



Clinical Findings in Patients Presenting with Low Back Pain at Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya

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Abstract: Background: Low back pain (LBP) is a common musculoskeletal condition and a leading cause of disability worldwide, contributing to reduced quality of life and economic burden. Despite its high prevalence, there remains variability in its clinical presentation across different populations, particularly in low- and middle-income countries. Objective: To describe the clinical findings in patients presenting with low back pain at Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya. Methods: A hospital-based cross-sectional study at MTRH (September 2024-August 2025) included 218 adults with low back pain who underwent lumbosacral X-ray and MRI. Consecutive sampling was used. Socio-demographic and clinical data were collected using structured tools and analyzed using STATA version 18 and summarized using descriptive statistics. Results: The mean age of participants was 51.2 years, with a female predominance (60.6%). Majority were overweight (32.1%) or obese (58.3%). A total of 74.8% of the participants presented with gradual onset pain with 45.4% presenting with symptoms lasting more than 12 weeks. Pain was sharp or aching in nature, with moderate intensity pain being most frequently reported. Aggravating factors included prolonged standing, sitting, and physical activity. Exercise and postural changes provided relief. Sciatic pain affected 31.7% of patients, and over one-third were unable to work due to functional limitation. Conclusion: Low back pain at MTRH affects middle-aged females with high BMI, was chronic and mechanically aggravated. Recommendation: High index of suspicion is required to make accurate clinical diagnosis. Further research on LBP is required as there is paucity of publications in developing countries.

Keywords: Clinical findings, Low back pain, Lumbar spine, MTRH, Sciatica.

INTRODUCTION

Low back pain (LBP) is a highly prevalent and challenging musculoskeletal condition affecting a large proportion of the global population, with a reported lifetime prevalence ranging from 50% to 80% [1, 2]. Clinically, it represents one of the most common conditions encountered in primary healthcare settings and remains a significant public health concern due to its high frequency of presentation and recurrence [3].

Globally, LBP constitutes a major cause of morbidity, with the World Health Organization estimating that approximately 619 million people are currently affected,

making it one of the leading causes of disability worldwide [4]. It is associated with substantial economic burden due to loss of productivity, increased healthcare utilization, and long-term disability, thereby impacting both individuals and society at large [5-7]. The clinical presentation of LBP is heterogeneous, ranging from mechanical and structural causes to inflammatory and neuropathic etiologies, as well as a large proportion of nonspecific cases. This variability contributes to its diagnostic complexity and challenges in management. Clinically, LBP is broadly classified into specific and nonspecific types, with some cases persisting beyond two weeks and often requiring minimal or targeted investigations depending on clinical suspicion [1, 8].

Beyond its high prevalence, LBP significantly contributes to disability-adjusted life years (DALYs), largely due to functional limitations, reduced productivity, and associated healthcare costs [1]. Despite its global impact, variability in prevalence, sociodemographic factors, clinical patterns and presentation continues to exist across different populations and healthcare settings, particularly in low- and middle-income countries where data remains limited [9-18]. Of concern is lifestyle modification and promotion of rehabilitation practices which reduce pain related disability and hence promote work productivity [12, 14-18]. This study therefore aimed to describe the clinical findings in patients presenting with low back pain at Moi Teaching and Referral Hospital (MTRH), Eldoret, to improve understanding of its local clinical profile and support better diagnostic and management strategies.

MATERIALS AND METHODS

This study was a hospital-based cross-sectional study conducted at Moi Teaching and Referral Hospital (MTRH), located in Eldoret, Kenya. The study was carried out in the Orthopaedic and Neurosurgical clinics and wards of the hospital, which serve as major referral points for patients with spinal conditions. The study period was between September 2024 and August 2025. The study population consisted of adult patients aged 18 years and above who presented with a clinical diagnosis of low back pain having undergone both lumbosacral X-ray and Magnetic Resonance Imaging (MRI) as part of their diagnostic work-up. Patients who had spinal congenital deformities or who had undergone prior spinal surgeries were excluded from the study.

