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Review Article

Low Back Pain in Primary Care: A Narrative Review of Occupational, Clinical, and Family Community Factors

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Abstract:

Low back pain is a common musculoskeletal complaint that may limit mobility, work performance, and daily activities. This narrative review summarizes the definition, clinical presentation, occupational and behavioral risk factors, primary-care assessment, conservative management, and family–community considerations of low back pain, while integrating an illustrative community-medicine case from the source report. The patient was a 54-year-old woman who worked as a beautician and had longstanding intermittent stabbing low back pain radiating to the hips and legs. Symptoms were aggravated by prolonged sitting, prolonged walking, and morning activity, and were relieved by rest or medication. Neurological and autonomic findings were reported as normal, provocative tests were negative, and no laboratory or imaging examinations were performed. Occupational exposure to prolonged sitting, repetitive activity, and heavy physical tasks was prominent. Management included generic pharmacotherapy, advice on medication adherence, ergonomic posture, healthy lifestyle, regular exercise, trigger avoidance, and follow-up. Family support was favorable; the source report documented a Family APGAR score of 10 and good SCREEM domains. Overall, low back pain in primary care should be approached through clinical assessment, occupational risk modification, patient education, and attention to family and community context.

Keywords: Low Back Pain; Primary Care; Occupational Ergonomics; Family Medicine; Community Medicine.

1. Introduction

Low back pain (LBP) is one of the leading causes of musculoskeletal disability worldwide and continues to generate a substantial population burden across age groups and regions (1). Chronic LBP can adversely affect physical function, mental health, and health-related quality of life, underscoring its multidimensional clinical impact (2). Musculoskeletal complaints, including LBP, are also frequently encountered in primary care, making early assessment and appropriate management particularly relevant at the first-contact level (3).

Beyond pain intensity, LBP can disrupt daily activity and professional roles, with chronic symptoms affecting work participation and personal life (4). Prolonged sitting is a plausible mechanical exposure because office-chair design can influence lumbar posture, muscle activity, and perceived discomfort during sustained sitting (5). Population-based occupational evidence likewise links sitting at work with musculoskeletal complaints (6). Workplace studies among shopkeepers (7) and cashiers (8) further show that work-related musculoskeletal disorders are shaped by occupational exposures and task demands. Ergonomic and psychosocial risk factors may act together in the development of work-related musculoskeletal symptoms (9), while higher occupational

physical demands have also been associated with low back pain and disability (10). These findings support explicit assessment of posture, repetitive movement, sitting duration, and workload in patients whose symptoms are aggravated by work.

A primary-care approach should move beyond symptom description toward risk stratification and function-oriented management. Risk-based stratified care for musculoskeletal pain has been evaluated in cluster-randomized primary-care settings (11). At the same time, unnecessary imaging remains a recognized implementation challenge in LBP care, with clinician and system barriers influencing adherence to imaging recommendations (12). Evidence from guideline-implementation research suggests that structured implementation strategies can improve LBP management in primary care (13). The aim of this review is therefore to synthesize the clinical, occupational, and family-community dimensions of LBP and to illustrate their application using the anonymized clinical context documented in the source report.

2. Main Body / Subheadings

Definition and Clinical Spectrum of Low Back Pain

LBP may be nonspecific or arise from identifiable structures such as intervertebral discs, sacroiliac joints, or facet joints, and differentiating potential pain generators relies on careful clinical assessment rather than a single symptom or test (14). Clinically, pain may remain localized to the lumbar or lumbosacral region or radiate to the hip or lower limb; history taking should therefore document radiation, sensory or motor change, and bowel or bladder dysfunction, while screening for red flags remains important when serious spinal pathology is suspected (15).

In the illustrative patient, the pain had been present since adolescence, became more severe after the first childbirth, and was described as stabbing and intermittent. Symptoms worsened on waking, after prolonged sitting, and after prolonged walking, but improved with rest or medication. Fever, nausea, vomiting, and tenderness were denied, and bowel and bladder function were reported as normal.

Occupational and Behavioral Risk Factors

Occupational and behavioral assessment is particularly important when symptoms are linked to repetitive work, prolonged sitting, or sustained postures. Cross-sectional evidence among non-academic workers has identified a substantial burden of work-related musculoskeletal disorders and associated occupational factors (16). Recent work also supports an association between prolonged sitting, poor posture, and lower-back symptoms (17). Occupational studies in school teachers similarly demonstrate that low back pain is influenced by work-related and individual predictors (18). Accordingly, the patient's age, activity pattern, sitting duration, repetitive movement, workload, physical conditioning, and psychosocial context should be considered together rather than in isolation.

For the illustrative patient, occupational exposure was especially relevant. She worked as a beautician in a salon, frequently performed physically demanding tasks, and spent prolonged periods sitting while serving clients. The patient's own perception was that poor sitting habits, repetitive work-related movements, and infrequent exercise contributed to the recurrence of symptoms. This pattern supports a practical emphasis on ergonomics and activity modification.

