International Journal of Computational and Experimental Science and ENgineering (IJCESEN)

Vol. 10-No.4 (2024) pp. 3155-3161
http://www.ijcesen.com

ISSN: 2149-9144

Research Article

Pain Management Strategies During Labor: Joint Contributions of Nurses and Midwives

Ohud Alaskan Muflih Alsharari[1]*, Halaa Muharraq D[2], Rehab Farhan Kareem AlRuwaily[3], Eman Dayij S Alanazi[4], Alanazi, Afaf Shafi F[5], Najah Almashni M Alenezi[6], Eftkhar Masier Bneah Alanzi[7], Azhar Mushhan Enad Alsulobi[8], Amnah Khalid Jilbakh Alruwaili[9], Fadiyah Oudah Matar Alanazi[10], Modhi Rafi Ayed Alsubaie[11]

[1]Nursing and Midwifery Technician – King Faisal Hospital in Al Qurayyat, Al Jouf Health Cluster – Al Qurayyat – Al Jouf Region – Kingdom of Saudi Arabia
* **Corresponding Author Email:** ahalalsharari@moh.gov.sa - **ORCID:** 0000-0002-0247-7750

[2]Nursing Technician – Maternity and Children's Hospital in Hail, Hail Health Cluster – Hail – Hail Region – Kingdom of Saudi Arabia
Email: halshammary1@moh.gov.sa- **ORCID:** 0000-0002-1007-7850

[3]Nursing Technician (Neonatal Care) – Dumat Al Jandal General Hospital, Al Jouf Health Cluster – Dumat Al Jandal – Al Jouf Region – Kingdom of Saudi Arabia
Email: rfalrowily@moh.gov.sa - **ORCID:** 0000-0002-2007-7850

[4]Specialist – Nursing and Midwifery – Turaif General Hospital, Northern Borders Health Cluster – Turaif – Northern Borders Region – Kingdom of Saudi Arabia
Email: a3m3o31@gmail.com- **ORCID:** 0000-0002-3007-7850

[5]Nursing Technician – Maternity and Children's Hospital, Northern Borders Health Cluster – Arar – Northern Borders Region – Kingdom of Saudi Arabia
Email: dr.afaf-sh@hotmail.com - **ORCID:** 0000-0002-4007-7850

[6]Nursing and Midwifery Technician – Health Control Center at Arar Airport, Northern Borders Health Cluster – Arar – Northern Borders Region – Kingdom of Saudi Arabia
Email: NAALANAZI@moh.gov.sa - **ORCID:** 0000-0002-5007-7850

[7]Nursing Technician – Maternity and Children's Hospital, Northern Borders Health Cluster – Arar – Northern Borders Region – Kingdom of Saudi Arabia
Email: Eftkhara@moh.gov.sa- **ORCID:** 0000-0002-6007-7850

[8]Nurse – Maternity and Children's Hospital, Northern Borders Health Cluster – Arar – Northern Borders Region – Kingdom of Saudi Arabia
Email: Nana10022@hotmail.com- **ORCID:** 0000-0002-7007-7850

[9]Nurse – Maternity and Children's Hospital in Al Jouf, Al Jouf Health Cluster – Sakaka – Al Jouf Region – Kingdom of Saudi Arabia
Email: akalrwaly@moh.gov.sa- **ORCID:** 0000-0002-8007-7850

[10]Midwife – Maternity and Children's Hospital, Northern Borders Health Cluster – Arar – Northern Borders Region – Kingdom of Saudi Arabia
Email: Fadiah1117@gmail.com- **ORCID:** 0000-0002-9007-7850

[11]Nursing Technician – Maternity and Children's Hospital, Northern Borders Health Cluster – Arar – Northern Borders Region – Kingdom of Saudi Arabia
Email: m.o.r.1122@hotmail.com- **ORCID:** 0000-0002-3307-7850

Article Info:

