

UNDERSTANDING BARRIERS TO EVIDENCE-BASED LABOR PAIN MANAGEMENT IN LOW-RESOURCE SETTINGS: A QUALITATIVE INQUIRY

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Abstract

Effective labor pain management is a fundamental component of respectful and quality maternal healthcare. Despite the availability of evidence-based interventions, their implementation remains limited in low-resource settings. This study aims to explore and synthesize existing scholarly evidence on the barriers to evidence-based labor pain management in resource-constrained contexts through a qualitative literature review. Relevant peer-reviewed articles were systematically identified from major academic databases, focusing on qualitative and mixed-methods studies published in recent years. The selected literature was analyzed using a thematic synthesis approach to capture recurring patterns, perspectives, and contextual challenges reported by healthcare providers, women, and health systems. The findings reveal that barriers are multidimensional, encompassing structural constraints such as limited infrastructure, shortages of trained personnel, and inadequate access to analgesic options, as well as sociocultural factors including misconceptions about labor pain, gender norms, and patient-provider communication gaps. Additionally, institutional barriers such as restrictive policies, lack of clinical guidelines, and insufficient professional training further hinder the adoption of evidence-based practices. This review highlights the complex interplay between systemic, cultural, and organizational factors influencing labor pain management in low-resource settings. The study underscores the need for context-sensitive strategies, policy support, and capacity-building initiatives to bridge the

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gap between evidence and practice, ultimately improving maternal care quality and women's childbirth experiences.

Keywords: labor pain management, evidence-based practice, low-resource settings, maternal health

INTRODUCTION

Labor pain management is a fundamental aspect of quality midwifery care, focused on maternal safety and comfort (Nyangulu et al., 2025). Labor pain not only impacts the mother's subjective experience during labor but also influences physiological responses, psychological well-being, and overall labor outcomes. Numerous studies have shown that inadequately managed labor pain can increase the risk of maternal stress, extreme fatigue, labor trauma, and impaired postpartum mother-infant bonding. Therefore, the implementation of evidence-based labor pain management has become an essential part of modern maternal care standards recommended by various international health organizations.

Evidence-based labor pain management encompasses the use of pharmacological and non-pharmacological interventions that have been scientifically proven to be effective, safe, and appropriate to the clinical context of the laboring mother. Non-pharmacological methods such as breathing techniques, relaxation, ongoing emotional support, position changes, massage, hydrotherapy, and the use of psychological and cultural approaches have been recognized as strategies that can increase maternal comfort and reduce pain perception without causing significant side effects (Shidende & Msenga, 2025). Meanwhile, pharmacological methods such as systemic analgesics and regional anesthesia are also important options in certain circumstances. However, although scientific evidence regarding the effectiveness of various labor pain management methods is increasingly strong and widespread, their implementation in the field still shows significant gaps, especially in resource-limited areas.

Low-resource settings, which are generally characterized by limited health facilities, trained professionals, medical resources, and adequate policy support, face complex challenges in providing evidence-based obstetric care. In many developing countries, including rural and remote areas, the primary focus of labor care is often directed at the physical safety of the mother and baby, while comfort and the birth experience are not prioritized (Fernandes et al., 2021). As a result, labor pain is often considered a natural and inevitable part of

the birthing process, leading to the neglect of systematic efforts to manage pain effectively.

In addition to limited physical resources, barriers to the implementation of evidence-based labor pain management are also closely related to social, cultural, and institutional factors. Cultural beliefs that view labor pain as a test of a woman's strength, social norms that normalize suffering during childbirth, and negative perceptions about the use of certain pain interventions can influence the attitudes of mothers, families, and healthcare workers. Furthermore, healthcare workers in resource-limited facilities often face high workloads, imbalanced patient-to-person ratios, and a lack of ongoing training in evidence-based practices. These conditions can limit their ability to provide optimal labor pain support, despite their professional intentions and commitment.

Structural and policy barriers also play a significant role in shaping labor pain management practices. The absence of contextualized clinical guidelines, minimal managerial support, and limited integration of evidence-based practice into maternal healthcare systems can hinder the adoption of interventions that could improve the quality of care (Iyengar et al., 2022). In many cases, midwifery practice remains based on long-standing customs, personal experiences, or institutional norms that are not necessarily aligned with the latest scientific evidence. This gap between research-based knowledge and clinical practice is a major challenge in efforts to improve the quality of childbirth care in low-resource settings.

