American Journal of Psychiatric Rehabilitation

Expert Opinion Article

Role of Comprehensive Rehabilitation In Functional Recovery After Multi-Level Lumbar Fractures: A Case Report

Saurabh Maurya[1], Jibran Ahmed Khan[1*], Reshma Reshma[1], Saira Bano[2]

[1*]Assistant Professor, College of Applied Education and Health Sciences, Meerut (Affiliated to Atal Bihari Vajpayee Medical University, Lucknow, U.P, India)
[2]Physiotherapist, Department of Physiotherapy, Max Hospital, Lucknow, U.P, India

***Corresponding Author:** Dr. Jibran Ahmed Khan
*(PT) Assistant Professor, Department of Physiotherapy, College of Applied Education And Health Sciences, Meerut (Affiliated to Atal Bihari Vajpayee Medical University, Lucknow, U.P, India) Email id; Jibranpathan1990@gmail.com

Abstract
Introduction: Lumbar fractures are commonly associated with chronic pain, functional limitations, and reduced quality of life. In addition to physical disability, such injuries may also lead to psychological distress and diminished participation in work and social roles.
Case Report: We present the case of a 55-year-old male with multiple lumbar vertebral fractures who was managed with a structured 12-week rehabilitation program. The intervention combined physiotherapy, psychosocial counseling, and family education. Patient progress was evaluated using validated measures of pain, mobility, independence in daily activities, psychological well-being, and quality of life. Marked improvements were observed across all domains, including significant reduction in pain intensity, enhanced mobility, increased independence in activities of daily living, and improved emotional status.
Conclusion: This case highlights the importance of a multidisciplinary rehabilitation approach following spinal trauma. Integrating physical rehabilitation with psychosocial support can promote functional recovery, enhance emotional well-being, and improve overall quality of life in patients with lumbar fractures.

Keywords: Lumbar fracture, Rehabilitation, Physiotherapy, Psychosocial support, Quality of life

Introduction

Lumbar vertebral injuries represent a major cause of disability and are often associated with long-term physical, psychological, and social consequences. When several vertebrae are affected, the likelihood of persistent pain and functional limitation increases substantially (1,2). Conventional management typically focuses on surgical stabilization and pharmacological pain relief (3). However, recovery may remain incomplete if psychosocial dimensions of rehabilitation are neglected. Patients frequently experience anxiety, depression, and difficulty resuming occupational and community roles after sustaining spinal trauma (4,5).Emerging literature suggests that optimal outcomes require a broader perspective—one that integrates physiotherapy with psychological and social support (6–7). In addition, the role of rehabilitation within academic and community healthcare facilities is of increasing importance, especially in resource-limited settings. The present case report was conducted at the Outpatient Department (OPD) of the College of Applied Education and Health Sciences, where multidisciplinary rehabilitation services are routinely provided to patients with musculoskeletal and neurological conditions. This environment not only provides therapeutic interventions but also serves as a platform for clinical education, research, and evidence-based practice.

Thus, documenting rehabilitation outcomes from this setting is valuable not only for patient care but also for academic learning. The current report highlights the recovery of a middle-aged male with multi-level lumbar fractures, emphasizing the role of comprehensive, patient-centered rehabilitation delivered in a teaching institution that combines service with education.

Case Report

A 55-year-old male sustained compression fractures involving vertebrae D12–L5 after a traumatic fall from height. He was initially evaluated by an orthopedic surgeon, and radiographs confirmed multiple vertebral fractures without evidence of neurological compromise. After acute management with immobilization and medication, the patient continued to experience persistent pain, immobility, and dependency in daily activities. He was subsequently referred one

month post-injury to the Physiotherapy Outpatient Department (OPD) at the College of Applied Education and Health Sciences for a structured rehabilitation program.

On admission to the OPD, the patient reported severe low back pain that restricted him from performing basic daily activities such as transfers, self-care, and walking. He presented with poor posture, reduced lumbar mobility, significant muscle weakness, and fear of movement. Psychological distress was evident, with the patient expressing anxiety and low confidence in regaining independence. Socially, he was unable to resume occupational duties or participate in family roles, which further contributed to emotional strain.

At this stage, the rehabilitation team identified key problem areas: uncontrolled pain, reduced mobility, and muscle weakness, dependency in activities of daily living, psychological burden, and limited family engagement. A comprehensive rehabilitation plan was designed with clear goals of pain relief, functional independence, psychological support, and reintegration into daily and occupational activities.

