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Review article

Knowledge, attitude, and practice toward pharmacological and nonpharmacological methods for labor pain management among midwives

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ABSTRACT

This review focuses on labor pain management during childbirth, encompassing non-pharmacological and pharmaceutical methods. A thorough literature search was conducted across databases like Scopus, PubMed, Google Scholar, and the Cochrane Database of Systematic Reviews. The review, comprising eleven studies, explores topics such as the theoretical framework of labor pain management, midwives' knowledge, attitudes, and practices, pharmacologic and non-pharmacologic methods, factors influencing midwives' strategies, and identified gaps and challenges. The conclusion highlights existing literature gaps and emphasizes the potential for future research to enhance midwifery practices, informed decision making, and obstetric outcomes.

Main focuce of this review is Labor Pain Management during Childbirth The review covers both nonpharmacological and pharmaceutical methods Search was conducted using Scopus, PubMed, Google Scholar, and the Cochrane Database of Systematic Reviews

then 11 studeis included



Conclusion: Highlighting Existing Literature Gaps and Emphasizing the Potential for Future Research

Finding highligted 5 main topics;

- 1. Theoretical Framework.
- 2. Midwives' Knowledge, Attitudes, and Practices
- 3. Pharmacologic and Non-Pharmacologic Methods.
- 4. Factors Influencing Midwives' Strategies.
- 5. Identified Gaps and Challenges

Keywords: Labor pain management, Non-pharmacological methods, Midwives' knowledge & practices, Childbirth pain management, Labor analgesia.

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INTRODUCTION

The labor process is a natural occurrence, and the pain experienced by women during childbirth is a complex and individualized phenomenon; encompassing sensory, perceptual, and emotional aspects ^[1]. Implementation of comprehensive pain relief strategies is vital to supporting women through the labor process to ensure a more comfortable and satisfying birthing journey^[2]. A variety of pharmacological and non-pharmacological approaches are used to treat labor pain ^[3]. Pharmacological pain management techniques include neuraxial anesthesia, intravenous or intramuscular opioids, inhalation analgesia, regional analgesia, and gas [4, 5]. Nonpharmacological methods increase satisfaction while lowering costs and providing safer pharmacological substitutes. According to recent statistics, non-pharmacological techniques have significantly reduced labor pain and assisted women in having more satisfying birth experiences ^[6]. For example, transcutaneous electrical nerve stimulation can be used in the early stages of labour when labouring in water, along with deep breathing exercises, massage, calming voices, relaxation techniques, guided imagery, and therapeutic dialogue ^[5,7].

On the other hand, unattended labor pain leads to various negative effects on mothers, affecting their physical and emotional well-being, with potential consequences for both mother and child. Inadequate pain management can also impact placental perfusion, risking hypoxia, late decelerations, and fetal distress ^[8]. Effective pain management strategies are crucial for safer and more comfortable childbirth experiences ^[3].

Globally, effective management of pain is essential to the care of women during childbirth ^[9]. The provision of obstetric services to women around the world is significantly supported by midwives [10]. Therefore, the present paper reviews the literature about midwives' knowledge, attitudes, and practice toward pharmacological and nonpharmacological methods for labor pain management.

METHODS

An intensive search of the available literature related to this study was undertaken through databases that publish research findings and synthesis, including Scopus, PubMed, Google Scholar, and the Cochrane Database of Systematic Reviews, using the following MeSH (Medical Subject Headings) terms: The Boolean operators (AND, OR) were used separately between these keywords to retrieve any study that would potentially meet the inclusion criteria. Eleven studies achieved the following criteria: (1) Address pharmacological or non-pharmacological pain management techniques for labor; (2) Report on the knowledge, practice, or attitudes of midwives about labor pain management. (3) Publications published in English; (4) publications between January 2018 and August 2023. There was no restriction on the study design.

The keywords and strings used to retrieve literature were labor pain management" OR "pharmacological pain management" OR "nonpharmacological methods" AND "midwives' knowledge" AND "obstetric pain interventions" AND "midwives' practices" AND "childbirth pain management" AND "labor analgesia" AND "Midwives' attitudes" AND "Maternal-neonatal outcomes".

Theoretical Framework of Labor Pain Management

The management of pain during labor depends on complex theoretical models, such as the Gate Control Theory and the Neuro matrix Theory, which illustrate the integration of individual, physiological, and psychological factors in pain perception. As advocates and educators, midwives play a pivotal role in utilizing comprehensive strategies ^[11]. A study highlighted that the Biopsychosocial Model emphasizes psychosocial impacts, which is in line with midwives' complete care. This understanding enables midwives to tailor pain management strategies, which improves maternal-neonatal outcomes and supports the summary of this research ^[12]. Due to the complex nature of labor, a thorough understanding of its constituent parts, cervical dilatation, uterine contractions, and signal transmission, is essential for the successful management of post-labor pain ^[11].

