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Case Report

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Chronic Low Back Pain in a Young Female Farmer from a Remote Coastal Island in Indonesia: A Case from a Community Health Charity Event

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ABSTRACT

Background: Low back pain (LBP) is one of the most prevalent musculoskeletal conditions worldwide and a leading cause of disability, particularly in low-resource rural areas. In Indonesia's eastern islands, agricultural labor combined with limited healthcare access contributes to chronicity and diagnostic challenges. This report presents a case of chronic LBP in a young female farmer encountered during a community health charity event on Solor Island, East Flores, highlighting the interaction between occupational, psychosocial, and environmental factors.

Case Presentation: A 30-year-old woman presented with persistent dull low back pain lasting for six months, unresponsive to standard analgesic therapy. She worked daily in dryland farming involving repetitive bending, lifting, and walking on uneven terrain. Physical examination suggested mechanical LBP with paraspinal tenderness and limited flexibility but no neurological deficits. Differential diagnoses considered included gynecologic causes, urinary tract pathology, inflammatory spondyloarthropathy, and early spinal tuberculosis. Mild microcytic anemia and emotional distress were also identified as comorbidities potentially aggravating her symptoms.

Discussion: This case demonstrates the multifactorial etiology of chronic LBP in rural women, driven by heavy physical labor, ergonomic strain, poor nutrition, and psychological stress. The absence of diagnostic imaging underscores the need for contextual clinical judgment and holistic assessment.

Conclusion: Chronic LBP in female farmers represents a complex biopsychosocial condition requiring integrated, community-based interventions. Health outreach missions in remote Indonesia should combine ergonomic education, nutritional counseling, and mental health support to address both immediate symptoms and underlying social determinants of pain.

Keywords: Low Back Pain, Chronic Pain, Female Farmers, Occupational Health, Rural Medicine, Biopsychosocial Model, Indonesia

Introduction

Low back pain (LBP) remains one of the most prevalent musculoskeletal disorders worldwide and a leading cause of disability and work absenteeism. According to The Lancet

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Low Back Pain Series, nearly 540 million people are affected globally at any given time, with significant social and economic implications [1]. While LBP is often studied in urban and industrialized populations, its impact in rural and low-resource communities is frequently underrecognized, despite evidence suggesting an even higher burden due to occupational strain and limited access to healthcare [2,3].

In Indonesia, particularly in remote regions such as East Flores Regency, Nusa Tenggara Timur (NTT), the burden of LBP reflects not only biological but also environmental and socioeconomic determinants [4]. Solor Island, a small coastal island within this region, is characterized by a predominantly agricultural population engaged in dryland farming. Most residents rely on physically demanding and repetitive tasks such as bending for extended periods to plant crops, carrying heavy loads of produce or water, and walking on uneven terrain under high temperatures. These biomechanical and environmental stressors substantially increase the risk of musculoskeletal injuries, particularly to the lumbar spine [5].

The situation is further compounded by limited access to medical services, scarcity of diagnostic tools, and lack of awareness regarding ergonomics and preventive strategies. Many individuals in these communities rely on self-medication with over-the-counter analgesics or traditional remedies, often leading to the chronic progression of symptoms that might have been treatable in earlier stages [6].

Moreover, gender-specific factors contribute significantly to the epidemiology of LBP in such settings. Women, who not only work in agricultural fields but also bear the dual burden of domestic responsibilities, including carrying water, lifting children, and performing manual household tasks, are at particular risk. This combination of occupational and domestic physical stress, coupled with nutritional deficiencies and hormonal fluctuations, creates a multifactorial risk profile that predisposes women to persistent back pain [7].

The present case arose during a community health charity event conducted on Solor Island, aimed at providing medical assistance to populations with limited healthcare access. Among the patients who attended, a 30-year-old female farmer presented with chronic low back pain that had persisted for several months despite prior analgesic therapy. This case provides an opportunity to discuss the diagnostic challenges and possible comorbidities underlying chronic LBP in resource-limited environments, and to highlight the importance of adopting a biopsychosocial perspective in clinical evaluation and management.

By situating this case within the context of a rural Indonesian community, this report underscores how social determinants, occupational patterns, and healthcare access collectively influence the manifestation and management of common musculoskeletal conditions such as LBP. Understanding these contextual factors is essential for designing more inclusive public health strategies that address not only the biological causes of pain but also the broader systemic barriers that perpetuate chronic disability in underserved populations [8].

