiotherapy students continued to endorse outdated etiological beliefs despite exposure to evidence-based curricula, while Kristine and Walter highlighted comparable misconceptions among medical trainees.[18–26] Research by Ammar Shuail et al. further demonstrated frequent overemphasis on posture and imaging among physiotherapy cohorts, findings that parallel the present study's observations across all three professional domains.[8↑12↑27↑28]

Notably, the present study identified deviations from some international reports, particularly in the distribution of misconceptions across disciplines. While physiotherapists demonstrated relatively better understanding of core stability and conservative management, misconceptions regarding disease severity, chronicity, and posture persisted across all groups without significant variation. This suggests that although discipline-specific training may influence certain beliefs, broader systemic gaps in pain education remain unresolved. [27-28].The persistence of these myths reflects incomplete integration of contemporary evidence-based guidelines into postgraduate training programs and highlights the ongoing dominance of outdated biomedical models within clinical education. The findings underscore the urgent need for curriculum reform and targeted educational strategies across orthopedic, neurology, and physiotherapy training programs. Integrating guideline-based content, emphasizing biopsychosocial models of pain, and promoting inter-professional education may help bridge existing knowledge gaps. Structured interventions such as continuing medical education (CME), workshops, and multidisciplinary case discussions could play a critical role in aligning practitioner beliefs with current evidence, ultimately improving patient care and reducing unnecessary investigations and interventions. [29–35]

This study has several limitations. The use of purposive sampling and recruitment from a limited number of tertiary-care institutions may restrict the generalizability of findings. Additionally, reliance on self-reported questionnaire data introduces the possibility of response bias. Despite these limitations, the study provides valuable, region-specific insights into discipline-related differences in LBP-related beliefs among postgraduate practitioners in Balochistan. Future research should employ multicenter and longitudinal designs, evaluate the effectiveness of educational interventions, and explore the relationship between practitioner beliefs and patient outcomes.

CONCLUSION

This study identified a considerable prevalence of myths and misconceptions regarding low back pain among postgraduate practitioners in Balochistan. While MBBS practitioners demonstrated comparatively greater awareness in selected domains, such as the role of surgery and bed rest, physiotherapy practitioners performed better in recognizing myths related to core stability. Both groups, however, showed persistent misconceptions, particularly concerning the perception of LBP as a serious pathological condition, its chronicity, and posture-related causes. The findings highlight variations in knowledge across professional domains and indicate the need for further exploration of educational strategies to address these misconceptions.

ETHICAL APPROVAL

Approval for this research project was obtained from the Ethics Committee of the Postgraduate Medical Institute (PGMI), Quetta Civil Hospital. Ethical approval was granted under Reference No. PGMI-67321 on 17 August 2025.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest. The research was conducted independently without any personal, financial, or professional influence on study design, analysis, or reporting.

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AUTHORS' CONTRIBUTIONS

NK: Conceptualization, investigation, writing manuscript
NMR: Investigation, data collection
KB: Investigation, data collection, supervision
MB: Data collection and analysis, writing manuscript
All authors have read and agreed to the published version of the manuscript.

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