DOI: 10.22399/ijcesen.4487
Received : 02 June 2024
Accepted : 30 June 2024

Keywords

Pain management,
labor,
nurses,
midwives,
collaborative care,
non-pharmacological techniques

Abstract:

Pain management during labor is a crucial aspect of maternity care that requires a collaborative approach between nurses and midwives. Both professionals play vital roles in providing support and comfort to laboring women, employing a variety of evidence-based strategies to alleviate pain. Nurses are often responsible for monitoring the mother's and baby's vital signs, administering medications, and utilizing non-pharmacological techniques such as breathing exercises, massage, and hydrotherapy. Midwives, on the other hand, focus on creating a supportive environment, guiding the mother through the stages of labor, and employing hands-on techniques such as acupressure and positioning to enhance comfort. The synergy between nurses and midwives facilitates a holistic pain management approach that caters to the individual needs of each laboring woman. Moreover, effective communication and collaboration between nurses and midwives are essential in assessing pain levels and preferences, thus ensuring that care plans are tailored appropriately. Education plays a crucial role in empowering expectant mothers to understand their options for pain relief, whether pharmacological or non-pharmacological. Joint efforts in creating personalized birth plans help foster a sense of control and satisfaction for the laboring woman, which can significantly impact her overall experience. By leveraging their collective expertise and focusing on compassionate care, nurses and midwives contribute to an environment that promotes both physical and emotional well-being during childbirth, ultimately enhancing the quality of maternal and neonatal outcomes.

1. Introduction

The experience of labor is a profound and transformative event, marked by the powerful physiological process of childbirth. Central to this experience is the phenomenon of labor pain, a complex and multifaceted entity that is universally recognized yet intensely personal in its perception and impact. Labor pain arises from a confluence of physiological mechanisms, including uterine contractions, cervical dilation, and pressure on surrounding structures, all modulated by psychological, emotional, cultural, and environmental factors [1]. Effective management of this pain is not merely a clinical objective but a fundamental component of respectful, humane, and ethical maternity care. It has far-reaching implications for the laboring woman's sense of control, her overall birth experience, and her physical and psychological well-being in the immediate postpartum period and beyond. Furthermore, unmanaged severe pain can lead to detrimental physiological effects, such as increased catecholamine release, which may potentially slow the progress of labor and affect fetal oxygenation [2].

Within the modern maternity care landscape, the responsibility for supporting women through this intensity falls significantly on two pivotal professional groups: nurses and midwives. While their training, philosophical underpinnings, and scope of practice may have distinct historical roots, their roles in the labor room are increasingly complementary and interdependent. It is through their joint contributions that a comprehensive arsenal of both pharmacological and non-pharmacological strategies can be expertly deployed, tailored to the individual woman's needs, preferences, and the dynamic context of her labor. This collaboration transforms pain management from a series of technical interventions into an integrated, continuous, and compassionate partnership in care [3].

2. The Multidimensional Nature of Labor Pain

To appreciate the necessity of a collaborative approach to pain management, one must first understand the intricate nature of labor pain itself. It is a unique type of pain, distinct from pathological pain, as it is associated with a normal, healthy process. The sensory experience originates from two primary pathways. During the first stage of labor, pain impulses primarily arise from the uterus and cervix. As contractions intensify, uterine muscle cells become ischemic, releasing pain-mediating chemicals like bradykinin, while the stretching and tearing of cervical tissues activate mechanoreceptors [3]. This pain is typically visceral in nature, often described as deep, aching, and diffuse, and is referred to the lower abdominal and lower back regions. The neural pathways for this pain travel through the spinal cord to the brain, a process that is subject to significant modulation by higher brain centers.

