

# Rest And Restore Postnatal Pain Management Framework “Midwifery Led Care”

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## Abstract:

**Background:** The postnatal period is marked by significant physiological and psychological adjustments for women, often accompanied by pain that can impede recovery and well-being. Traditional pain management relying on pharmacological interventions has limitations, prompting the exploration of non-pharmacological alternatives. Midwifery care, with its woman-centered and holistic philosophy, is uniquely positioned to implement such approaches.

**Materials and Methods:** The framework categorizes relaxation techniques into physical modalities (massage, TENS, hydrotherapy, positioning, thermal therapies, breathing), psychological techniques (relaxation techniques, VR, music, distraction), and complementary/alternative approaches (hypnosis, religion/health integration, support therapy, aromatherapy). The physiological underpinnings of relaxation and support are explored, highlighting the autonomic nervous system, hormonal mechanisms (oxytocin, endorphins, cortisol reduction), and musculoskeletal benefits. The role of family support and Kangaroo Mother Care in enhancing relaxation and well-being is also discussed.

**Results:** Integrating the "Rest and Restore" framework into midwifery practice offers multifaceted benefits. For postnatal mothers, this includes reduced pain perception, decreased reliance on medication, lowered stress and anxiety, improved physical recovery, hormonal balance, enhanced mood, increased self-efficacy, and strengthened mother-infant bonding. For newborns, benefits encompass improved thermoregulation, cardiorespiratory and blood glucose stability, enhanced sleep, improved brain development, and secure attachment. Families experience stronger partner involvement and overall improved well-being.

**Conclusion:** The "Rest and Restore" framework, incorporating diverse relaxation and supportive techniques within midwifery-led care, presents a holistic and effective approach to postnatal pain management. This framework empowers women, promotes physiological and psychological restoration, and enhances the postnatal experience for mothers, newborns, and families, aligning with the core values of midwifery practice.

**Key Word:** Postnatal; Pain; Midwifery care; Rest; Relaxation techniques

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## I. Introduction

The postnatal period, often referred to as the fourth trimester, is a crucial time of transition and profound physiological and psychological adjustments for women following childbirth [1]. While widely acknowledged as a period of joy and bonding, it is also frequently accompanied by physical discomfort and pain. Postnatal pain, encompassing perineal pain, uterine cramps (afterpains), musculoskeletal aches, and breastfeeding-related discomfort, affects a significant proportion of women in the weeks and months following birth [2, 3]. This pain, if unmanaged, can negatively impact a woman's physical recovery, emotional well-being, infant care, and overall quality of life [4].

Midwifery, at its core, is grounded in a woman-centered and holistic approach to care [5]. Midwives are trained to understand the physiological processes of childbirth and the postpartum period, and to empower women to navigate these experiences with informed choices and support [6]. This philosophy naturally aligns with non-pharmacological pain management strategies that prioritize the woman's own resources and coping mechanisms. Relaxation techniques, ranging from simple breathing exercises to guided imagery and progressive muscle relaxation, offer a safe, accessible, and empowering approach to pain management that resonates deeply with the principles of midwifery care [7].

Traditional approaches to postnatal pain management often rely on pharmacological interventions such as analgesics and anti-inflammatory medications [8]. While these medications can be effective in alleviating pain, they are not without limitations. Concerns regarding potential side effects, particularly for breastfeeding mothers

and their infants, coupled with a growing preference for non-pharmacological approaches, have prompted a search for alternative and complementary strategies [9,10]. Furthermore, the individualised and holistic philosophy of midwifery care positions midwives uniquely to offer and implement such alternative approaches.

This Introduces the concept of midwifery-led interventions focused on relaxation as a powerful tool for managing postnatal pain. It explores the rationale behind integrating relaxation techniques within midwifery practice, emphasizing the "Rest and Restore" paradigm. This paradigm acknowledges the inherent need for rest and recovery in the postnatal period, moving beyond simply alleviating pain symptoms to actively promoting holistic well-being and the body's natural healing processes.

**Midwifery-led relaxation interventions for postnatal pain management** will delve into the theoretical underpinnings of relaxation techniques, explore the current evidence base supporting their use in the postnatal period, and highlight the specific role of midwives in facilitating and promoting "Rest and Restore" for women experiencing postnatal pain.