Primary-Care Clinical Assessment

The clinical assessment in the source report included general condition, vital signs, nutritional status, cardiopulmonary and abdominal examination, extremity perfusion, neurological screening, and provocative musculoskeletal tests. The patient was conscious with a Glasgow Coma Scale score of E4M6V5, blood pressure of 120/83 mmHg, pulse of 80 beats/min, respiratory rate of 20 breaths/min, temperature of 36.5 °C, and body mass index of 23.3 kg/m². Contemporary primary-care practice emphasizes extracting diagnostic value from the history and physical examination before resorting to imaging (19). Observational comparisons also show that imaging utilization for LBP can vary between direct-access physical therapy and primary-care settings (20).

Neurological examination was reported as generally normal, including sensory and autonomic findings. Straight-leg-raise (Lasègue), Patrick, and contra-Patrick tests were negative. No laboratory tests or imaging

examinations were performed. The working diagnosis documented in the report was low back pain, with good prognosis for life, recovery, and function. Evidence from a randomized clinical trial indicates that standardized patient communication can help address low-value spinal imaging, reinforcing the importance of clinically justified investigation rather than routine imaging (21).

Table 1. Clinical and occupational profile of the illustrative primary-care patient

Domain	Source-derived information
Patient profile	54-year-old woman; senior-high-school education; occupation: beautician.
Main complaint	Low back pain radiating to the hip and leg.
Course	Longstanding since high school; worsened after first childbirth; intermittent stabbing pain.
Aggravating factors	Morning activity, prolonged sitting, prolonged walking, repetitive work, and heavy activity.
Relieving factors	Rest and medication.
Associated symptoms	Fever, nausea/vomiting, and tenderness absent; bowel and bladder function normal.
Vital signs / nutritional status	BP 120/83 mmHg; pulse 80/min; respiratory rate 20/min; temperature 36.5 °C; BMI 23.3 kg/m².
Neurological / provocative tests	Sensory and autonomic findings reported as normal; Lasègue, Patrick, and contra-Patrick tests negative.
Investigations	No laboratory or imaging examinations were performed.
Diagnosis	Low back pain.
Treatment documented	Mecobalamin 500 mcg once daily; ranitidine 150 mg twice daily; eperisone 50 mg twice daily; meloxicam 7.5 mg once daily, 2 tablets.
Prognosis	Ad vitam: good; ad sanationam: good; ad functionam: good.

Management and Patient Education

The management documented in the case was conservative and combined pharmacologic treatment with behavioral counseling. Current treatment included mecobalamin, ranitidine, eperisone, and meloxicam, all recorded by generic name. The patient was advised to take medication regularly as prescribed and to attend routine health follow-up at a primary health center or hospital. In primary care, structured exercise interventions have demonstrated benefit for chronic nonspecific LBP (22), and prospective evidence indicates that adherence to home-based exercise recommendations is associated with recovery (23).

Non-pharmacologic education focused on maintaining a healthy diet and lifestyle, improving posture during daily and occupational activities, exercising regularly, and avoiding triggers such as sudden movements, excessive mechanical loading, stress, and psychological pressure. Education integrated with yoga or physical therapy can improve pain-related self-efficacy, coping skills, and fear-avoidance beliefs in chronic LBP (24). Cognitive functional therapy has also demonstrated clinically meaningful effects in patients with chronic disabling LBP (25), while graded sensorimotor retraining represents another evidence-based rehabilitation strategy (26). A biopsychosocial primary-care intervention has been shown to be feasible for patients with chronic LBP (27), and randomized evidence supports combining supervised exercise with a biopsychosocial approach for chronic nonspecific LBP (28). In community-dwelling adults, patient education combined with motor-control exercise has also been evaluated as an active management strategy (29). These findings strengthen the rationale for individualized education, graded physical activity, ergonomic modification, and sustained self-management.

Family and Community Medicine Perspective

The source report applied a holistic framework that included personal expectations, clinical diagnosis, internal and external risks, family function, and the home environment. The patient expected symptom resolution and the ability to return to usual activities. Family support was described as favorable, with relatives encouraging healthy behavior, ergonomic posture, and regular exercise. Multidisciplinary primary-care models involving family physicians and physiotherapists support team-based management of musculoskeletal conditions (30). Community-engaged research in chronic LBP further illustrates the value of incorporating community perspectives into intervention development and implementation (31).

The household was classified as a nuclear family. The source report recorded a Family APGAR score of 10 and interpreted this as normal social function. SCREEM assessment was reported as good in the social, cultural, religious, economic, educational, and medical domains. The residential setting was described as densely populated, and the house measured approximately 5 × 7 m, with cement walls, wooden floors, available water and septic facilities, and suboptimal ventilation. Recent family-medicine research also shows that musculoskeletal complaints in first-contact care should be considered alongside treatment approaches and patient perceptions (32).