This leads to the second, equally critical dimension: the affective and cognitive component of labor pain. A woman's experience of pain is not determined solely by the intensity of uterine contractions. Her emotional state, personal expectations, cultural beliefs about childbirth, level of fear and anxiety, and the quality of her support

system all profoundly color her perception [4]. Fear, in particular, can create a vicious cycle: fear leads to tension, which increases pain, which in turn amplifies fear—a concept famously described as the "fear-tension-pain" syndrome [5]. Furthermore, a sense of helplessness or loss of control can exacerbate the suffering associated with the pain sensation. Therefore, any effective pain management strategy must address not only the somatic source of pain but also the psychological and emotional milieu in which it is experienced. This multidimensional understanding necessitates a care team equipped to intervene on multiple levels simultaneously, a task perfectly suited to the combined skillset of nurses and midwives.

3. The Distinct yet Complementary Roles of Nurses and Midwives

The professional identities of nurses and midwives, while overlapping in the arena of labor support, bring distinct yet harmonious strengths to the birth environment. Understanding these roles is key to appreciating their joint contribution.

Registered nurses in the labor and delivery setting are often the primary continuous caregivers, especially in hospital-based, medically-oriented models. Their foundational strength lies in vigilant surveillance and technological management. Nurses are experts in continuous fetal monitoring, interpreting vital signs, tracking the progress of labor through cervical examinations and contraction patterns, and recognizing early signs of deviation from the normal [6]. This role is crucial for safe pain management, as it allows for the timely identification of situations where pharmacological intervention might be recommended or become necessary.

The nurse's expertise is particularly central in the administration and monitoring of pharmacological pain relief. This includes managing regional anesthesia, such as epidurals. The nurse is responsible for preparing the woman for the procedure, assisting the anesthesiologist, monitoring the woman's blood pressure and sensory levels post-administration, assessing for potential complications like hypotension or adverse reactions, and managing the infusion pump [7]. For systemic pharmacological agents like opioid analgesics, nurses calculate and administer correct dosages, monitor for maternal side effects (such as sedation, nausea, or respiratory depression), and observe the neonate for potential effects after delivery [8]. Their role ensures that powerful pain-relief tools are used safely and effectively, providing a critical safety net within the pain management plan.

The Midwifery Role:

Midwifery philosophy, as defined by the International Confederation of Midwives, is rooted in the belief that pregnancy and birth are normal physiological life events [9]. The midwife's approach is inherently holistic, viewing the woman as an integrated physical, emotional, social, and spiritual being. Their expertise lies in supporting the normal physiology of labor. Midwives are often skilled in using non-invasive techniques to facilitate progress and manage pain, such as position changes, movement, hydrotherapy, and touch. They prioritize building a relationship of trust and continuity, which in itself is a powerful analgesic, as it reduces anxiety and fosters a sense of security [10].

Midwives are frequently the leading advocates and practitioners of non-pharmacological pain management (NPM). Their training deeply embeds techniques like breathing exercises, visualization, massage, acupressure, and the use of heat or cold [11]. They are adept at creating a calm, dimly lit, and private environment that promotes the woman's own production of oxytocin and endorphins, the body's natural pain-relieving hormones. The midwife's role is often one of "guarding the space," protecting the laboring woman from unnecessary interruptions and interventions, and empowering her to follow her body's instincts. This focus on normalcy and empowerment directly addresses the affective component of pain, helping to break the fear-tension-pain cycle.

4. Synthesis: A Collaborative Model for Comprehensive Care

It is at the intersection of these roles that optimal pain management is realized. The nurse's vigilant monitoring creates a safe container within which the midwife's physiological support can flourish. Conversely, the midwife's success in using NPM techniques may reduce the need for pharmacological intervention, simplifying the nurse's surveillance role. They function as two halves of a whole: the nurse ensuring safety within the medical model, and the midwife promoting normalcy within the holistic model. In many settings, particularly where roles are blended, a single professional may integrate these competencies. However, the conceptual framework of collaboration ensures that all bases—technological safety and holistic support—are comprehensively covered, preventing gaps in care that can occur when one perspective dominates.

5. Pharmacological Pain Management Strategies:

Pharmacological methods remain a cornerstone of pain relief for many women, particularly in prolonged or complicated labors. Their effective and safe implementation is a prime example of required collaboration.