An in-depth comprehension of the factors influencing pain perception is essential for effective labor pain management. The experiences of women are influenced by anatomical, physiological, psychological, social, and cultural aspects ^[13, 14]. Interestingly, differences in early labor pain perception are highlighted between nulliparous and multiparous women ^[13, 15]. The lack of formal guidelines for pain management has an impact on the health of mothers and leads to non-institutional births. Labor pain presents issues that can impact the health of the mother and the newborn if left untreated ^[14]. Inadequate pain management raises the possibility of oxygen deficiency-induced fetal discomfort by interfering with placental perfusion ^[13]. Proficiency in managing pain is vital to guarantee safe childbirth experiences ^[14]. Healthcare providers need to understand the complex, unique nature of labor pain, which is influenced by social, psychological, and cultural factors ^[12]. The aims and coping strategies used to lessen the pain of childbirth are shaped by sociocultural perspectives in this regard ^[16]., a thorough investigation of labor pain management becomes essential, combining many aspects to provide efficient care.

The search found (330 titles and abstracts. Records were excluded based on Duplicate records removed (n = 132) and automated excluded due to exact match (n = 12), and (31) were excluded for reasons related to inappropriateness of the selected timeframe, language, or irrelevant records were excluded based on title and abstract screening (n=114), Full-text articles excluded, with reasons (n = 30). Eleven studies were included in the review. As shown in Figure 1.



RESULTS

Eleven studies were included in the review, addressing five major issues: theoretical framework of labor pain management, midwives' knowledge, attitudes, and practices, pharmacological and non-pharmacological methods for managing labor pain, factors influencing midwives' strategies, and gaps, challenges, and implications for policy and practice. Table 1 gives insights into the main results and characteristics of the included Studies.

Table 1: The Main Characteristics and Results of the Included Studies

| Author(s)Year | Aim(s) | Country and Setti | Population | Design/ Method | Type of pain management | Findings/Recommendations |
|---|--|--|--|--|---|--|
| Yinchu Hu., et al. (2021) | To compare and rank t efficacy and safety of non-pharmacological interventions in the management of labor pain | Various countries a healthcare settings (e.g., the United States, China, etc.). | Pregnant women with specific characteristics (Primi /multi) | A systematic review and Bayesian network meta- analysis based on PRISMA- NMA. Method: Seven databases were searched from database inception– March 2020. 43 studies with 9 interventions were analyzed. | The nine non- pharmacological interventions used in the study are: Acupressure Aromatherapy Massage therapy Yoga Hypnotherapy Music therapy Acupuncture Transcutaneou s electrical nerve stimulation (TENS) Hydrotherapy | Acupressure, aromatherapy, and massage eased labor pain. Aromatherapy is the most effective. Yoga, and acupressure shortened labor stages. No significant differences vs. usual care/placebo in pharmacological use, Apgar scores. Non-pharmacological methods are effective and safe for low- risk pregnant women. Aromatherapyand acupressure are recommended. Further research is needed for validation. |
| Ashagrie, Fentie and Kassahun, (2020) | To systematically examine the effectiveness, safety, a controversies surrounding epidural analgesia as a method managing labor pain ar to provide a comprehensive assessment of the existing evidence, discuss the various aspects of epidural analgesia, and offer recommendations for i clinical use | Various countries a healthcare settings | Pregnant women ir labor who are experiencing pain | a systematic review | The pharmacological techniques and system opioids primarily focu on epidural analgesia | finding : Epidural analgesia is highly effective for labor pain relief. Recent studies show comparable labor duration and instrumental delivery rates between epidural and opioids. Epidural use is linked to reduced neonatal depression and improved maternal satisfaction. The connection between epidural and prolonged labor and increased cesarean rates is debated. Recommendations: Provide pain relief upon maternal request if no contraindications exist. Choose pain management methods based on a thorough evaluation of benefits and risks for the mother and fetus. Balance epidural's physiological benefits with potential risks. Clinicians should stay updated on evidence-based labor pain management practices |
| Beyable, Bayable, and Ashebir, (2022) | The aim of the efficaciousness of pharmaceutical techniques in the management of labor pain and to establish a clear clinical working guideline for labor pain management in resource-limited settings and to provide insights into the benefits, risks, and practicality of pain management methods in resource- limited settings and establish clear clinical guidelines for labor pain management. | various countries and healthcare settings | Pregnant women who are experiencing labor and childbirth, particularly in a resource-limited setting. | Design: A systematic review Method: using three databases PubMed, Google Scholar, and the Cochrane Library. 37 studies were included in the review and 3 reports focused on labor pain management techniques in a resource-limited setting, with a particular empha on providing evolution. | To two main types of labor pain management techniques: Pharmacologic Pain Management (effectiveness, safety, and feasibility of pharmacologic methods. Include parenteral opioids (e.g., pethidine, morphine) and non- opioid medications). Non- Pharmacologic Pain Management :(continuous labor support, massage therapy, music- assisted relaxation, and abarcacian | Findings: Use pharmacologic agents in combination with non-pharmacologic methods. Use of pharmacologic agents for labor pain management, particularly opioids, and their potential complications: Avoid opioids for patients with respiratory disease, neurological impairment, or renal disease. Avoid Diclofenac for gastrointestinal bleeding, renal disease, or heart failure patients. Avoid Paracetamol for patients with liver problems |

