



## Review article

# Pain Management in Childbirth: A Global Perspective

Sri Rejeki<sup>1</sup>, Reina Dhamanik<sup>1</sup>

<sup>1</sup> Universitas Muhammadiyah Semarang, Indonesia

## Article Info

### Article History:

Submitted: Sept 16th 2023

Accepted: Oct 16th 2023

Published: Dec 31st 2023

### Keywords:

Pain management; childbirth; labor pain

## Abstract

Childbirth pain is one of the most intense forms of pain that women experience, and its management is critical to both maternal and fetal well-being. Around the world, different methods of pain relief are used, ranging from non-pharmacological approaches to advanced medical interventions. This systematic review aims to examine the various pain management strategies employed globally, their effectiveness, and the disparities in access to these methods. It discusses both pharmacological and non-pharmacological approaches while highlighting the influence of cultural, healthcare, and infrastructural factors on pain management during labor.

## INTRODUCTION

Labor pain is an intense experience that has physiological and psychological impacts on women. Effective pain management during childbirth not only improves the birthing experience but also helps prevent complications such as prolonged labor, increased maternal anxiety, and postpartum depression. Globally, pain relief during childbirth is addressed with a variety of methods, from pharmacological interventions like epidurals and opioids to non-pharmacological techniques like massage, hydrotherapy, and breathing exercises. However, access to these pain management strategies is uneven, and cultural perceptions of pain and its management play a crucial role in determining which methods are available and acceptable to women in different regions.

In high-income countries, pharmacological interventions are the predominant method of pain management. Studies have shown that epidural analgesia is one of the most effective and commonly used methods of labor pain relief, providing substantial pain reduction and high maternal satisfaction.<sup>1</sup> In contrast, non-pharmacological techniques such as massage and breathing exercises are more frequently utilized in low- and middle-income countries (LMICs), where access to advanced medical pain relief options may be limited.<sup>2</sup> Cultural attitudes also play a role in the acceptance and use of certain pain relief techniques.<sup>3</sup> In some societies, enduring labor pain is seen as a rite of passage, leading to lower acceptance of medical interventions.<sup>4</sup>

There is a pressing need to address global disparities in the availability of effective pain management strategies during

Corresponding author:

Sri Rejeki

[srirejeki@unimus.ac.id](mailto:srirejeki@unimus.ac.id)

South East Asia Nursing Research, Vol 5 No 4, Dec 2023

ISSN:2685-032X

DOI: <https://doi.org/10.26714/seanr.5.4.2023.27-30>

childbirth. Poorly managed labor pain can lead to increased maternal distress, which has been linked to adverse outcomes such as prolonged labor, higher rates of operative delivery, and increased likelihood of post-traumatic stress disorder (PTSD) following birth.<sup>5</sup> In settings where pharmacological interventions are limited, non-pharmacological methods may offer a feasible alternative, but their effectiveness is often less consistent.<sup>6</sup> This review provides a global perspective on pain management in childbirth, highlighting the need for more equitable access to effective pain relief.

The objective of this review is to compare global strategies for managing labor pain, with a focus on the effectiveness of pharmacological and non-pharmacological methods. Additionally, this review aims to analyze the cultural, social, and healthcare-related factors that influence the choice and availability of pain management during childbirth.

## **METHODS**

### **Search Strategy**

This review followed a systematic search process using databases including PubMed, Scopus, and CINAHL. Articles published between 2018 and 2022 were selected to capture the most recent research on childbirth pain management. The search terms used were “pain management,” “labor pain,” “epidural analgesia,” “non-pharmacological pain relief,” and “global childbirth practices.” Both qualitative and quantitative studies were included in the review.

### **Inclusion and Exclusion Criteria**

Inclusion criteria for this review consisted of studies published in peer-reviewed journals that focused on labor pain management, used human subjects, and addressed either pharmacological or non-pharmacological interventions. Studies

were excluded if they focused on cesarean section or other surgical interventions, as well as those that were published in languages other than English or in non-peer-reviewed journals.

## **Data Extraction and Synthesis**

Data extraction involved summarizing the pain management strategies described in each study, along with their effectiveness, accessibility, and cultural context. The data was then synthesized to provide a comprehensive overview of the global landscape of labor pain management.