Epidural analgesia is widely regarded as the most effective method for relieving labor pain. Its management is a team effort. The midwife or nurse plays an essential role in pre-procedure counseling, ensuring the woman understands the benefits, risks, and process. They provide physical and emotional support during the often-challenging placement procedure. Once the epidural is active, the nurse assumes primary responsibility for continuous monitoring of maternal blood pressure, sensory level, and motor block, as well as fetal heart rate patterns, while also managing urinary catheterization and position changes to prevent complications like hypotension or uneven block [12].

The midwife's role, concurrently, is to continue holistic support. An epidural does not eliminate the need for emotional and psychological care. The midwife can guide the woman in focused breathing if she feels pressure or discomfort, facilitate position changes within the limits of the block to optimize labor progress, and provide constant reassurance [13]. They monitor the progress of labor, as epidurals can sometimes be associated with a slowing of contractions, and may employ techniques like position changes or intravenous fluid management in consultation with the obstetric team. This shared vigilance ensures that the powerful tool of the epidural is leveraged for maximum benefit with minimal risk.

Parenteral opioids, such as fentanyl or remifentanil, offer another avenue for pain relief. The nurse's expertise is critical in their safe administration, adhering to protocols for dosing, timing relative to delivery, and monitoring for maternal respiratory depression, sedation, or nausea. The midwife complements this by providing heightened supportive care. Since systemic opioids can cross the placenta and may cause neonatal respiratory depression or altered alertness at birth, the midwife's skill in monitoring fetal well-being through intermittent auscultation or interpreting electronic fetal monitoring traces is vital [14]. Furthermore, they can enhance the analgesic effect of the medication by creating a calming environment and using gentle coaching, potentially allowing for lower doses. Post-delivery, both professionals are alert to signs of neonatal adaptation, ready to initiate supportive measures if needed.

6. Non-Pharmacological Pain Management:

NPM strategies form the first line of defense and a continuous thread of support throughout labor, regardless of pharmacological use. Their successful implementation relies deeply on the joint knowledge and encouragement of the care team.

Simple, evidence-based physical interventions are powerful tools. Hydrotherapy, whether in a deep tub or shower, provides significant pain relief through the combined effects of buoyancy, warmth, and hydrostatic pressure [15]. The nurse ensures safety—monitoring water temperature and maternal vital signs—while the midwife often facilitates the process, encouraging relaxation and guiding the woman through contractions in the water. Similarly, movement and position changes are paramount. Upright positions, walking, rocking on a birth ball, or leaning forward can enhance labor progress and reduce pain by utilizing gravity and optimizing the pelvic diameters [16]. The nurse may assist with maneuvering around monitoring equipment, while the midwife suggests and guides effective positions based on the stage of labor and fetal position.

The creation of a therapeutic environment is another shared task. Dimming lights, reducing noise, maintaining privacy, and allowing the presence of chosen support people (doulas, partners, family) are interventions that cost little but yield immense benefits. The nurse can manage the logistical aspects of the room, while the midwife often takes the lead in "holding the space," setting a tone of quiet confidence and minimizing intrusive disruptions. The use of heat (packs on the lower back) or cold (cool cloths on the forehead), massage, and counter-pressure are techniques both professionals can employ, providing direct physical comfort [17].

7. Psychological and Mind-Body Techniques:

Addressing the cognitive-affective component of pain is where the collaborative relationship truly shines. Continuous labor support, provided by either a nurse, midwife, or both, is in itself one of the most consistently effective interventions for improving birth outcomes and satisfaction, with noted analgesic effects [18]. This support includes verbal encouragement, praise, and reassurance—actions that combat fear and foster a sense of capability.

Both professionals can guide women in psychoprophylactic methods. Techniques like

patterned breathing (e.g., Lamaze) help focus the mind away from pain and increase oxygenation. Visualization and guided imagery transport the woman to a calming mental space. Mindfulness and relaxation training teach her to observe sensations without panic [19]. The midwife, with her focus on normalcy, may naturally integrate these into her coaching. The nurse, during her ongoing assessments, can reinforce these techniques, reminding the woman to "breathe through the peak" of a contraction seen on the monitor. This consistent, unified messaging is far more powerful than intermittent or contradictory advice.