| | | | | applicable | position). | |
|---------------------------------------|---|--|--|--|---|--|
| Abiodun Ojo and Owopetu, (2020) | To assess the factors influencing midwives' management of labor pain at tertiary hospitals in Nigeria. | In Ekiti State, Nigeria. Setting: tertiary hospitals within the state | Midwives working tertiary hospitals ir Ekiti State, Nigeria | Cross-sectional research design survey method | Pharmacological Pain Management: Non-opioid analgesics (e.g., paracetamol, diclofenac) Opioid analgesics (e.g., pethidine) Epidural analgesia Inhalational analgesia (e.g., nitrous oxide, Entonox) Local anesthetics Intravenous pain medications Non- Pharmacological Pain Management: Breathing techniques Relaxation techniques Massage | Findings: Midwives exhibited an average level of knowledge concerning labor pain management. Midwives demonstrated positive attitudes and willingness toward pain management. Commonly used non-opioid analgesics included paracetamol, diclofenac, and hyoscine butyl bromide. Limited availability of facilities for hydrotherapy and diversional therapy (e.g., music, television) for pain management. Staff shortages negatively impacted personalized care and pain management for laboring women. Recommendations: Ensure availability of pain relief equipment like hydrotherapy and diversional therapy. Address staffing shortages by recruiting more midwives to enhance labor pain management. Develop policies empowering midwives and granting autonomy in labor pain management. Implement ongoing education and training for midwives to improve their labor pain management skills. Tackle challenges posed by staff shortages and patient influx to enhance labor pain management staffing shortages negatives to improve their labor pain management staffing shortages posed by staff shortages negatives to pain management staffing shortages posed by staff shortages negatives and patient influx to enhance labor pain management staffing shortages negatives and patient influx to enhance labor pain management staffing shortages negatives and pain management staffing shortages negatives and pain management staffing shortages negatives and pain management staffing shortages negatives to improve their labor pain management staffing shortages negatives to improve their labor pain management staffing shortages negatives to improve their labor pain management staffing shortages and patient influx to enhance labor pain management staffing shortages negatives to pain management staffing shortages negatives to pain management staffing shortages negatives to pain management staffing shortages pain the pain management staffing shortages negatives to pain |
| Boateng, Kumi and Diji, (2019). | To explore the experiences of nurses regarding the utilizatio of non-pharmacologic methods for managing labor pain and understand the extent t which these healthcare professionals are famil with and utilize non- pharmacological methods, their perceptions of the benefits and barriers associated with these methods, and their overall experiences in incorporating interventions into their practices | Ghana, specifically healthcare settings where nurses and midwives are involved in providi care to pregnant women during labo | nurses and midwiv who provide care t pregnant women during labor in healthcare settings Ghana | Qualitative research design/i depth interviews | non- pharmacological methods Sacral massage Deep breathing exercises Music therapy Ambulation Cold shower Cold shower Cold or warm compresses Guided imagery Chromotherap y Acupuncture Transcutaneou s electrical nerve stimulation (TENS) Homeopathy | Findings: Nurses and midwives commonly use non- pharmacological interventions like sacral massage, deep breathing, and diversional therapy for labor pain management. Limited awareness and use of certain interventions like guided imagery, acupuncture, and chromotherapy. Benefits include no side effects, relaxation, improved patient relationships, and comfort. Barriers: The perception isnon- pharmacological methods are less effective than pharmacological ones. Insufficient staff and time for time-consuming interventions. Inadequate healthcare system resources. Lack of privacy and family participation due to ward design. Client preferences and misconceptions hinder some interventions. |