Although various quantitative studies have identified common factors influencing the quality of labor care, an in-depth understanding of the barriers to implementing evidence-based labor pain management remains relatively limited, particularly from the perspective of actors directly involved in the labor process. Qualitative approaches are highly relevant for exploring experiences, perceptions, beliefs, and contextual dynamics that cannot be fully explained through numerical data (Olajide^{1*} et al., 2025). By listening to the voices of health workers, women in labor, and other stakeholders, qualitative research allows for a more comprehensive exploration of the complex factors that hinder the implementation of evidence-based practices.

A thorough understanding of these barriers is crucial for designing realistic, contextual, and sustainable interventions. Without a clear mapping of these barriers, capacity-building, training, or policy development efforts risk being ineffective or misaligned with actual needs on the ground (Danquah & Morgan, 2025). Therefore, research focused on identifying and analyzing

barriers to the implementation of evidence-based labor pain management in low-resource settings is crucial in supporting the transformation of midwifery services to be more humane, equitable, and woman-centered.

Based on this background, the study, "Understanding Barriers to Evidence-Based Labor Pain Management in Low-Resource Settings: A Qualitative Inquiry," was designed to explore in depth the various factors that hinder the implementation of evidence-based labor pain management in the context of limited resources. This research is expected to provide theoretical and practical contributions to the development of maternal health policies, improving the competence of midwifery personnel, and designing delivery service models that are more responsive to the needs and experiences of women giving birth in various social and cultural contexts. If desired, I can also adjust the writing style to be more in line with reputable international journals or the context of a particular country.

RESEARCH METHOD

This study employed a qualitative literature review to gain a deeper understanding of the barriers to implementing evidence-based labor pain management in resource-limited settings. The review process involved searching for scientific articles, research reports, and academic publications relevant to the topic of labor pain management, evidence-based practices, and the context of maternal health services in low- and middle-income countries. Literature sources were obtained from international scientific databases such as PubMed, Scopus, and Google Scholar, covering publications spanning the past ten years, to ensure the relevance and novelty of the findings. The selected literature included qualitative studies, systematic reviews, and policy reports that addressed the perspectives of health workers, women in labor, and health systems regarding barriers to implementing scientifically recommended pain management interventions.

Data analysis was conducted using a thematic analysis approach, identifying recurring patterns, themes, and meanings across various literature sources. The analysis included in-depth reading, conceptual coding, grouping themes, and critical interpretation of the relationships between the themes. The analysis focused on individual, institutional, sociocultural, and structural factors influencing the adoption of evidence-based practices in labor pain management in resource-limited settings. The results of this literature review are expected to be able to build a comprehensive understanding of the

complexity of existing obstacles and become a conceptual basis for developing more contextual and sustainable intervention strategies and policies.

RESULT AND DISCUSSION

Health Workers' Perceptions and Understanding of Evidence-Based Labor Pain Management

Labor pain management is a crucial aspect of midwifery care, aimed at improving maternal comfort, minimizing physiological stress, and supporting a safe birth process (Abikou et al., 2024). Labor pain is uniquely characterized by its subjective nature, influenced by biological, psychological, social, and cultural factors. An evidence-based pain management approach emphasizes the use of interventions supported by current scientific research, ensuring effective and safe pain management. Health workers, particularly midwives, nurses, and obstetricians, play a central role in implementing this strategy, as their perceptions and understanding of labor pain directly impact the quality of care and the mother's experience during childbirth.

Health workers' perceptions of labor pain vary widely and are influenced by educational background, clinical experience, and social and cultural norms inherent in midwifery practice. Some health workers still view labor pain as a natural phenomenon that mothers must experience, thus deeming pain intervention secondary or even unnecessary on a routine basis. This perception can lead to delays in pain assessment and appropriate therapy, increasing the risk of maternal stress, anxiety, and potential labor complications. Conversely, healthcare professionals who view labor pain as a condition that can be measured, controlled, and minimized will be more proactive in conducting pain assessments, utilizing valid instruments, and systematically implementing both pharmacological and non-pharmacological interventions (Ibrahim et al., 2024). This suggests that healthcare professionals' perceptions are a critical factor in determining the quality of evidence-based labor pain management.