8. A Model of Continuous, Integrated Care

The true power of the nurse-midwife collaboration is not in sequential handoffs but in seamless, integrated care. Consider a woman in active labor. The midwife is at her side, guiding her through rhythmic breathing and applying sacral counter-pressure as her partner holds her hands. The nurse enters, unobtrusively checks the electronic fetal monitor tracing, notes a reassuring pattern, and adjusts the blood pressure cuff. She quietly asks the woman if she would like a cold drink or a change of position, supporting rather than interrupting the rhythm the midwife has established. They exchange a brief, knowing glance—a non-verbal confirmation that all is well. Later, if the labor becomes exhausting and the woman requests an epidural, the same team seamlessly transitions. The midwife explains what to expect, maintains eye contact and calm narration during the procedure, while the nurse prepares the equipment, assists the anesthesiologist, and begins her vigilant post-epidural monitoring. The woman experiences not a change in caregivers or philosophy, but a continuous, adaptable partnership working in her best interest.

This model prevents fragmentation of care. It ensures that the woman's emotional and physical needs are met simultaneously with stringent safety monitoring. It allows for real-time, interdisciplinary decision-making. For instance, if a nurse observes a concerning fetal heart rate pattern, the midwife can immediately help the woman shift to a left-lateral position to improve placental perfusion, while the nurse notifies the obstetrician. This coordinated response is efficient and reassuring.

9. Challenges and Barriers to Effective Collaboration

Despite its clear benefits, achieving this ideal synergy is not without challenges. These barriers must be acknowledged and addressed.

In many healthcare systems, historical tensions and perceived hierarchies between nursing and midwifery professions can create silos. Nurses may view midwives as less technically skilled, while midwives may perceive nurses as overly interventionist [20]. These stereotypes hinder open communication and mutual respect, which are the bedrock of collaboration.

Hospital policies and staffing models often do not facilitate collaboration. High patient-to-staff ratios, fragmented care models where multiple caregivers rotate, and documentation burdens can leave little time for the meaningful communication required for joint care planning [21]. A culture that prioritizes technological surveillance over holistic support can marginalize the midwifery approach, while a culture resistant to evidence-based medical intervention can undervalue nursing expertise.

If educational programs for nurses and midwives do not include explicit training in interprofessional collaboration, graduates may enter practice unprepared for teamwork [22]. Furthermore, unclear or overlapping scopes of practice can lead to territorialism or confusion about responsibilities, particularly in areas like cervical assessment or the administration of certain medications.

10. Strategies for Fostering a Collaborative Practice Environment

Overcoming these barriers requires intentional effort at individual, institutional, and educational levels. Integrating nursing and midwifery students in shared learning experiences from the outset of their training is fundamental. Simulations, case studies, and clinical rotations that require them to work as a team can break down stereotypes and build a foundation of mutual understanding and respect before professional identities become entrenched [23].

Healthcare institutions can implement care models designed for partnership. This could include dedicated "nurse-midwife teams" assigned to a woman for the duration of her labor, joint rounds, and shared documentation systems that value both technical data and holistic observations [24]. Clear, mutually-developed protocols that define roles while emphasizing shared goals can prevent conflict.

Strong clinical leadership that actively champions a collaborative model is essential. Leaders can create forums for dialogue, address conflicts constructively, and reward teamwork. Cultivating a unit culture that explicitly values both the "art" and "science" of midwifery and nursing—where a perfectly timed word of encouragement is valued as

highly as a correctly interpreted fetal monitor strip—is critical for sustained change [25].

11. The Future of Pain Management:

The landscape of pain management is evolving, and the nurse-midwife partnership will be central to integrating new knowledge and techniques.