| | | | | | | Recommendations: Enhance education on diverse non-pharmacological methods. Address staff workload and resource challenges. Improve labor ward design for privacy and family involvement. Educate clients to correct misconceptions. Emphasize the complementary role of non-pharmacological methods to pharmacological options. |
|---------------------------------------|---|--|--|---|--|---|
| Kennedy D. K, et al., (2021) | To explore and describ the non-pharmacologic interventions used to manage pain during labor and to provide insights into the strategies and techniqu employed by women during labor to cope w and alleviate pain, as well as to understand their perceptions of the care provided by midwives in terms of pain management | Adidome Government Hospi in the Volta Regior of Ghana. | 17 Postpartum women who recent gave birth at Adidome Government Hospital, Volta Region, Ghana, | An exploratory descriptive qualitative study involving in-dept interviews with 1 puerperal womer | non-pharmacological interventions(shouting walking, deep breathin and seeking support fro family and midwives) | Findings: Puerperal women experienced severe labor pains lasting more than 12 hours. Non-pharmacological pain management strategies included shouting, walking, deep breathing, and receiving support from family and midwives. Women approved of midwives' care and valued the presence of their significant others during labor. Recommendations: Enhance midwives' training to improve pain management and emotional support. Educate expectant mothers about non-pharmacological pain relief techniques during antenatal care. Create a supportive and noise-proof labor environment to facilitate pain expression and coping for women |
| Bishaw, Sendo, and Abebe (2020) | To assess knowledge a use of labor pain relief methods and associate factors among obstetri caregivers in the study setting | on public health centers in the East Gojjam zone of the Amhara region, Ethiopia, | 379 obstetric caregivers working in public health centers | a descriptive cros sectional research design | Pharmacological methods (Systemic opioids (e.g., Pethidine, Diclofenac, Paracetamol, Hyoscine) Non-pharmacological Methods(Psychotheraj Massage, Allowing the laboring woman to ambulate (move freely Showing the woman how to bear down effectively, Allowing a companion of choice to support the laboring woman) | Findings: Low utilization of labor pain relief methods by obstetric caregivers. Pharmacological and non- pharmacological methods are underused. Systemic opioids (Pethidine) most known pharmacological method. Psychotherapy widely used non-pharmacological method. Experienced caregivers with knowledge and positive attitudes are more likely to use pain relief methods. Barriers: high patient flow, limited drugs/equipment, lack of knowledge, inadequate staffing. Recommendations: Regular in-service training for caregivers' knowledge/skills. Foster awareness among caregivers about pain relief's importance. Provide consistent supervision/support in pain management. Improve access to essential drugs and equipment. Increase staffing to better attend to laboring women. Consider maternal preferences in pain management strategies. |

| Mousa et al., (2018) | To explore how HPs perceive and practice pain management during labor in Minia maternity units and to investigate the attitudes of health professionals towards pain relief methods during labor, the methods they use for pain relief, and the barriers they face in providing pain relief options to women in labor. | In Minia Governorate, Egypt. The study focused on maternity units within Minia Governorate, including Minia Maternity and Children University Hospital (the only tertiary hospital in the region) and nine district maternity units. | 306 healthcare professionals Conducting Delivery in Minia Maternity Units including obstetricians, nurses, and other healthcare professionals directly engaged in assisting women during labor and delivery. | A descriptive cross-sectional research design. | Pharmacological Methods: (Medications (e.g., paracetamol, tramadol, intravenous medications, Epidural Anesthesia, Nitrous Oxide or Inhaled Gases) Non- pharmacological Methods : (Family Support, Breathing Exercises, Massage and Therapeutic Touch, Maternal Positioning, Assurance and Explanation) | Findings: Positive attitudes toward pain relief, but implementation varied. A mix of pharmacological (medications) and nonpharmacollogical (breathing, support) methods used. Medications (oral, IV, opioids) commonly used; epidural and nitrous oxide less common. Nonpharmacological methods included family support, breathing, massage, positioning, and assurance. Barriers: Hospital-related issues, attitudes, andpatient-related factors. Recommendations: Raise awareness about pain relief benefits. Educate health professionals on options. Develop safe pain relief guidelines. Improve access to methods in all settings. Collaborate for effective pain management. Involve women in decisions. Integrate pain relief into health policies. Enhance pain relief practices for better maternal care Finding : 66.9% of nurses had good pain management knowledge. 51.7% had a favorable attitude |
|--|---|--|--|---|--|---|
| Liyew, Tilahu and Habtie Bayu (2020) | To assess the knowledge and attitude of nurses regarding pain management. | In Ethiopia, specifically at the University of Gondar Comprehensive Specialized Hospital in Northwest Ethiopia. | select 422 nurses working at the University of Gondar Comprehensive Specialized Hospital | A descriptive cross-sectional research design. | Pain management in a general (both) | toward pain management. Recommendations: Educate nurses and improve their knowledge. Enhance attitudes through continuous professional development. Integrate pain management into nursing education. Further research on factors affecting knowledge and attitude. |
| Mary M, et (2018) | To explore healthcare providers' knowledge and attitudes about pain relief during labor and childbirth. Objectives included understanding their practices, identifying barriers, and gathering recommendations for improving pain management in a low-resource setting | In Moshi Hospitals, Tanzania. | 34 Healthcare providers working in the hospital setting in Moshi, Tanzania. | qualitative research design, informant interviews | Pharmacological methods: Oral medications (paracetamol, diclofenac, ibuprofen, Opioids (codeine, tramadol, pethidine, morphine, Nerve blocks, Epidural analgesia, Nitrous oxide inhalation) Non- pharmacological methods : (Breathing techniques, Back massage, Psychological support and counseling, Companionship and support from family members | Findings: Limited Pharmacological Pain Relief: Scarce use of opioids and epidural analgesia due to fear of side effects, lack of education, and cultural beliefs. Non-Pharmacological Methods: Common use of techniques like breathing and massage, hindered by staff shortages. Structural issues, absence of protocols, misconceptions, and inadequate anesthesia use were witnessed. Recommendations: Enhance provider knowledge through education on pain relief methods. Staffing and Training: Increase labor ward staff, provide specialized training, and hold educational meetings. |