Case Presentation

During a health charity outreach held in Solor Island, a small and remote coastal community in East Flores, Nusa Tenggara Timur, Indonesia, a 30-year-old woman presented to the temporary medical clinic with the chief complaint of persistent lower back pain for approximately six months. The event was part of a community medical mission organized to provide free healthcare services to populations with minimal access to primary care facilities.

The patient was a subsistence farmer who cultivated dryland crops such as maize and cassava. Her daily work involved bending forward for long periods, carrying heavy harvests across uneven terrain, and performing repetitive manual labor without proper ergonomic techniques. In addition to her farming duties, she also managed domestic chores, including fetching water from a communal well and lifting her young child, activities that added to her cumulative musculoskeletal load.

She described the pain as dull, aching, and continuous, localized in the lower lumbar region without radiation to the legs. The pain intensified after prolonged bending or manual work and was partially relieved by rest but never completely disappeared. She denied any history of trauma, fever, significant weight loss, or night sweats. There was no prior diagnosis of spinal disorders, and she had never undergone imaging or specialist evaluation.

Over the preceding months, she had self-medicated with over-the-counter analgesics (paracetamol and non-steroidal anti-inflammatory drugs) obtained from a local shop. Although these medications provided temporary relief, the pain recurred almost daily, interfering with her ability to work and sleep. She reported increasing fatigue and occasional sadness, describing her condition as “a pain that makes me feel weaker every day.”

On physical examination, her vital signs were within normal limits. Inspection revealed mild lumbar flattening and paraspinal muscle tightness. Palpation elicited tenderness over the lower lumbar paravertebral region without evidence of spinal deformity. Flexion and extension movements of the lumbar spine provoked discomfort, suggesting a mechanical pattern. Neurological examination of the lower limbs showed no motor weakness, sensory deficit, or reflex abnormalities. Straight leg raising test was negative bilaterally.

Despite these findings suggesting mechanical low back pain, the poor response to standard analgesics prompted further clinical consideration. The differential diagnosis included:

- Gynecologic causes, such as endometriosis or pelvic inflammatory disease, given that she experienced intermittent lower abdominal discomfort unrelated to her menstrual cycle [9].
- Urinary tract pathology, including chronic infection or nephrolithiasis, as she occasionally experienced dysuria and flank soreness [10].
- Inflammatory spondyloarthropathy, due to her relatively young age and chronicity of pain, although there was no morning stiffness or alternating buttock pain [11].
- Early spinal tuberculosis (Pott’s disease), which remains endemic in parts of Indonesia, though she lacked systemic symptoms [12].

Given the resource limitations of the field clinic, advanced imaging and laboratory investigations were unavailable. However, basic screening including urinalysis and hemoglobin measurement was performed. The patient was found to have mild microcytic anemia, likely due to nutritional deficiency, which might contribute to fatigue and reduced muscle endurance. No abnormalities were found on urinalysis.

Psychological and social assessment revealed moderate emotional distress associated with chronic pain, limited social support, and economic hardship. She expressed concern that her inability to work efficiently could affect her family's livelihood. These psychosocial dimensions were considered contributory to the persistence and perceived intensity of pain.

The management plan included education on ergonomic posture, stretching and core-strengthening exercises suitable for her daily context, and nutritional counseling to improve iron intake. She was provided with a short course of oral NSAIDs, advised on regular rest intervals during work, and encouraged to seek follow-up at the nearest community health center if symptoms persisted.

Although the clinical encounter occurred within the constraints of a temporary outreach setting, the case exemplified how multidisciplinary and context-sensitive evaluation, even in a low-resource environment, can help identify the broader determinants of chronic pain and guide practical, community-based management strategies [8].

Discussion

This case illustrates the complex and multifactorial nature of chronic low back pain (LBP) in a young female agricultural worker living in a remote island setting. Although the patient presented with symptoms suggestive of mechanical LBP, her persistent pain, limited response to analgesics, and the coexistence of psychosocial and nutritional stressors emphasize the need for a broader diagnostic and therapeutic framework [13]. In rural and resource-limited contexts such as Solor Island, where diagnostic imaging, laboratory facilities, and specialist consultations are scarce, clinicians must rely on clinical reasoning, contextual understanding, and a biopsychosocial perspective to guide management [8].

Occupational and Environmental Determinants

Occupational exposure is one of the most consistent predictors of LBP worldwide. Farmers are particularly vulnerable because of repetitive bending, twisting, and lifting movements that strain lumbar muscles and ligaments. Studies among Indonesian farmers have demonstrated a strong correlation between prolonged stooping postures and the prevalence of musculoskeletal pain. The problem is exacerbated by poor ergonomic awareness, lack of mechanical aids, and long working hours under high environmental stress, such as extreme heat and uneven terrain. In this case, the patient's farming activities, combined with domestic labor responsibilities, contributed to cumulative microtrauma and sustained muscular fatigue, key features in the pathogenesis of chronic mechanical LBP [14].