The program was planned as a 12-week, multidisciplinary intervention involving physiotherapy, counseling, and patient-family education. The OPD environment provided an ideal setting for structured follow-ups, continuous assessment, and progressive adaptation of the treatment plan. The involvement of faculty and postgraduate students ensured evidence-based techniques were applied, while the patient also benefitted from motivation through consistent support and education. Table 1 provides a summary of his baseline clinical evaluation.

Baseline Evaluation

Parameter	Score/Observation	Interpretation
VAS (0–10)	8	Severe pain
TUG (sec)	28	Marked mobility restriction
ODI (%)	72%	Severe disability
SF-36	Low scores across domains	Poor quality of life
WHOQOL-BREF	Reduced physical & psychological scores	Compromised well-being
HADS – Anxiety	14	Clinically significant anxiety
HADS – Depression	12	Moderate depression
ADLs	Dependent for transfers & self-care	Reduced independence

Intervention

The rehabilitation program was delivered over a 12-week period. Treatment emphasized both physical recovery and psychological adaptation. The physiotherapy component included pain management, posture re-education, progressive strengthening shown in fig. 1, and mobility training. Gait re-education, functional retraining and balance training for activities of daily living (ADLs) were gradually introduced shown in fig, 2. In parallel, counseling sessions using cognitive–behavioral strategies were conducted to address anxiety and depressive symptoms. Family members were also engaged to provide support and motivation. The overall objective was to reduce pain, improve independence, and foster psychological resilience.

Fig 1: Quadriceps Strengthening

Fig 2: Gait Training

Progress and Outcomes

The patient was reassessed at six weeks and again at twelve weeks. Substantial improvements were noted in pain levels, functional ability, and mood. Table 2 summarizes the progression of key outcome measures.

Outcome	Baseline	6 weeks	12 weeks
VAS (0–10)	8	4	2
TUG (sec)	28	18	12
ODI (%)	72%	46%	24%
HADS – Anxiety	14	9	6
HADS – Depression	12	7	4
SF-36	Low	Moderate	High
WHOQOL-BREF	Low	Moderate	High

Discussion

This case highlights the importance of addressing both the physical and psychological consequences of lumbar fractures. Beyond measurable improvements in pain and mobility, the patient demonstrated notable reductions in anxiety and depression, underscoring the interconnectedness of physical function and mental health (6–7). Prior studies have reported that rehabilitation outcomes are enhanced when counseling, structured education, and social support are incorporated into the treatment plan. Such measures not only improve adherence but also increase motivation and long-term independence.

Standardized instruments such as the Oswestry Disability Index and Timed Up and Go test provided valuable objective benchmarks of functional progress. Similarly, the HADS and WHOQOL-BREF offered insight into psychological and quality-of-life changes. By integrating the International Classification of Functioning, Disability and Health (ICF) framework, a holistic rehabilitation plan was developed, targeting mobility, independence, emotional recovery, and social reintegration.

Conclusion

Rehabilitation after lumbar fractures should extend beyond the traditional focus on pain management and exercise. This case demonstrates that combining physiotherapy with psychosocial strategies can produce significant gains in physical function, emotional well-being, and community reintegration. A multidisciplinary and patient-centered approach is therefore essential to optimize recovery and quality of life following spinal injury.

Patient consent

Written informed consent was obtained from the patient for participation in this case report and for publication of clinical details and images. The patient understands that her name and initials will not be published, and every effort will be made to conceal her identity.

Acknowledgment

First of all, I would like to thanks to Almighty and express my sincere thanks to all authors and my family for their tremendous support during preparation of this research article.

Conflict of Interest: None
Source of Funding: None

References

1. Denis F. The three column spine and its significance in the classification of acute thoracolumbar spinal injuries. Spine (Phila Pa 1976). 1983; 8(8):817-31.
2. Vaccaro AR, Lehman RA Jr, Hurlbert RJ, Anderson PA, Harris M, Hedlund R, et al. Spine trauma classification. Spine J. 2005;5(3):207-14.
3. Wood KB, Li W, Lebl DR, Ploumis A. Management of thoracolumbar spine fractures. Spine J. 2014; 14(1):145-64.
4. Smith JS, Shaffrey CI, Glassman SD, Berven SH, Schwab FJ, Hamill CL, et al. Spinal deformity and quality of life. Neurosurgery. 2008; 63(5):817-23.
5. Riesenburger RI, Vaccaro AR. Spinal injuries and rehabilitation. Neurosurg Clin N Am. 2017; 28(1):49-58.
6. Kennedy P, Evans MJ, Sandhu N, Douglas R. Psychological outcomes after spinal cord injury: a systematic review. Spinal Cord. 2010;48(9):729-34.
7. Craig A, Guest R, Tran Y, Middleton J. The psychological impact of spinal injury. Spinal Cord. 2015; 53(3):175-82.