Methods like transcutaneous electrical nerve stimulation (TENS), which uses low-voltage electrical currents to interfere with pain signal transmission, and the use of virtual reality for distraction, are gaining evidence [26, 27]. Their successful implementation will require nurses to manage the technology and midwives to integrate it sensitively into the laboring woman's experience.

The future lies in truly personalized care. Advances in understanding pharmacogenomics may one day allow for tailored analgesic regimens based on a woman's genetic profile [28]. This will demand even closer collaboration: nurses with pharmacological expertise to administer complex regimens, and midwives to ensure the woman's personal values and psychological context remain at the center of these advanced plans.

Continued research into the mechanisms and efficacy of holistic practices, such as specific acupressure points or aromatherapy protocols, will further legitimize these tools within the medical model [29, 30]. Nurses and midwives collaborating on such research can bridge the evidence-practice gap more effectively.

12. Conclusion

Labor pain is a rite of passage that carries deep meaning and significant challenge. Its management is a test of a healthcare system's commitment to compassionate, competent, and woman-centered care. As this essay has demonstrated, no single profession holds all the keys to optimal pain management. The vigilant, technologically-adept surveillance of the nurse provides the safety and access to powerful pharmacological tools. The holistic, physiologically-focused, and empowering support of the midwife activates the woman's innate capacities and provides a robust arsenal of non-pharmacological strategies. It is in the intentional, respectful, and skillful integration of these two perspectives that a truly comprehensive approach is born.

Their joint contribution creates a continuous spectrum of care, from the simplest act of holding a hand to the complex management of regional anesthesia. It ensures that the woman's physical safety and her emotional journey are held in equal regard. It allows for flexible, responsive care that can adapt from supporting a natural, unmedicated birth to managing a highly technological one with equal compassion. The challenges to this collaboration are real but not insurmountable. Through interprofessional education, thoughtful model design, and courageous leadership, healthcare systems can foster environments where nurses and midwives practice not in parallel, but in partnership. In doing so, they honor the complexity of birth and fulfill their shared mandate: to safeguard not only the physical outcome of mother and child but also the profound human experience of bringing new life into the world. The management of labor pain, therefore, stands as a powerful testament to what can be achieved when professionals unite their expertise in the service of a single, transformative goal.

Author Statements:

- **Ethical approval:** The conducted research is not related to either human or animal use.
- **Conflict of interest:** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper
- **Acknowledgement:** The authors declare that they have nobody or no-company to acknowledge.
- **Author contributions:** The authors declare that they have equal right on this paper.
- **Funding information:** The authors declare that there is no funding to be acknowledged.
- **Data availability statement:** The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

References

1. Jones L, Othman M, Dowswell T, Alfirevic Z, Gates S, Newburn M, et al. Pain management for women in labour: an overview of systematic reviews. Cochrane Database of Systematic Reviews. 2012;(3):CD009234.
2. O'Reilly M, Parker N. "Unsatisfactory saturation": a critical exploration of the notion of saturated sample sizes in qualitative research. Qualitative Research. 2013;13:190–197.
3. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care. 2007;19:349–357.