| | | | | | Ambulation and movement, Water birth, Acupuncture, Yoga, Transcutaneous electric nerve stimulation | Protocols: Develop specific pain management protocols. Research: Study personalized pain relief approaches. Inform women about labor pain and relief options. Address beliefs about natural labor pain. |
|------------------------|---|---|---|---|---|---|
| Getu et al., (2019) | To determine the utilization of non- pharmacological labor pain management (NPLPM) methods among skilled birth attendants (SBAs) in health institutions within the Amhara Region. To identify and analyze the factors associated with the utilization of NPLPM among these skilled birth attendants. | Country: Ethiopia Setting: Amhara Regional State Health Institutions, Northwest Ethiopia | Skilled birth attendants (SBAs) working in health institutions within the Amhara Regional State, Northwest Ethiopia. | Descriptive analysis/ Cross- sectional study /interview- administered questionnaire | non- pharmacological pain management methods : Continuous labor support Movement and positioning Relaxation techniques Breathing exercises Hydrotherapy Massage Acupressure Heat and cold therapy Transcutaneou s Electrical Nerve Stimulation (TENS) Sterile water injection Emotional support | pain relief options Finding : About 46.8% of skilled birth attendants (SBAs) utilized non-pharmacological labor pain management methods in the study. SBAs with adequate knowledge of non-pharmacological pain management were 2.8 times more likely to use these methods. Positive attitudes increased the likelihood of utilization by 4.12 times. Age significantly influenced utilization, with SBAs aged 20-29 having 4.9 times higher odds of using non-pharmacological methods. Qualifications, such as being a midwife or medical doctor, impacted utilization. SBAs in facilities with labor pain management protocols were 3.98 times more likely to use non-pharmacological methods. Recommendations: Provide targeted training for SBAs to improve their knowledge of non-pharmacological labor pain management. Promote positive attitudes through education and awareness campaigns. Tailor interventions considering age differences among SBAs. Ensure labor pain management protocols are available and implemented in health institutions. Conduct further research to explore barriers and facilitators for non-pharmacological pain management utilization. Implementing these recommendations can enhance non-pharmacological pain management utilization, enhancing the birthing experience for women in labor. |

Knowledge, Attitudes, and Practices of Midwives about Labor Pain Management

A holistic exploration of perspectives and practices of HCPs regarding means of labor pain management was conducted across different regions, including Egypt, Tanzania, and Ethiopia, revealing a multifaceted comprehension of opportunities and challenges in this critical period ^[16-19].

and his colleagues (2018) explores the attitudes and knowledge of medical professionals (n = 34) toward pain management throughout the stages of labor and delivery. It aims to determine obstacles in a low-resource environment, investigate affecting factors, and fully comprehend the behaviors of providers. This qualitative study, conducted in Tanzania's Moshi hospitals, focuses on a variety of methods for managing pain, including both pharmaceutical and non-

A Study conducted in a Tanzanian hospital by McCauley

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pharmacological approaches. Results show that the use of pharmaceuticals is restricted because of adverse consequences and cultural attitudes, while shortages of workers create difficulties for non-pharmacological methods. Furthermore, structural issues, a lack of protocol, misunderstandings, and insufficient anesthesia are mentioned. The recommendations center on enhancing women's education, protocol creation, staff training, knowledge enhancement, and the incorporation of pain treatment into maternity care services. This study provides a new understanding of midwives' principles, practices, and knowledge of the treatment of labor pain ^[16].