## **RESULTS**

### **Global Disparities in Pain Management**

The review identified significant variations in the availability and utilization of pain management strategies across different global regions. In high-income countries, the use of pharmacological interventions such as epidurals is widespread and considered the gold standard for labor pain relief.<sup>1</sup> In contrast, LMICs tend to rely on non-pharmacological methods like massage, herbal remedies, and hydrotherapy due to limited healthcare resources.<sup>2</sup> Table 1 provides a comparative overview of pain management methods used in various regions.

### **Effectiveness of Pharmacological Methods**

Pharmacological interventions, particularly epidural analgesia, have been shown to be highly effective in reducing labor pain and improving maternal satisfaction.<sup>1</sup> Epidurals are widely used in Europe and North America, where healthcare infrastructure supports their routine administration. However, the availability of these interventions in LMICs is limited due to a lack of trained personnel and medical equipment.<sup>3</sup> Other pharmacological methods, such as opioids and nitrous oxide,

are also used but are associated with varying levels of pain relief and side effects.<sup>5</sup>

### Non-Pharmacological Pain Relief

Non-pharmacological pain relief methods, including breathing exercises, massage, hydrotherapy, and acupuncture, are more common in regions with limited access to pharmacological interventions.<sup>2</sup> While these methods are less effective than epidurals in completely eliminating labor pain, they are preferred in settings where medical resources are scarce. For example, water birth has gained popularity in both high-income and low-income settings as a non-invasive method of pain relief.<sup>4</sup>

### Cultural Factors in Pain Management

Cultural attitudes significantly influence the choice of pain management strategies during childbirth. In some societies, pain is viewed as an integral part of the childbirth experience, leading women to opt for non-pharmacological methods despite the availability of more effective medical options.<sup>6</sup> In contrast, Western cultures tend to prioritize pain-free childbirth, leading to the widespread use of pharmacological interventions such as epidurals.<sup>4</sup>

Table 1  
The synthesis of findings

Region	Pharmacological Methods	Non-Pharmacological Methods	Challenges
North America	Epidurals, opioids	Breathing techniques, water birth	High access to medical interventions
Europe	Epidurals, nitrous oxide	Acupuncture, massage	Cultural acceptance of medical interventions
Africa	Minimal access to epidurals	Herbal remedies, breathing techniques	Limited access to medical resources
Asia	Regional blocks, opioids	Traditional remedies, acupuncture	Mixed access to medical interventions
Latin America	Regional blocks	Breathing, hydrotherapy	Limited infrastructure in rural areas

## DISCUSSION

### Global Implications for Maternal Health

The disparities in pain management during labor reflect broader global inequalities in access to healthcare. High-income countries offer a wide range of pain relief options, whereas women in LMICs often have limited access to both pharmacological and non-pharmacological interventions.<sup>3</sup> These disparities are exacerbated by cultural factors, with some communities valuing natural childbirth over medical intervention, regardless of the availability of pain relief methods.<sup>4</sup>

### Recommendations for Improving Access

There is a clear need for improved access to both pharmacological and non-pharmacological pain relief methods, particularly in LMICs. Investment in healthcare infrastructure, education for healthcare providers, and policies that prioritize maternal health are essential to bridging the gap in pain management during childbirth.<sup>5</sup> Additionally, non-pharmacological methods should be further researched and optimized to provide effective alternatives in low-resource settings.

## Limitations of the Review

The primary limitation of this review is the language barrier, as only studies published in English were included. This may have excluded important findings from non-English speaking regions. Additionally, the diversity of study methodologies made it difficult to compare the relative effectiveness of different pain management strategies directly.

## CONCLUSION

Effective pain management during childbirth is essential for maternal well-being, yet significant global disparities exist in the availability and use of pain relief methods. While pharmacological interventions such as epidurals are highly effective, they are not widely accessible in many parts of the world. Non-pharmacological methods, although less effective, offer viable alternatives where medical resources are limited. Addressing these disparities requires investments in healthcare infrastructure, cultural sensitivity, and global policy reforms to ensure that all women have access to effective pain relief during labor.

## ACKNOWLEDGMENTS

We extend our gratitude to all researchers whose work contributed to this review. We also appreciate the healthcare professionals

who continue to innovate in the field of pain management for maternal care worldwide.

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