**The "Rest and Restore" framework, as applied to midwifery practice for postnatal pain management, emphasizes on factors:**

<b>Rest and restore framework</b>				
<p><b>Physiological Restoration</b></p> <p>Relaxation techniques can directly influence the physiological mechanisms of pain perception. By reducing muscle tension, lowering heart rate and blood pressure, and modulating the stress response, relaxation can interrupt the pain cycle and promote the body's natural analgesic systems [11].</p>	<p><b>Psychological Well-being:</b></p> <p>Postnatal pain is often intertwined with emotional and psychological factors such as anxiety, fatigue, and sleep deprivation [12]. Relaxation techniques can address these interconnected aspects, fostering a sense of calm, reducing anxiety, and improving sleep quality, all of which contribute to enhanced pain tolerance and overall well-being.</p>	<p><b>Empowerment and Self-Efficacy:</b></p> <p>Learning and practicing relaxation techniques empowers women to actively participate in their own pain management. This sense of control and self-efficacy can be particularly crucial in the postnatal period, contributing to a positive sense of self and maternal confidence [13].</p>	<p><b>Accessibility and Sustainability:</b></p> <p>Relaxation techniques generally low cost, easily accessible, and can be integrated into daily routines. This makes them a sustainable and equitable approach to postnatal pain management, particularly in resource-limited settings.</p>	<p><b>Complementary and Alternative Approaches:</b></p> <p>Encompass a wide range of practices and therapies that are used alongside or instead of conventional medical treatments. In the context of midwifery and childbirth, these approaches can enhance birthing experience, promote maternal and infant well-being, and address various physical and emotional needs.</p>

**Table no-1.0**

**Relaxation Techniques in Midwifery Practice for Postnatal Mothers: Rest and Restore Framework**

Following the initial recommendation for prioritizing relaxation in postnatal pain management, this section will explore specific relaxation techniques that midwives can readily incorporate into their clinical practice to support postpartum mothers. These techniques are consistent with the "Rest and Restore" approach, which aims to enable women to utilize their inherent ability to relax and promote healing.

Midwives play a crucial role in educating and guiding women in these techniques, fostering self-efficacy and promoting a sense of calm and control during a transformative life phase [14]. These techniques are not only beneficial for pain management but also contribute to overall well-being, stress reduction, and enhanced mother-infant bonding [15].

Here are several key relaxation techniques applicable in midwifery practice:

**Categorization of Relaxation and Supportive Approaches in Midwifery Practice**

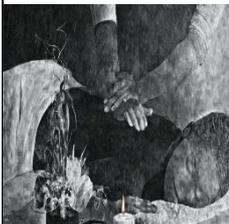
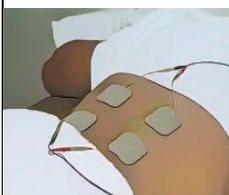
To effectively utilize relaxation and supportive approaches in midwifery practice, it's helpful to categorize them based on their primary mechanism of action and the level of support they provide. This

categorization can assist midwives in choosing appropriate techniques for different stages of pregnancy, labour, and postpartum, and for individual women's needs and preferences.

Here's a categorization framework for relaxation and supportive approaches in midwifery practice, aligning with the "Rest and Restore" paradigm.

**Physical Modalities**

There are several physical methods listed under relaxation and supportive approaches used in midwifery practices. The management of pain may involve a variety of techniques, such as massage therapy, targeted pressure application to specific anatomical points, transcutaneous electrical nerve stimulation (TENS), hydrotherapy (including water immersion), thermotherapy (utilizing heat and cold), respiratory exercises, postural adjustments, and physical activity. The sub-types of each method, mechanism of action, and perceived benefits, are all summarized in **Table no- 1.1**