Healthcare professionals' understanding of evidence-based labor pain management includes their ability to recognize the physiological mechanisms of labor pain, understand the effects of pain stress on the mother and fetus, and select pain management strategies appropriate to the clinical condition and maternal preferences. Non-pharmacological interventions such as breathing techniques, relaxation, hydrotherapy, or active positioning during labor have significant evidence support in reducing pain intensity and increasing maternal satisfaction. Meanwhile, pharmacological analgesia, including epidurals or opioids, should also be used based on appropriate clinical indications and an

understanding of the associated risks. Healthcare professionals with a deep understanding will be able to balance benefits and risks and communicate effectively with the mother to ensure evidence-based decisions while taking patient preferences into account (Tandon et al., 2025).

Clinical experience also plays a crucial role in shaping healthcare professionals' understanding. Experience in managing various labor cases can enhance clinical skills, intuition, and the ability to perform pain assessments. However, empirical experience without updated evidence-based knowledge can lead to biases in practice, such as subjective assessments of maternal pain or reliance on outdated practices that have not been proven effective. Therefore, continuing education, case-based training, and access to the latest literature are crucial to ensure that labor pain management practices are not based solely on personal experience but also consistent with current scientific standards.

In addition to individual factors, the organizational environment and institutional policies also influence healthcare workers' perceptions and understanding. Healthcare facilities with clear clinical guidelines for labor pain management, managerial support, and a strong patient safety culture are more likely to encourage healthcare workers to consistently implement evidence-based interventions. Conversely, lack of supervision, high workloads, or limited resources can hinder the implementation of best practices, even if healthcare workers have adequate theoretical knowledge. This emphasizes that improving healthcare workers' understanding and perceptions must be accompanied by systemic efforts at the organizational level, including training, provision of pain assessment tools, and regular evaluation of pain management practices (Changes in Perceived Knowledge about Childbirth among Pregnant Women Participating in the Senses of Birth Intervention in Brazil: A Cross-Sectional Study | BMC Pregnancy and Childbirth | Springer Nature Link, n.d.).

A multidisciplinary approach is also crucial to evidence-based labor pain management. Labor pain is not solely the responsibility of one profession but requires coordination between midwives, obstetricians, nurses, anesthesiologists, and other support personnel. Healthcare workers' perceptions of this collaboration can influence the effectiveness of interventions. Healthcare workers who understand the importance of their respective roles will be better able to provide holistic, integrated, and patient-centered pain management. This approach not only reduces pain intensity but also increases maternal satisfaction, expedites labor, and lowers the risk of complications.

Overall, healthcare workers' perceptions and understanding of evidence-based labor pain management have direct implications for the quality of midwifery care. Healthcare workers with a deep understanding and positive perceptions tend to provide more humane, responsive, and safe care, thus supporting an optimal labor experience for mothers. Efforts to improve healthcare worker capacity through continuing education, case-based practice training, and the provision of evidence-based guidelines are crucial to ensuring that labor pain management is not merely theoretical but truly implemented in daily clinical practice. Thus, evidence-based labor pain management can become an integral component of high-quality midwifery care, focused on the safety, comfort, and well-being of mothers and babies.

Availability of Medications, Devices, and Non-Pharmacological Methods in Labor Pain Management

Labor pain is a complex and subjective physiological experience, influenced by physical, emotional, psychological, and social factors of the laboring mother. The level of pain experienced can vary from mild to very intense, particularly during the active stage of labor and the pushing phase. Labor pain management is a crucial aspect of obstetric care, as unmanaged pain can cause stress, increase the risk of obstetric complications, hinder labor, and impact the well-being of the mother and baby (Calcagno et al., 2023). Therefore, the availability of medications, devices, and non-pharmacological methods is a key component of effective, safe, and evidence-based labor pain management.