Participants were recruited using consecutive sampling technique. Data was collected from eligible participants using a structured data collection tool. Variables captured included socio-demographic characteristics such as age, gender, occupation, weight, and height. Clinical characteristics recorded included onset of low back pain, duration of symptoms, character of pain, aggravating and relieving factors. These clinical findings were obtained through patient interviews and clinical evaluation documented during consultation. Completed data forms were entered into Microsoft Excel database for cleaning and coding. Data quality checks were performed to ensure consistency and accuracy before analysis. Statistical analysis was conducted using STATA version 18 software. Descriptive statistics was used to summarize patient characteristics and clinical findings.

Prior to commencement of the study, ethical approval was obtained from the Institutional Research and Ethics Committee (IREC), Moi University and Moi Teaching and

Referral hospital with approval number 0004916. Additional authorization to conduct the study was granted by the management of MTRH, through the Chief Executive Officer, ensuring institutional clearance for data collection within the hospital setting. Furthermore, a research permit was obtained from the National Commission for Science, Technology and Innovation (NACOSTI), under license number NACOSTI/P/25/416187, in compliance with national research regulations and standards. The investigation was approved, and informed consent was obtained from all participants prior to their involvement in the study.

RESULTS AND DISCUSSION

The study included 218 participants with low back pain. Age ranged from 18 to 88 years with a mean age of 51.2 years (SD=16). Most patients were female (60.55%), over half of the participants were obese (58.26%), with 32.11% being overweight and 9.63% with a normal BMI. In terms of occupation most were self-employed (40.37%) or unemployed (31.65%), formal employment was the least common (10.09%).

Table 1: Sociodemographic characteristics of patients with low back pain

Sociodemographic characteristics	Frequency (%)
Age	
Mean (SD)	51.2 (16.0)
Range	18 - 88
Gender	
Male	86 (39.45%)
Female	132 (60.55%)
BMI	
Normal	21 (9.63%)
Overweight	70 (32.11%)
Obese	127 (58.26%)
Occupation	
Self-employment	88 (40.37%)
Informal employment	39 (17.89%)
Unemployment	69 (31.65%)
Formal employment	22 (10.09%)

Majority of patients (74.77%) experienced gradual onset pain, while 25.23% reported sudden pain. Nearly half (45.41%) had chronic pain (>12 weeks), while 29.36% reported acute pain (<6 weeks). Pain was mostly sharp/aching (47.71%) or dull (33.48%), with few cases of impulse-triggered pain (4.13%). Moderate pain (49.54%) was most common, followed by severe pain that affects daily life (27.52%), while 22.94% had mild pain.

Only 0.5% reported "worst pain" (9-10/10) requiring bed rest. Pain Intensity in this study was measured using the Numeric Pain Rating Scale (NPRS), a standardized 0-10 scale for musculoskeletal pain assessment. Participants rated their pain from 0 (no pain) to 10 (worst possible pain), and scores were categorized as mild (1-3), moderate (4-6), or severe (7-10). The aggravating factors mentioned were prolonged standing (29.4%), activity (27.1%), and prolonged sitting (27.1%).

A small subset worsened with rest (5%) or Valsalva maneuvers (0.5%). Relieving factors mentioned were exercise (35.8%), positional changes (33%), and rest (28%). A few had no relief (1.8%) or relied on bending forward (1.4%). The pain was described as sciatic by 31.7% of the participants, unilateral by 19.3% while 29.4% had no radiating pain. 27.1% reported no abnormal sensation, and 10.6% reported incontinence.

Table 2: The clinical findings in patients with low back pain

Clinical characteristics	Frequency (%)
Onset	
Sudden	55 (25.23%)
Gradual	163 (74.77%)
Duration	
<6 weeks	64 (29.36%)
6-12 weeks	55 (25.23%)
>12 weeks	99 (45.41%)
Character	
Dull	73 (33.48%)
Sharp aching	104 (47.71%)
Impulse produces pain	9 (4.13%)
Others	32 (14.68%)
Intensity on ten	
Mild	50 (22.94%)
Moderate	108 (49.54%)
Severe	60 (27.52%)
Pain location	
L1/L2	6 (2.75%)
L2/L3	21 (9.63%)
L3/L4	40 (18.35%)
L4/L5	84 (38.53%)
L5/S1	51 (23.40%)
S1/S2	16 (7.34%)