Methods	Sub Types	Mechanism of action	Benefit	Images
Massage	<ul style="list-style-type: none"> <li>• Vibrating</li> <li>• Stroking</li> <li>• Effleurage</li> </ul>	<ul style="list-style-type: none"> <li>• Gentle massage or counter-pressure applied to specific areas can effectively alleviate discomfort and may stimulate the release of endorphins, endogenous hormones known for their analgesic effects.</li> </ul>	<ul style="list-style-type: none"> <li>• Although the intervention effectively reduced pain scores, it did not alter the nature of the pain experienced or the duration of labor.</li> <li>• The integration of oil application with massage therapy resulted in a reduction of pain intensity and duration, alongside an enhanced level of patient satisfaction. [16,17]</li> </ul>	
Pressure on precise anatomical location	<ul style="list-style-type: none"> <li>• Acupressure</li> <li>• Acupuncture</li> </ul>	<ul style="list-style-type: none"> <li>• Applying pressure on a precise anatomical location potentially induces relaxation and reduces stress.</li> <li>• Non-noxious stimuli can activate spinal cord mechanisms that inhibit the transmission of pain signals.                             <ul style="list-style-type: none"> <li>• Triggering acupuncture spots sends signals to the brain to release endorphins.</li> <li>• A regulation of oxytocin hormones.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Acupressure may improve women’s satisfaction and reduce pain and duration. [18]</li> </ul>	
Transcutaneous Electrical Nerve Stimulation (TENS)	<ul style="list-style-type: none"> <li>• Convention TENS</li> <li>• Intense TENS</li> <li>• Burst mode TENS</li> <li>• Modulated TENS</li> </ul>	<ul style="list-style-type: none"> <li>• Applying low-intensity electrical pulses to targeted regions of the body via electrodes affixed to the skin.</li> <li>• It inhibits the pain signals transmission to the nervous system.</li> </ul>	<ul style="list-style-type: none"> <li>• A significant reduction in pain intensity and improved patient satisfaction were observed, with supporting evidence of low quality. [19,20]</li> </ul>	
Water immersion	<ul style="list-style-type: none"> <li>• Cold water</li> <li>• Hot water</li> <li>• Alternating hot/cold water bathing</li> </ul>	<ul style="list-style-type: none"> <li>• Immersing in the bath or utilizing a birthing pool can induce relaxation, diminish pain perception, and facilitate smoother movement during childbirth.</li> </ul>	<ul style="list-style-type: none"> <li>• The patient experienced notable improvements in both physical and psychological well-being, accompanied by a reduced requirement for analgesia. [21]</li> </ul>	

Positioning and movement	<ul style="list-style-type: none"> <li>• Changing positions frequently, such as walking, squatting, and positioning</li> <li>• Birthing ball rocking</li> </ul>	<ul style="list-style-type: none"> <li>• Helps manage pain by utilizing gravity and promoting optimal fetal positioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Effective in reducing pain and duration of labor.</li> <li>• Upright position and free mobility reduce pain, labor duration and improve women’s satisfaction. [22,23]</li> </ul>	
Heat therapy	<ul style="list-style-type: none"> <li>• Warm pack and towels</li> <li>• Hot water bags</li> <li>• Warm shower</li> <li>• Thermal and infrared belt</li> </ul>	<ul style="list-style-type: none"> <li>• Administration of heat to a specific region experiencing pain enhances blood circulation, induces muscle relaxation, and alleviates pain perception.</li> </ul>	<p>Evidence confirmed an effective reduction in pain intensity and labor duration.</p> <p>Significant reduction in post-natal pain. [24]</p>	
Cold therapy	<ul style="list-style-type: none"> <li>• Ice packs</li> <li>• Ice massage</li> </ul>	<ul style="list-style-type: none"> <li>• Utilization of cold packs or ice to induce numbness in a specific area, therapy mitigating inflammation and offering temporary pain alleviation.</li> </ul>	<ul style="list-style-type: none"> <li>• Significant reduction in pain intensity and duration. [25]</li> </ul>	
Breathing techniques	<ul style="list-style-type: none"> <li>• Deep, slow, and pattern breathing.</li> </ul>	<ul style="list-style-type: none"> <li>• Effective in diverting attention from pain and facilitating a state of relaxation.                             <ul style="list-style-type: none"> <li>• It activates the parasympathetic nervous system, promoting relaxation and reducing tension.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Effective in reduction of pain, added to a shorter labour duration. [26]</li> </ul>	