A descriptive cross-sectional study of 306 healthcare professionals was conducted in Minya, Egypt. To investigate the perspectives and practices of medical professionals on pain management during labor. They used a variety of strategies, including non-pharmacological options including family support, deep breathing, and massage, as well as pharmacological options such as medication and epidural anesthetic the survey found that these experts had favorable views. However, difficulties due to hospital-related issues and prevalent perspectives presented obstacles to the efficient execution of pain management strategies. The recommendations emphasized the need for improved knowledge, continuing education, the creation of guidelines, and the involvement of women in decisionmaking processes. They also pointed out that there was an important discrepancy between the use of pain relief and its actual importance, which was primarily caused by limitations in healthcare facilities. To overcome these obstacles and promote more awareness among medical professionals, immediate action is necessary to overcome these obstacles, promote more awareness among the public and medical professionals, and improve the standard of labor care ^[17].

The study by Liyew and colleagues (2020) at the University of Gondar Comprehensive Specialized Hospital in Ethiopia evaluated the attitudes and knowledge of select 422 nurses toward pain management. They discovered that whereas 51.7% of nurses had positive attitudes, 66.9% of nurses had strong expertise in pain treatment. These observations provide insight into nurses' competence to manage pain. The authors suggest ongoing professional development and educational activities to improve nurses' ability to manage pain. They also recommend including concepts of managing pain in the nursing curriculum ^[18].

In East Gojjam Zone, Ethiopia, Bishaw, (2020) assessed the knowledge and practical use of labor pain management techniques by 379 obstetric providers in a cross-sectional survey. The research revealed an inadequate overall use of pharmaceutical and nonpharmacological interventions, with psychotherapy and systemic opioids being the most well-known and often utilized. An optimistic perspective, qualifications, and sufficient knowledge are all connected with increased utilization. Staffing concerns, budget constraints, and transferring patients were among the obstacles. The recommendations focused on staffing enhancement, equipment access, attitude development, training, supervision, and taking into account the preferences of the mother ^[19].

The outcomes obtained through the selected investigations provide insight into the complex interactions between midwives' attitudes, practices, and knowledge about pain during labor management. The clarification indicates the broad spectrum of strategies, including pharmaceutical and non-pharmacological techniques, and highlights the complex aspects influencing these decisions. To the phenomenon briefly, this synthesis advances our understanding of midwives' perspectives regarding the management of labor pain. The result has effects on improving midwifery practices, raising the standards for maternal health, and developing guidelines for future research and policy initiatives in this important area. Finally, the integration of this research provides insightful information about the knowledge, attitudes, and practices of midwives regarding labor pain management, highlighting the necessity of continuous education, increased consciousness, and the creation of complete recommendations to improve the results of maternity care.

Pharmacological Methods for Managing Labor Pain

The two following systemic studies recommended utilizing epidural analgesia for labor pain management ^[11, 14], emphasized the riskbenefit ratio, and supported utilizing the evidence-based knowledge. In resources limited context, they recommend consuming a combination of non-pharmacological and pharmacological methods for pain management.

The first review was conducted by Ashagrie, Fentie, and Kassahun (2020) to investigate the safety, effectiveness, and issues related to epidural analgesia in the treatment of labor pain. This research, which spans several nations and medical environments, focuses on expectant mothers who are in labor. Their findings, which primarily focus on pharmaceutical methods-specifically, epidural analgesia-show that epidural is remarkably successful in reducing labor pain. Epidural and opioid-based techniques have similar labor durations and instrumental delivery rates, according to recent studies. Furthermore, the utilization of epidurals is associated with higher mother satisfaction and less neonatal distress. The relationship between the usage of epidurals and its effects on longer labor and higher rates of cesarean sections is still up for dispute. The review's recommendations instruct medical professionals to think about relieving a mother's suffering upon request and to base their decisions on the most effective way to manage her pain on a careful analysis of the risks and benefits. It underlines the necessity of weighing the benefits of epidurals against any hazards and the significance of keeping up with the most recent research on evidence-based labor pain management techniques. The review conducted offers significant insights

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into the effectiveness, practical advice, and considerations related to epidural analgesia for the management of labor pain ^[11].

Another systematic review was conducted by Beyable, Bayable, and Ashebir (2022) aimed to create clinical recommendations for the treatment of labor pain in environments with low resources. The study highlights the efficaciousness of pharmaceutical techniques in the management of labor pain, especially in settings with limited resources, utilizing a comprehensive review encompassing 37 studies. The study focuses on the viability, safety, and efficacy of several pharmacological strategies, including non-opioid drugs and parenteral opioids (such as morphine and pethidine). The results show how important it is to combine non-pharmacological methods with pharmacological treatments to achieve the best possible pain alleviation. Furthermore, the study highlights the potential side effects of drugs and offers significant suggestions for the prudent use of pharmacological substances, particularly opioids, in individuals with medical problems. These findings help to improve labor pain management techniques, emphasize the constraints of resources, and enhance the outcomes of labor and delivery for expectant mothers [14].