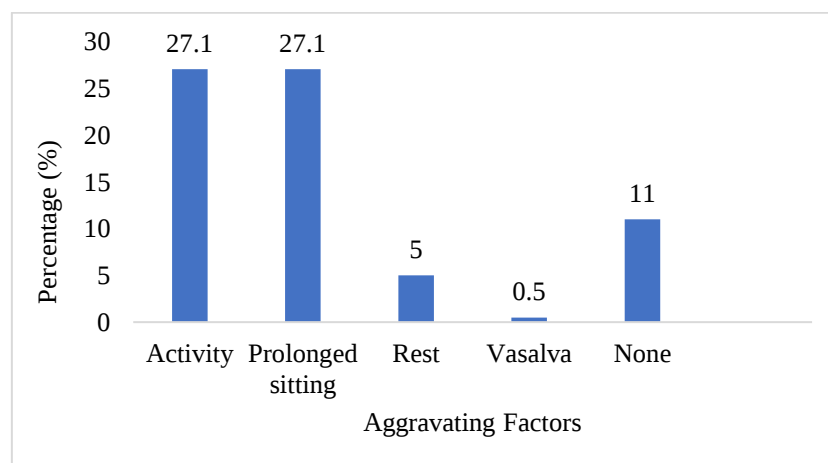


Figure 1: Aggravating factors

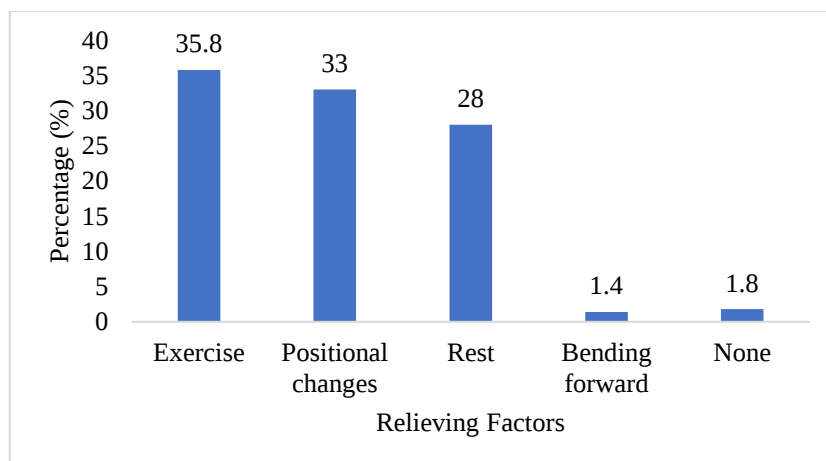


Figure 2: Relieving factors

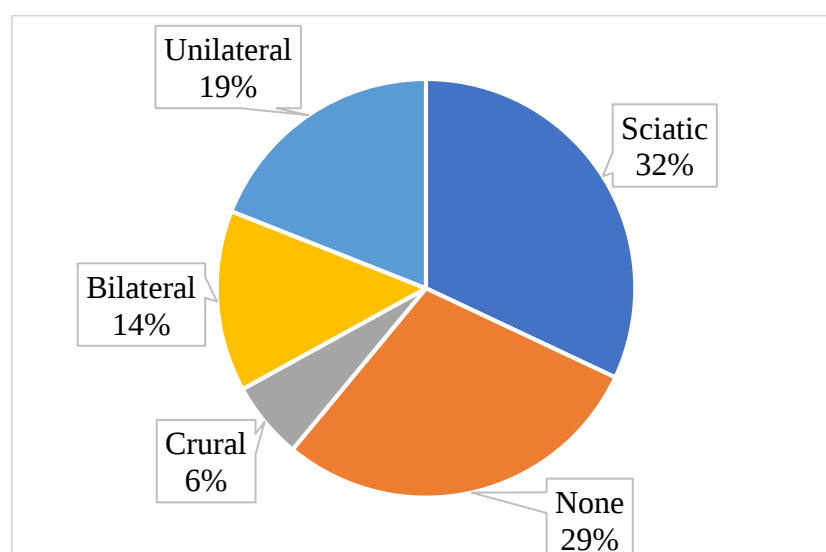


Figure 3: Radicular pains

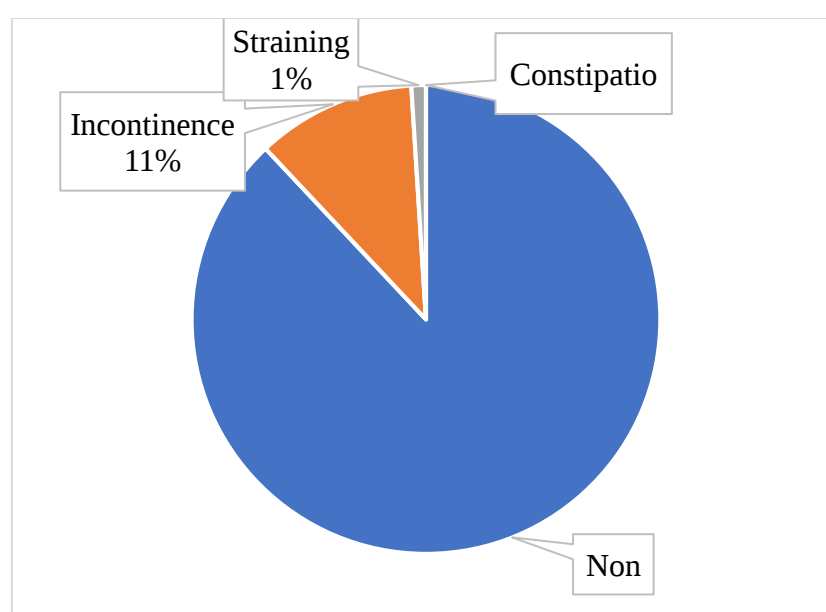


Figure 4: Sphincter dysfunction

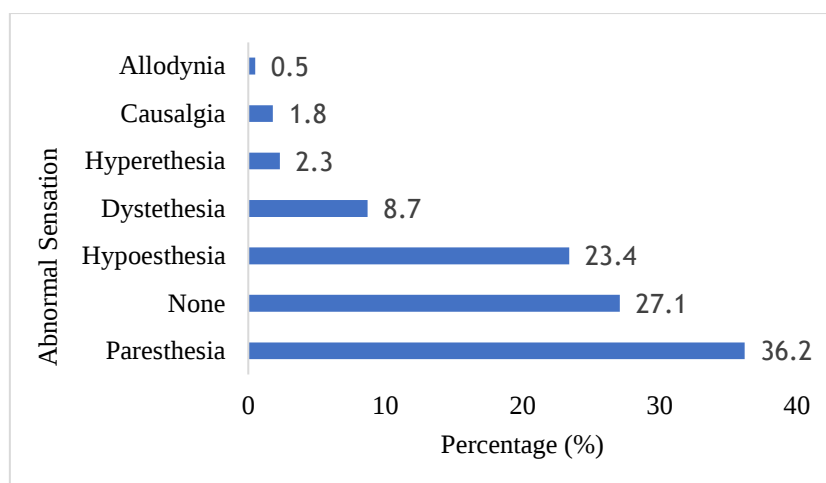


Figure 5: Abnormal sensation

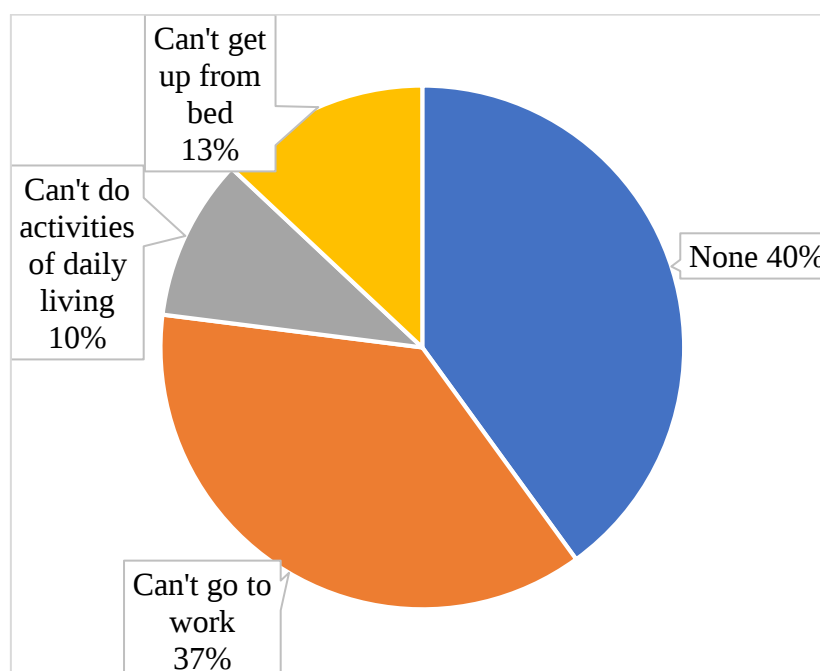


Figure 6: Level of activity

About 40.4% of the participants reported no major limitations, but: 37.2% could not work, 12.8% were bedridden, and 9.6% needed help with activities of daily living (bathing, dressing, and eating).

Low back pain (LBP) is a leading global cause of disability, affecting up to 80% of adults. In Sub-Saharan Africa and Kenya, factors such as high physical workloads, delayed care, and limited access to advanced imaging often lead to chronic and recurrent symptoms [9]. This study included 218 patients with a mean age of 51.2 years (Range 18-88), reflecting the established pattern that LBP prevalence peaks in middle-aged and older populations due to cumulative mechanical stress and progressive spinal degeneration [14,16]. This demographic profile aligns with global trends but contrasts with regional research in Uganda that noted a significantly younger affected population, highlighting the variability of LBP across different cohorts [17].