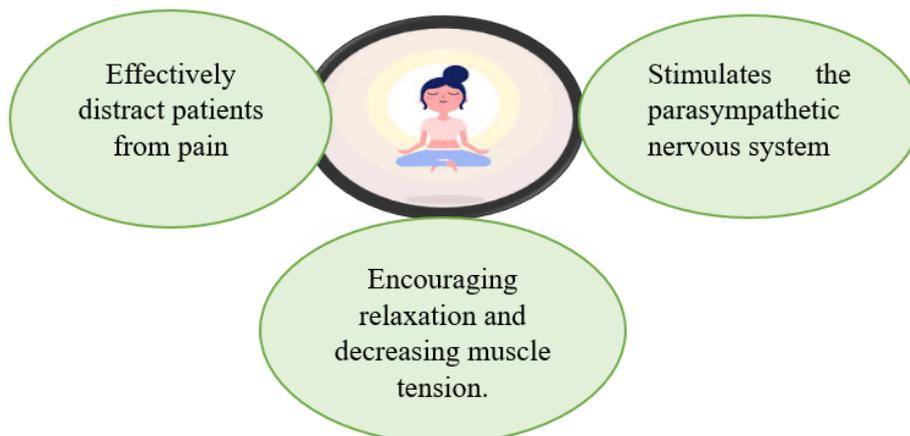


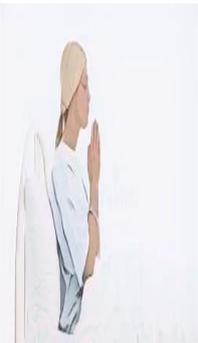
Figure 1.0- shows the effect of breathing techniques after childbirth

**Psychological Techniques**

Cognitive Behavioral Therapy (CBT) focuses on recognizing and changing dysfunctional thought patterns, emotional responses, and behaviors. In pain management, CBT helps patients develop a sense of agency over their pain, learn effective coping mechanisms, and improve self-esteem. While some studies have shown that CBT can reduce the psychological components of labor pain and improve patient satisfaction, the need for analgesic medication may persist. Conversely, other research suggests that CBT techniques can significantly decrease pain intensity and shorten the duration of labor. CBT empowers individuals to actively manage their pain, develop adaptive coping strategies, and foster a positive self-image. The main methods of CBT included in **Table no- 1.2:**

- Relaxation techniques;
- Virtual reality (VR);
- Music;
- Distraction technique

Methods	Sub Types	Mechanism of action	Benefits	Images
Relaxation technique	<ul style="list-style-type: none"> <li>• Relaxation, Yoga, and music</li> <li>• Mindfulness and audion-analgesia</li> </ul>	<ul style="list-style-type: none"> <li>• Progressive muscle relaxation, guided imagery, and visualization are effective in mitigating anxiety and fostering tranquillity.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in pain intensity. Empowers women with a sense of control.</li> <li>• Improves satisfaction with the birth experience. [27,28]</li> </ul>	
Virtual reality (VR)	<ul style="list-style-type: none"> <li>• Interactive VR game</li> <li>• VR meditation</li> <li>• VR guided meditation</li> <li>• VR mindfulness</li> </ul>	<ul style="list-style-type: none"> <li>• Modulation of pain perception can be achieved through interventions targeting psychological factors.</li> <li>• Distraction which reduces the perception of pain.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces pain intensity and anxiety during childbirth.</li> <li>• Enhanced satisfaction with the birth experience. [29]</li> </ul>	
Music	-	<ul style="list-style-type: none"> <li>• Engagement with music can alter pain perception and modulate neuronal activity within the central nervous system.</li> <li>• Increases pain tolerance and lowers pain intensity.</li> </ul>	<ul style="list-style-type: none"> <li>• They experience natural delivery with reduced stress and decreased need for pharmacologic intervention. [30]</li> </ul>	
Distraction	<ul style="list-style-type: none"> <li>• Counting numbers</li> <li>• Remembering poetry, or jokes</li> </ul>	<ul style="list-style-type: none"> <li>• Minds occupied by excitement are distracted from the excitement of the pain senses.</li> <li>• The technique reduces the pain effect on the CNS and nerve transmitters</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in labor pain and stress. [31]</li> </ul>	