Table 2. Family demographic characteristics reported in the source document

Family member	Relationship	Sex	Age (years)	Education	Occupation / clinical status
Patient	Head of household	Female	54	Senior high school	Beautician; low back pain
Child 1	Daughter	Female	27	Senior high school	Housewife; no condition reported
Child 2	Son	Male	23	Bachelor degree	Maritime/shipping sector; no condition reported
Child 3	Daughter	Female	21	Senior high school	No occupation reported; no condition reported

Table 3. Family APGAR assessment

Domain	Source-derived information	Score
Adaptation	Satisfied with ability to return to family when facing problems	2
Partnership	Satisfied with the way the family discusses and shares problems	2
Growth	Satisfied with family acceptance and support for new activities or life direction	2
Affection	Satisfied with family expression of affection and response to emotions	2
Resolve	Satisfied with the way the family resolves problems	2
Total	Source interpretation: normal social function	10

Table 4. SCREEM and household environmental assessment

Domain	Source-derived description	Assessment
Social	Participates in neighborhood activities.	Good
Cultural	Family respects local customs in daily life.	Good
Religious	Understanding of religious teachings reported as good.	Good
Economic	Household resources considered sufficient for daily food needs.	Good
Educational	Family education and knowledge considered adequate.	Good
Medical	Family considers routine health examination a need.	Good
Housing	Approx. 5 × 7 m; living room, family room, bedrooms, bathroom and kitchen available; cement walls; wooden floor; water, septic tank and waste disposal available.	Ventilation reported as poor
Neighborhood	Densely populated residential environment.	Contextual risk noted in source

Applied Family and Environmental Context

The original report also documented family structure, interaction patterns, residential conditions, and the house layout. These elements are retained below because they illustrate how community-medicine assessment can extend beyond the immediate musculoskeletal complaint and identify contextual factors relevant to adherence, activity modification, and follow-up.

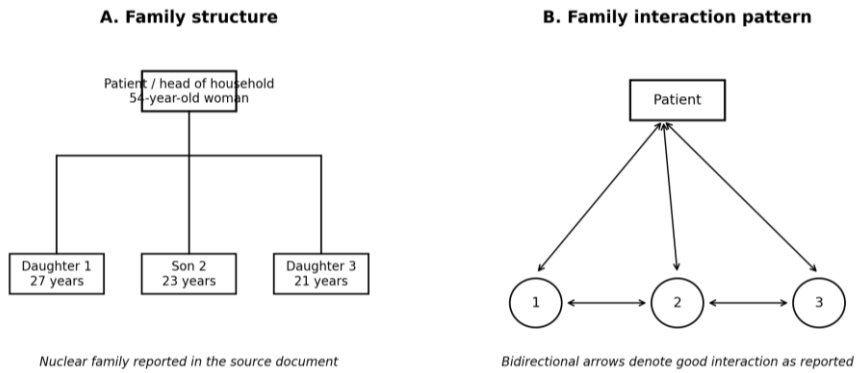

Figure 1. Family structure and interaction pattern reconstructed from the source report

Figure 2. Residential environment documented in the source report: terrace, living room, kitchen, and toilet

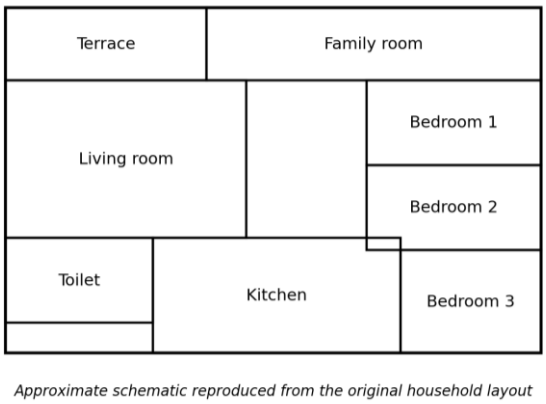

Figure 3. Approximate house-layout schematic reconstructed from the original report

Integrated Interpretation

Taken together, the source material supports a multidimensional view of LBP. Clinical assessment identified a stable patient without documented neurological or autonomic impairment, while the occupational history revealed prolonged sitting, repetitive movement, and heavy activity that could plausibly aggravate symptoms. The family assessment suggested strong support and adequate problem-solving resources, which may facilitate adherence to exercise, posture correction, and follow-up.

The case also illustrates the value of connecting patient-centered care with family and community assessment. Although no laboratory or imaging studies were obtained, the report documented symptom behavior, neurological screening, occupational exposures, treatment, prognosis, family function, and environmental conditions. This organization is particularly relevant in community medicine, where prevention and functional recovery depend not only on symptom control but also on behavior, workplace demands, and available support.

3. Conclusion

Low back pain in primary care should be understood as a clinical complaint that is closely linked to activity, work posture, repetitive movement, and the patient's broader social context. The source literature highlights sitting and occupational posture as recurring risk factors, while the illustrative case demonstrates how these factors may coexist with longstanding pain in a working adult. A practical primary-care response combines clinical and neurological assessment, conservative symptom management, medication adherence, ergonomic counseling, regular physical activity, trigger avoidance, and structured follow-up. Family and community assessment can add important information about support, household resources, and environmental conditions that may influence recovery and prevention. Accordingly, an integrated patient-centered, family-oriented, and community-aware approach is appropriate for the management and prevention of recurrent low back pain.

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