Diagnostic Challenges and Differential Considerations

The diagnostic complexity of LBP in young women arises from the potential overlap between musculoskeletal, gynecologic, urinary, and inflammatory causes. Referred pain from the pelvic organs, as seen in endometriosis or pelvic inflammatory disease, can mimic lumbar discomfort. Chronic urinary tract infections and nephrolithiasis, which are not uncommon in tropical regions with limited water sanitation, may also present as flank or back pain. In addition, inflammatory spondyloarthropathies such as ankylosing spondylitis should be considered in young adults presenting with morning stiffness or pain improving with activity. Importantly, the possibility of spinal tuberculosis (Pott's disease) must not be overlooked in Indonesia, a country where tuberculosis remains endemic [9-12].

In this case, the absence of systemic features (e.g., fever, weight loss) and the mechanical nature of pain made these differentials less likely, but their consideration was crucial to avoid misdiagnosis. Limited diagnostic resources at the outreach site prevented definitive exclusion, underscoring the diagnostic uncertainty common in rural medical practice and the importance of clinical vigilance.

Comorbidities and the Biopsychosocial Model

A significant feature of this case is the coexistence of nutritional anemia and emotional distress, both of which may amplify pain perception and interfere with recovery. Iron deficiency anemia, prevalent among women in rural Indonesia, can impair muscle endurance and contribute to generalized fatigue. Chronic pain itself often induces sleep disturbances and depressive symptoms, forming a self-perpetuating cycle that exacerbates the perception of pain intensity. These findings reinforce the biopsychosocial model of pain, which emphasizes that biological, psychological, and social dimensions interact to shape the patient's experience and response to treatment. In settings with limited access to multidisciplinary care, recognizing these relationships becomes crucial for effective symptom management [8,15].

Health Inequities and Community Outreach Implications

Beyond its clinical implications, this case sheds light on the structural and health inequities affecting rural Indonesian communities. Geographic isolation, poverty, and underdeveloped health infrastructure create barriers to early diagnosis and sustained follow-up care. Many individuals rely on community health volunteers, traditional healers, or temporary charity missions for medical attention. Thus, community outreach programs play a critical role not only in treating existing conditions but also in delivering preventive education.16 In this case, patient education on ergonomic posture, workload modification, and nutrition represented realistic and sustainable interventions given the context.

Integrating ergonomic awareness and musculoskeletal health promotion into rural outreach missions could have long-term benefits in reducing the incidence and chronicity of LBP. Collaborations between healthcare professionals, local governments, and agricultural cooperatives can foster culturally appropriate educational initiatives, emphasizing prevention through posture training, rest breaks, and improved nutrition [13,14].

Broader Reflections

Ultimately, this case highlights the importance of contextualized medicine, tailoring diagnostic reasoning and therapeutic

approaches to the realities of a patient's environment. In rural Indonesia, where farming is both livelihood and identity, low back pain cannot be viewed merely as a musculoskeletal disorder but as a reflection of intertwined social, occupational, and cultural dimensions [8,16]. The health charity event provided a rare window into these lived experiences, reminding clinicians that effective care often begins with empathy, contextual understanding, and empowerment, even when sophisticated technology is unavailable.

Conclusion

This case underscores the multifactorial and context-dependent nature of chronic low back pain (LBP) in rural agricultural communities. In the setting of a young female farmer from Solor Island, Indonesia, persistent LBP emerged not as an isolated musculoskeletal disorder but as a reflection of intertwined biomechanical strain, nutritional deficiencies, psychosocial stress, and environmental hardship. These overlapping factors are characteristic of low-resource regions where women engage in physically demanding work while simultaneously bearing domestic responsibilities, resulting in chronic spinal stress and delayed recovery [8,16].

In remote areas such as East Flores, the limited access to diagnostic facilities and rehabilitative services complicates the evaluation of common conditions like LBP. Consequently, healthcare providers participating in outreach or charity missions must adopt a holistic, problem-oriented approach that integrates ergonomic education, nutritional guidance, and mental health support into primary care delivery. While advanced imaging or laboratory diagnostics may not be feasible, context-sensitive interventions, such as posture correction, load management, and targeted community education, can significantly reduce symptom burden and prevent chronic disability [13,16].