Methods	Sub Types	Mechanism of Action	Benefit	Images
Hypnosis	<ul style="list-style-type: none"> <li>Natural hypnosis</li> <li>Self-hypnosis</li> <li>Stage hypnosis</li> <li>Hypnotherapy</li> </ul>	<ul style="list-style-type: none"> <li>Modulates pain intensity caused in the primary somatosensory cortex.</li> <li>Relaxes and distracts attention from the pain sensation.</li> </ul>	<ul style="list-style-type: none"> <li>Reduces net use of analgesia during childbirth. [32]</li> </ul>	
Integration of religion/health and well-being	<ul style="list-style-type: none"> <li>Praying,</li> <li>Reciting Geeta, Quran, bible</li> <li>Fasting</li> </ul>	<ul style="list-style-type: none"> <li>Distract and inhibit the pain perception.</li> </ul>	<ul style="list-style-type: none"> <li>It efficiently reduced pain and improved the score of pain behaviors. [33]</li> </ul>	
Support therapy	<ul style="list-style-type: none"> <li>Emotional support</li> <li>Advocacy</li> <li>Informational support</li> </ul>	<ul style="list-style-type: none"> <li>Reduces stress and anxiety by providing reassurance and empathy, thus decreasing pain perception.</li> <li>Supports women's autonomy and decision making, promoting a feeling of control and confidence</li> </ul>	<ul style="list-style-type: none"> <li>Reduced perception of pain via reduced stress and anxiety</li> <li>Decreased use of analgesics</li> <li>Increased overall satisfaction. [34]</li> </ul>	
Aromatherapy	<p>Essential oils may be given as:</p> <ul style="list-style-type: none"> <li>Massage into the skin,</li> <li>In a warm bath,</li> <li>Diffused into the air using a diffuser</li> </ul>	<ul style="list-style-type: none"> <li>Limbic system stimulation; releases serotonin and endorphins. Thus, it reduces anxiety and tension, leading to lower pain perception.</li> <li>Enhancing the body's natural production of stress-reducing compounds, for example, by lowering cortisol levels and/or elevating serotonin levels.</li> <li>Certain essential oils, like rosemary, may exert direct analgesic effects.</li> </ul>	<ul style="list-style-type: none"> <li>Trend decreases in pain</li> <li>Trend decreases in anxiety during and after labor. [35]</li> </ul>	

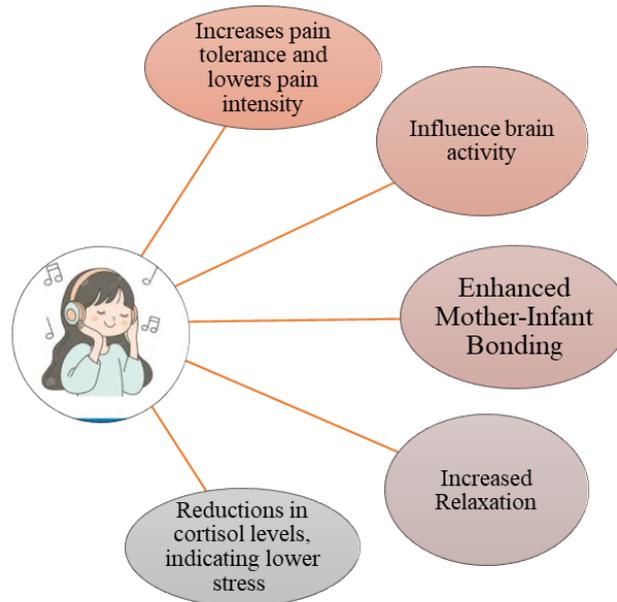


Figure 1.1 shows the effect of music after childbirth

### Complementary and Alternative Approaches

Over the past decade, there has been a growing scholarly focus on literature examining the role of Complementary and Alternative Approaches (CAA) in mitigating pain during childbirth and in the postnatal period. The use of CAA is more common among women of reproductive age. Complementary and Alternative Medicine is a term employed by the U.S. National Centre for Complementary and Integrative Health to denote a range of practices that can be utilised in conjunction with conventional and established medical care (complementary) or as a substitute for it (alternative). An in-depth analysis of complementary and alternative approaches concerning the mechanism of action, perceived benefit, is summarised in **Table no- 1.3**.



Figure. 1.2- shows the effect of aromatherapy after childbirth

### Integrating Categorization into Midwifery Practice:

Midwives can use this categorization to:

- **Assess individual needs:** Identify which categories of relaxation and support are most relevant to a woman's specific needs and challenges at different stages.
- **Develop individualized care plans:** Tailor relaxation and supportive approaches to each woman's preferences, cultural background, and resources.
- **Active Listening and Empathetic Communication:** Providing a safe and non-judgmental space for women to express their concerns, fears, and emotions.
- **Reassurance and Encouragement:** Offering positive reinforcement, building confidence, and normalizing experiences.
- **Counselling and Emotional Support:** Providing emotional support and guidance to address anxieties, fears, and emotional challenges related to pregnancy, birth, and parenting.
- **Addressing Fears and Anxieties:** Openly discussing and addressing specific fears and anxieties related to childbirth and parenting, providing evidence-based information and coping strategies.