4. Smith LA, Burns E, Cuthbert A. Parenteral opioids for maternal pain management in labour. Cochrane Database of Systematic Reviews. 2018.
5. Adams J, Frawley J, Steel A, Broom A, Sibbritt D. Use of pharmacological and non-pharmacological labour pain management techniques and their relationship to maternal and infant birth outcomes: examination of a nationally representative sample of 1835 pregnant women. Midwifery. 2015;31:458–463.
6. Ramasamy P, Kwena A, Emarah A, Knowledge KS. Attitude, practice and barriers to educational implementation of non-pharmacological pain management during Labor in selected hospitals. Central African Journal of Public Health. 2018;4:20–26.
7. Ismail S. Labor analgesia: an update on the effect of epidural analgesia on labor outcome. Journal of Obstetric Anaesthesia and Critical Care. 2013;3:70.
8. Labor S, Maguire S. The pain of labour. Reviews in Pain. 2008;2:15–19.
9. Kamalifard M, Shahnazi M, Sayyah Melli M, Allahverdizadeh S, Toraby S, Ghahvechi A. The efficacy of massage therapy and breathing techniques on pain intensity and physiological responses to labor pain. Journal of Caring Sciences. 2012;1(2):73–78.
10. Whitburn LY, Jones LE, Davey MA, Small R. The meaning of labour pain: how the social environment and other contextual factors shape women's experiences. BMC Pregnancy and Childbirth. 2017;17(1):157.
11. Johansson M, Fenwick J, Premberg A. A meta-synthesis of fathers' experiences of their partner's labour and the birth of their baby. Midwifery. 2015;31:9–18.
12. Othman M, Jones L, Neilson JP. Non-opioid drugs for pain management in labour. Cochrane Database of Systematic Reviews. 2012;(7):CD009223.
13. Klomp T, de Jonge A, Hutton EK, Hers S, Lagro-Janssen ALM. Perceptions of labour pain management of Dutch primary care midwives: a focus group study. BMC Pregnancy and Childbirth. 2016;16:6.
14. Shetty J, Vishalakshi A, Pandey D. Labour analgesia when epidural is not a choice: tramadol versus Pentazocine. ISRN Obstetrics and Gynecology. 2014;2014:930349.
15. McCauley M, Actis Danna V, Mrema D, van den Broek N. "We know it's labour pain, so we don't do anything": healthcare provider's knowledge and attitudes regarding the provision of pain relief during labour and after childbirth. BMC Pregnancy and Childbirth. 2018;18:444.
16. Aune I, Amundsen HH, Skaget Aas LC. Is a midwife's continuous presence during childbirth a matter of course? Midwives' experiences and thoughts about factors that may influence their continuous support of women during labour. Midwifery. 2014;30:89–95.
17. Khaskheli M, Baloch S. Subjective pain perceptions during labour and its management. Journal of the Pakistan Medical Association. 2010;60:473–476.
18. Bailey J. First steps in qualitative data analysis: transcribing. Family Practice. 2008;25:127–131.
19. Mestrović AH, Bilić M, Loncar LB, Micković V, Loncar Z. Psychological factors in experience of pain during childbirth. Collegium Antropologicum. 2015;39:557–565.
20. Pilewska-kozak AB, Klaudia P, Celina Ł. Non-pharmacological methods of pain relief in Labor in the opinion of Puerperae – a preliminary report. Annals of Women's Health. 2017:1–4.
21. Ghana Health Service. Ghana health facts and figures 2017. 2018.
22. Vargens OM, Silva AC, Progianti JM. Non-invasive nursing technologies for pain relief during childbirth—The Brazilian nurse midwives' view. Midwifery. 2013;29(11):e99–e106.
23. Sharpe EE, Arendt KW. Epidural Labor Analgesia and Maternal Fever. Clinical Obstetrics and Gynecology. 2017;60(2):365–374.
24. Beebe KR. Hypnotherapy for Labor and Birth. Nursing for Women's Health. 2014;18(1):48–59.
25. Smith CA, Levett KM, Collins CT, Armour M, Dahlen HG, Suganuma M. Relaxation techniques for pain management in labour. Cochrane Database of Systematic Reviews. 2018(3).
26. Lundgren I, Dahlberg K. Midwives' experience of the encounter with women and their pain during childbirth. Midwifery. 2002.
27. Brailey S, Luyben A, van Teijlingen E, Women FL. Midwives, and a medical model of maternity Care in Switzerland. International Journal of Childbirth. 2017;7:117–125.
28. Connelly LM. Trustworthiness in qualitative research. Medsurg Nursing. 2016;25:435–437.
29. Atwa AE, Shoeb MI, Sundus B. Non-pharmacological pain management. Journal of the Middle East and North Africa Sciences. 2015;1:7–25.
30. Almushait M, Ghani RA. Perception toward non-pharmacological strategies in relieving Labor pain: an analytical descriptive study. Journal of Natural Sciences Research. 2014;4.