From a broader public health perspective, this case highlights the importance of integrating occupational health awareness into rural health programs, particularly those targeting women in the informal agricultural sector. Building ergonomic literacy, strengthening local health infrastructure, and promoting intersectoral collaboration between medical, agricultural, and educational stakeholders are vital to reducing the long-term impact of musculoskeletal disorders in Indonesia's rural communities [8,16].

Ultimately, the experience from this health charity mission in a remote island demonstrates that even simple, low-cost measures, grounded in empathy and contextual understanding, can bring meaningful improvement to patients' quality of life. Chronic low back pain, when viewed through a biopsychosocial and community-centered lens, serves as both a medical condition and a mirror reflecting the broader inequities in health access, gender roles, and occupational safety in developing regions [8,13,16].

References

1. GBD 2021 Low Back Pain Collaborators. Global, regional, and national burden of low back pain, 1990-2020, its attributable risk factors, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. Lancet Rheumatol. 2023 5: e316-e329.
2. Masson Palacios I, Vinueza-Fernandez I, Iñiguez-Jiminez S-O, Grijalva MJ, Bates BR. Predictors of Low Back Pain Risk Among Farmers in Rural Communities of Loja, Ecuador. Int J Environ Res Public Health. 2025. 22: 885.
3. Harscouët P, Chimpaye GN, Kazibwe H, Kabakyenga J, Callaghan OD, et al. Managing low-back pain in rural Uganda: a qualitative study exploring the perspectives and practices of frontline health workers regarding LBP management in primary care. BMC Musculoskelet Disord. 2025. 26: 168.
4. Susanto H, Dang LT, Winitchayothin S, Hidayat J, Pradana AA. Low back pain prevalence in Indonesian older adults: systematic review and meta-analysis. Pain Manag Nurs. 2025.
5. Barneo-Alcántara M, Díaz-Pérez M, Gómez-Galán M, Carreño-Ortega Á, Callejón-Ferre Á-J. Musculoskeletal disorders in agriculture: a review from Web of Science Core Collection. Agronomy. 2021. 11: 2017.
6. Komalasari DR, Jalayondeja C, Jalayondeja W, Romadon YA. Predictors of quality of life among older residents in rural and urban areas in Indonesia: an approach using the International Classification of Functioning, Disability, and Health. J Prev Med Public Health. 2025. 58: 199-207.
7. Lucas Calais-Ferreira, Daniel Pozzobon, Marina B Pinheiro, Fiona M Blyth, Juan R Ordoñana, et al. Sex differences in lifetime prevalence of low back pain: a multinational study of opposite-sex twin pairs. Eur J Pain. 2023. 27: 2028-2038.
8. Bolton D. A revitalized biopsychosocial model: core theory, research paradigms, and clinical implications. Psychol Med. 2023. 53: 7504-7511.
9. Cricco C, Daugenti A, Angilecchia D, Ceron D. Differential diagnosis of endometriosis in patient with nonspecific low back pain: a case report. J Bodyw Mov Ther. 2021. 27: 227-232.
10. Krayenhagen K, Bhatti J, Twist E. Atypical presentation of nephrolithiasis giving perception of mechanical back pain: a case report. J Contemp Chiropr. 2023. 6: 8-12.
11. Cheung JPY, Cheung PWH, Wong CKH, Chung HY, Tsang HHL. Propensity-matched comparison between chronic nonspecific low back pain and axial spondyloarthritis: impact on patient-perceived quality of life. Spine. 2023. 48: 577-589.
12. Mann TN, Davis JH, Walzl G, Beltran CG, du Toit J, et al. Candidate biomarkers to distinguish spinal tuberculosis from mechanical back pain in a tuberculosis endemic setting. Front Immunol. 2021. 12: 768040.
13. Seyed MA, Shahul Hameed Pakkir Mohamed. Low back pain: a comprehensive review on the diagnosis, treatment options, and the role of other contributing factors. Open Access Maced J Med Sci. 2021. 9: 6877.

14. Wu M, Wu P, Lu H, Han L, Liu X. Global burden of occupational ergonomic factor-induced low back pain, 1990–2021: data analysis and projections of the global burden of disease. Front Public Health. 2025. 13: 1573828.
15. Chang H, Xu J, Li X, Zhao R, Wang M, et al. Association between anemia and lumbar disc degeneration in patients with low back pain: an observational retrospective study. Eur Spine J. 2023. 32: 2059-2068.
16. Anggraini N. Healthcare access and utilization in rural communities of Indonesia. J Community Health Provis. 2023. 3:14-19.

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