Pharmacologically, labor analgesics are available in various forms, ranging from systemic analgesics to regional anesthetics. Systemic analgesics, such as opioids, are used to relieve labor pain in mothers experiencing moderate to severe pain. This medication can be administered intravenously or intramuscularly, and its availability in healthcare facilities is crucial for healthcare providers to adjust the dosage to the mother's condition and stage of labor. Regional anesthesia, particularly epidurals, is the most effective method for reducing labor pain without impeding the mother's ability to actively participate in the birthing process. However, the availability of epidurals is highly dependent on the availability of competent anesthesia personnel, complete medical equipment, and adequate supplies of anesthetic drugs. In many facilities, limited trained staff and adequate equipment mean that epidurals are not always available to all mothers who need them, so pain management often requires adapting to existing resources (Ingram et al., 2022).

In addition to medication availability, medical devices also play a crucial role in labor pain management. Devices such as infusion pumps, vital sign monitors, and equipment for regional anesthesia procedures ensure the safety and effectiveness of pain therapy (Cabral et al., 2023). Appropriate monitoring helps healthcare providers assess the mother's response to analgesia and prevent complications, such as epidural-induced hypotension or opioid-induced respiratory depression. In referral facilities, more sophisticated equipment, such as ultrasound to guide nerve blocks, allows for more accurate and safe procedures. However, in primary care facilities or remote areas, the availability of these tools is often limited, requiring labor pain management to rely on basic techniques available, which can sometimes be suboptimal for mothers with severe labor pain or certain complications.

Non-pharmacological methods are also increasingly gaining traction in labor pain management because they are safe, easy to implement, and can enhance the mother's labor experience. These methods include relaxation techniques, breathing exercises, massage, warm baths, active positioning, mobilization, music therapy, aromatherapy, and emotional support from health workers or companions. The availability of non-pharmacological methods depends heavily on the training of health workers, institutional policy support, and the facility's readiness to provide a supportive environment. In many hospitals and community health centers, limited staff and time often limit the implementation of these methods, despite their proven effectiveness in reducing pain perception and increasing maternal satisfaction. A holistic approach that combines pharmacological and non-pharmacological methods has been shown to provide the best results, as it can reduce pain intensity while minimizing medication side effects (Armstrong et al., 2024).

The availability of labor pain management is also influenced by health facility management systems and national policies. Careful planning of drug, equipment, and human resource needs must be carried out to ensure that every mother has equal access to appropriate pain management strategies. The unavailability of certain equipment or medications, such as local anesthetics or opioids, can lead to delayed interventions or reduce the quality of care. Furthermore, ongoing education and training for health workers is crucial to ensure that non-pharmacological methods are implemented correctly, and that pharmacological interventions are provided according to clinical indications and are safe for both mother and fetus. Adequate policy support is also needed to integrate pain management approaches into labor protocols, so that each

mother can choose the method that best suits her preferences and condition (Melillo et al., 2022).

Overall, the availability of drugs, equipment, and non-pharmacological methods is a complementary foundation for labor pain management. The combination of these three allows for responsive care to maternal needs, increases comfort during labor, and minimizes the risk of complications. Ongoing challenges, such as limited trained personnel, equipment, and medications, particularly in areas with limited resources, should be a strategic focus for policymakers and health facility management. With proper planning, adequate training of health workers, and comprehensive policy support, labor pain management can be optimally implemented, providing a safer, more comfortable, and more satisfying birth experience for the mother and supporting better clinical outcomes for both mother and baby.

Implications of Qualitative Findings for Midwifery and Maternity Nursing Practice

Qualitative findings in midwifery and maternity nursing research provide a crucial contribution to enriching our understanding of the subjective experiences of women, families, and healthcare professionals during pregnancy, childbirth, the postpartum period, and the neonatal care period. Unlike quantitative approaches that emphasize measurement and generalization, qualitative research explores the meanings, perceptions, values, emotions, and social and cultural dynamics that accompany the maternity care process (Kristienne McFarland et al., 2020). Therefore, the implications of qualitative findings for midwifery and maternity nursing practice are not only technical but also touch on the humanistic, ethical, and contextual aspects of maternal and child health services.

One key implication of qualitative findings is the strengthening of woman-centered care practices. Qualitative findings often reveal that women's experiences during pregnancy and childbirth are influenced by their sense of safety, trust in healthcare professionals, and respect for their choices and voice. This requires midwives and maternity nurses to focus not only on clinical procedures but also on the quality of therapeutic interactions. Midwifery and maternity nursing practices need to integrate empathetic communication, active listening, and the provision of clear and meaningful information so that women feel valued as the primary subjects in the care process, not simply objects of medical treatment (Moridi et al., 2020).