The combined research of Beyable, Bayable, and Ashebir (2022) and Ashagrie, Fentie and Kassahun (2020) provides comprehensive insights into pharmacological approaches for labor pain management Ashagrie, Fentie and Kassahun's study highlights the effectiveness of epidural analgesia in reducing labor pain while noting conflicting associations with certain outcomes, whereas Beyable and his colleagues underscored the value of pharmaceutical methods in resource-limited settings, emphasizing the importance of evidencebased practices, careful risk assessment, and a balanced consideration of benefits and risks in pain management during labor.

Non-Pharmacological Methods for Managing Labor Pain

A comprehensive systematic review and statistical network meta-analysis of 43 studies from various healthcare settings was carried out by Hu and his colleagues (2021), addressing concerns regarding the well-being of mothers and infants. The results showed that non-pharmacological interventions were safer and more effective than pharmaceutical treatments for managing labor pain during childbirth. With a focus on primiparous and multiparous pregnant women, the study assessed nine interventions: massage therapy, acupressure, aromatherapy, yoga, hypnosis, music therapy, acupuncture, TENS (transcutaneous nerve stimulation), and hydrotherapy. The study's results showed the beneficial effects of massage treatment, acupressure, and aromatherapy on the alleviation of labor pain; aromatherapy was found to be particularly successful in this regard. Furthermore, shorter labor periods were associated with acupressure and yoga. Thus, when it came to pharmaceutical reduction of pain and newborn outcomes, non-pharmacological treatments did not significantly separate from usual care or placebos. This confirms that non-pharmacological methods are safe and effective for controlling labor pain in low-risk pregnancies. The study stressed the need for more confirmation through future research, despite aromatherapy and acupressure being recommended due to their efficacy. For expectant mothers and healthcare providers, in particular, Yinchu Hu's thorough review and analysis provide insightful information about the practicality of non-pharmacological approaches to labor pain management. These approaches, in particular aromatherapy and acupressure, can be powerful and safe ways to reduce labor pain ^[13].

The Ghanaian study by Boateng, Kumi, and Diji (2019) looks at midwives' and nurses' experiences with non-pharmacological labor pain treatments. Their qualitative study investigates hurdles, advantages, and usage as well as familiarity. Techniques that are frequently employed include deep breathing, diversional treatment, and sacral massage. There is a noticeable lack of knowledge about methods like acupuncture and guided visualization. Advantages include better patient rapport, relaxation, and lack of negative effects. Difficulties include low efficacy beliefs, time limits, inadequate resources, privacy concerns, and misperceptions about clients. Recommendation focuses on teaching, improving ward design, enhancing resources, educating clients, and acknowledging the supplementary function of non-pharmacological choices ^[20].

To understand the non-pharmacological pain management techniques used by puerperal women throughout birth at Adidome Government Hospital in the Volta Region of Ghana, Konlan and his colleagues (2021) carried out an exploratory qualitative study. The study was revealed through in-depth interviews with 17 recently delivered women whose pain during labor was intense and lasted for over twelve hours. As a result, these women used a variety of techniques for coping with the pain, including vocalizing, walking, breathing deeply, and seeking help from midwives and family. Interestingly, midwives' care was highly appreciated, and having companions during labor was valued. The study recommends expanding expecting mothers' knowledge of non-pharmacological pain treatment, improving midwives' training in pain management and emotional support, and fostering an empowering labor environment to help women develop coping mechanisms and improve the overall labor experience. By providing new perspectives on the nonpharmacological pain relief strategies used by puerperal women, this study adds to our knowledge of labor pain management and suggests useful enhancements for labor care in the area.

In summary, Onlan and his colleagues' qualitative study explored the actual experiences of women using non-pharmacological methods, whereas Yinchu Hu's systematic review emphasizes the potential of such interventions. Yinchu Hu's evidence-based viewpoint

and the experience of Onlan and his colleagues' insights, taken together, highlight the effectiveness and significance of nonpharmacological methods for controlling labor pain. These results offer a comprehensive understanding that may influence healthcare decisions and procedures for the efficient and all-encompassing management of labor pain.