A significant female predominance (60.6%) was observed, consistent with global evidence suggesting increased susceptibility in women due to anatomical, hormonal, and psychosocial factors [4,10]. Furthermore, a strong link between body mass index (BMI) and LBP was reinforced, with 58.3% of participants being obese and 32.1% overweight. High BMI amplifies mechanical loading on the lumbar spine, accelerating degenerative disc and facet joint changes [11,12].

The socioeconomic impact was evident in the participants' occupational patterns; most were self-employed (40.4%) or unemployed (31.6%), with only 10.1% in formal employment. These findings suggest that physically demanding or unstable work environments in resource-limited settings predispose individuals to chronic musculoskeletal strain and limit participation in the formal workforce [13,14].

Clinical findings were consistent with chronic degenerative etiologies, characterized by a predominance of gradual onset (74.8%) and symptoms lasting more than 12 weeks (45.4%). The description of pain as sharp, aching, or dull suggests mixed nociceptive-neuropathic mechanisms. Symptoms were largely mechanical, aggravated by prolonged standing or sitting (27.1-29.4%) and relieved by exercise or postural changes, underscoring the necessity of ergonomic management in treatment [16,18].

Specific pathology was indicated by sciatic pain in 31.7% of patients, suggesting nerve root involvement. Pain was most frequently localized to the L4/L5 (38.5%) and L5/S1 (23.4%) regions, which are the levels most susceptible to degenerative disc disease and herniation [15,16]. The functional consequences were severe, with 37.2% of participants reporting an inability to work and 9.6% requiring assistance with daily activities. These results emphasize the multifactorial and disabling nature of LBP at MTRH, highlighting the vital need for integrated clinical and imaging assessments to guide effective management of low back pain patients.

CONCLUSION

Low back pain at MTRH predominantly affects middle-aged adults, with higher occurrence in females and patients with high BMI. Most patients present with chronic, mechanically aggravated pain and significant functional limitation. Low back pain contributes substantially to disability, highlighting the need for early diagnosis, multidisciplinary management, and preventive strategies targeting modifiable risk factors such as obesity and ergonomic factors.

RECOMMENDATIONS

Clinicians should have high index of suspicion when handling patients with LBP in order to come up with the real cause and make accurate clinical diagnosis in these patients. This is because LBP is a heterogenous condition (many differential diagnoses). There is need for further research as there is limited knowledge especially in Kenya and other regional countries unlike in industrialized countries.

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Conflict of Interest Statement

The authors did not get any external funding, hence there was no conflict of interest.

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