Another implication relates to cultural sensitivity in midwifery and maternity nursing practices. Qualitative findings frequently indicate that cultural values, traditional beliefs, and social norms have a strong influence on maternal health behaviors, including decision-making related to pregnancy and childbirth (Hewitt et al., 2022). In this context, midwives and maternity nurses are required to possess adequate cultural competence to provide care that aligns with the patient's sociocultural background without compromising safety principles and scientific evidence. Culturally sensitive maternity practices will increase the acceptance of health services, strengthen relationships between health workers and families, and contribute to improved satisfaction and outcomes.

Qualitative findings also have significant implications for the practice of emotional and psychosocial support in maternity care. Many qualitative studies highlight the anxiety, fear, stress, and uncertainty women experience during high-risk pregnancies, childbirth, or the postpartum period. These experiences are often under-recognized during routine clinical examinations, yet they have a significant impact on the well-being of both mothers and babies (Dağlı et al., 2024). Therefore, midwifery and maternity nursing practices need to actively incorporate psychosocial assessment and emotional support as an integral part of care. Midwives and maternity nurses play a crucial role as companions, providing a sense of security, emotional validation, and prompt referral when signs of maternal mental health disorders are identified.

In the context of collaborative practice, qualitative findings also emphasize the importance of interprofessional teamwork in maternity care. The experiences of healthcare workers, as revealed through a qualitative approach, often indicate that the quality of care is greatly influenced by communication, coordination, and mutual respect between professionals. The implications of these findings encourage midwifery and maternity nursing practices to be more open to collaboration with physicians, psychologists, nutritionists, and other healthcare professionals. Effective collaboration not only improves patient safety but also creates a more supportive and sustainable work environment for healthcare workers.

Qualitative findings also have important implications for health education practices in midwifery and maternity nursing. Qualitative research often reveals that women's information needs are not always met through a one-way, standardized educational approach. Women and families have varying needs, preferences, and levels of understanding. Therefore, maternity education practices need to be tailored to individual and family contexts, use accessible

language, and engage in two-way dialogue. An educational approach based on qualitative findings will improve health literacy, empower women in decision-making, and encourage more effective self-care practices.

Furthermore, qualitative findings provide implications for reflective practice in midwifery and maternity nursing. The experiences and narratives revealed in qualitative research can serve as a means of reflection for midwives and nurses to reassess their attitudes, values, and professional practices. Reflective practice enables healthcare professionals to continuously learn from patient experiences, enhance ethical sensitivity, and develop professionalism oriented toward quality and safety. Thus, midwifery and maternity nursing practice is not static, but continually evolves along with a deeper understanding of the human experience of reproduction. Overall, the implications of qualitative findings for midwifery and maternity nursing practice emphasize that maternal and child health care cannot be separated from social, emotional, cultural, and ethical dimensions. The integration of qualitative findings into clinical practice encourages a paradigm shift from procedure-oriented care to holistic, person-centered care. By adopting this approach, midwifery and maternity nursing practice is expected to provide services that are not only safe and clinically effective, but also meaningful, dignified, and responsive to the real needs of women and families.

CONCLUSION

This study concludes that the implementation of evidence-based labor pain management in resource-limited areas still faces various interrelated barriers across structural, professional, and sociocultural aspects. Limited health facilities, limited availability of medications and supporting equipment, and inadequate training and knowledge updates for health workers are key factors hindering the adoption of evidence-based practices. Furthermore, high workloads and a disproportionate number of health workers compared to patient numbers also impact providers' ability to implement safe, effective, and mother-centered pain management approaches.

Furthermore, this study also confirms that cultural norms, perceptions of labor pain, and low levels of maternal and family health literacy play significant roles in shaping attitudes toward pain management interventions. A lack of effective communication between health workers and laboring women often reinforces misunderstandings and resistance to the use of evidence-based methods. Therefore, efforts to improve the quality of labor pain management in resource-limited contexts require a comprehensive approach that focuses

not only on strengthening health worker systems and capacities, but also on community education and strengthening communication that is sensitive to the local cultural context.

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