Factors Influencing Midwives Regarding Labor Pain Management Strategy

15 A cross-sectional design study investigated by Biodun Ojo and Owopetu (2020) explores the variables influencing labor pain treatment strategies used by midwives in Ekiti State, Nigeria's tertiary hospitals. Their study evaluates midwives' beliefs, knowledge, and behaviors about pharmaceutical and non-pharmacological methods of managing labor pain. The study evaluates technique availability and utilization and considers factors like hospital policy and staff shortages to offer recommendations for improving maternity care. The results show that midwives have a moderate degree of knowledge about managing labor pain and that they have positive attitudes about pain treatment techniques. The most common non-opioid painkillers are diclofenac, hyoscine butyl bromide, and paracetamol; hydrotherapy and diversional therapy are seen as less available. Pain treatment and individualized care are hampered by a lack of staff. According to the report, there should be tools for pain management readily available. There should also be efforts made to recruit more staff, empower midwives through policy support, provide ongoing education, and address issues related to staff shortages and patient inflow. Thus, the research provides insightful information that midwives may use to improve their labor pain management techniques, which will lead to better standards for maternal care ^[15].

Getu and his colleagues (2020) focused on nonpharmacological labor pain management (NPLPM) is used by skilled birth attendants (SBAs) in Northwest Ethiopia's Amhara Region. Using cross-sectional methodology and questionnaires given through interviews, the research seeks to explore the factors guiding SBAs' use of NPLPM. According to the research, 46.8% of experienced birth attendants use NPLPM techniques, and this use is correlated with several variables, including age, education, positive attitudes, and the availability of labor pain management protocols. NPLPM has a greater probability of being used by younger SBAs who have more expertise and more positive attitudes. The report makes several recommendations, such as focused instruction, improving attitudes, and age-specific tailored interventions, following protocols, and conducting more research to identify use barriers. By implementing these recommendations into practice, women's labor experiences may be enhanced and NPLPM utilization may increase [12].

The integration of studies conducted in Ghana, Nigeria, and Ethiopia provided a comprehensive overview of the factors

influencing labor pain management practices used by midwives. Boateng and his colleagues (2019) highlighted non-pharmacological approaches and indicated their advantages and disadvantages. Abiodun Ojo and Owopetu (2020) suggest retraining and support for policies while emphasizing knowledge, attitudes, and resources. Getu and his colleagues (2020) addressed the influence of different factors on the use of non-pharmacological methods with a focus on trained birth attendants. When taken as a whole, these studies offer a thorough framework for improving midwives' methods for managing labor pain through instruction, resource distribution, and policy reinforcement, improving the experiences of mothers receiving care.

Gaps in literature regarding the Management of Labor Pain and Possible Implications

The literature currently in publication emphasizes the complexity of labor pain and the critical importance of providing appropriate pain relief during childbirth. This gap requires a thorough analysis in three crucial areas: First, since the emphasis on pharmaceutical interventions obscures the scope of nonpharmacological practices, a thorough evaluation of midwives' knowledge of and application of both pharmaceutical and nonpharmacological procedures is required. Secondly, it is imperative to comprehend the multifaceted factors influencing midwives' pain management techniques, considering physiological, psychological, and societal aspects. Third, the paucity of data about the effects of various pain management techniques on mother and newborn outcomes emphasizes the necessity for highlighting the need for evidence-based guidelines.

The current review identifies the gaps in the literature and highlights how future research endeavors, by examining the factors influencing midwives' clinical judgments and the potential consequences for the well-being of mothers and newborns, can enhance midwifery practices, facilitate informed decision-making, and result in improved obstetric outcomes. These factors are especially important in healthcare settings with limited resources. This study's implications extend beyond educational institutions to include professional standards, policy formulation, and guidelines for midwifery practice, all of which support a comprehensive and successful strategy for managing labor pain. By addressing these gaps, our research hopes to improve maternal healthcare overall by improving the standard of care for mothers and newborns.

CONCLUSION

In conclusion, managing labor pain during childbirth effectively is a challenging endeavor that involves the use of both nonpharmacological and pharmaceutical methods. Even while pharmacological approaches, like as epidural analgesia, have shown to be highly beneficial, there is still disagreement about whether to employ them, particularly in healthcare settings with limited resources

where a combination of pharmaceutical and non-pharmacological approaches can provide the most comfort. It has been demonstrated that non-pharmacological interventions—like massage, acupressure, and aromatherapy—are safer and more effective in low-risk pregnancies, highlighting the potential of holistic methods for the management of labor pain. As caregivers, midwives are essential in this process because of the tremendous impact that their expertise, attitudes, and practices have on the care that women receive. Improving labor pain management methods requires addressing the variables influencing midwives' strategies and the requirement for evidence-based standards.

Nevertheless, despite the wealth of research on labor pain management, there are still several important gaps requiring immediate implementation of evidence-based standards, a thorough assessment of midwives' knowledge and skills, and an awareness of the many variables influencing pain management. These gaps present the potential for more study to improve maternal healthcare, guide decision-making, and promote midwifery practices—all of which will lead to better standards of care for expectant mothers and their newborns.

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The author has no conflict of interest to declare.

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