- **Birth Planning and Informed Choice Discussions:** Supporting women in creating birth plans that reflect their preferences and values, ensuring informed decision-making.
- **Breastfeeding Support and Education:** Providing comprehensive breastfeeding education and practical support to promote successful breastfeeding and reduce stress.
- **Postnatal Care and Guidance:** Offering thorough postnatal care, including physical and emotional well-being assessments, and providing guidance on self-care, infant care, and accessing resources.
- **Practical Assistance and Referrals:** Connecting women with relevant resources, support groups, and other healthcare professionals as needed.
- **Partner Involvement and Education:** Encouraging partner involvement and providing education to partners on how to support the woman during pregnancy and postpartum.
- **Family and Social Network Support:** Encouraging and facilitating the involvement of family and social support networks to provide ongoing support and practical assistance.
- **Educate women about options:** Explain the different categories of relaxation and support and empower women to choose techniques that resonate with them.
- **Evaluate effectiveness:** Reflect on the effectiveness of different categories and techniques for individual women and adapt practice accordingly.

By understanding and utilizing this categorization, midwives can effectively integrate a wide range of relaxation and supportive approaches into their practice, promoting the "Rest and Restore" paradigm and enhancing the well-being of women throughout their journey to motherhood.

### **The Physiology of Relaxation and Support in Postnatal: Midwifery Applications for Rest and Restore**

Understanding the physiological mechanisms underpinning relaxation and support is crucial for midwives to effectively implement "Rest and Restore" approaches in their practice. These approaches are not merely about comfort; they have profound impacts on a woman's physiology in postpartum, influencing pain perception, stress response, hormonal balance, and overall well-being.

#### **I. Physiology of Relaxation:**

Relaxation techniques primarily work by influencing the **autonomic nervous system (ANS)**, shifting the balance from the **sympathetic nervous system (SNS) – the "fight or flight" response** – towards the **parasympathetic nervous system (PNS) – the "rest and digest" response** [36].

- **Neurological Mechanisms:**

- **Reduced Sympathetic Activity:** Relaxation techniques like deep breathing, meditation, and progressive muscle relaxation reduce the activity of the SNS. This leads to decreased release of stress hormones like **cortisol and adrenaline** [37].
- **Increased Parasympathetic Activity:** Stimulation of the PNS through relaxation increases the release of **acetylcholine**, which slows heart rate, lowers blood pressure, promotes digestion, and induces a state of calm [38].
- **Brainwave Changes:** Relaxation practices can shift brainwave activity from faster beta waves (associated with alertness and stress) to slower alpha and theta waves (associated with relaxation, calmness, and even meditative states) [39].

- **Hormonal Mechanisms:**

- **Endorphin Release:** Relaxation techniques, particularly those involving movement and touch like massage and gentle exercise, can stimulate the release of **endorphins**, the body's natural pain relievers and mood elevators [40].
- **Oxytocin Release:** Relaxation, especially in a supportive environment with positive social interaction and touch, promotes the release of **oxytocin**, often called the "love hormone." Oxytocin plays a crucial role in reducing stress, promoting bonding, and has analgesic properties [41].
- **Reduced Cortisol Levels:** As mentioned, relaxation counteracts the stress response, leading to lower levels of cortisol, the primary stress hormone. Chronic high cortisol is detrimental to both maternal and fetal health [42].

- **Musculoskeletal Mechanisms:**

- **Muscle Tension Reduction:** Techniques like progressive muscle relaxation and massage directly address muscle tension, reducing pain and discomfort associated with muscle stiffness and spasms [43].
- **Improved Circulation:** Relaxation promotes vasodilation, improving blood flow and oxygen delivery to muscles and tissues, aiding in pain relief and healing [44].

#### **II. Physiology of Support:**

Support, encompassing emotional, practical, and informational assistance, also has significant physiological impacts, primarily by buffering the stress response and enhancing well-being.

- **Neurological and Hormonal Mechanisms (Overlapping with Relaxation):**

- **Sense of Safety and Security:** Supportive environments, particularly in labour, reduce feelings of fear and anxiety, thereby minimizing SNS activation and promoting PNS dominance. This mirrors the neurological effects of relaxation techniques.
- **Oxytocin Release (Enhanced):** Social support, positive interactions, and a sense of being cared for strongly stimulate oxytocin release. This is especially potent during labour and postpartum, facilitated by continuous midwifery care and doula support [45].
- **Reduced Stress Response (Cortisol Buffering):** Knowing one is supported reduces perceived stress and threat. This directly lowers cortisol levels and mitigates the negative physiological effects of chronic stress [46].
- **Psychological and Emotional Mechanisms (Influencing Physiology):**
- **Increased Self-Efficacy and Control:** Support empowers women, fostering a sense of control over their experiences, particularly in labour. This reduces anxiety and improves coping mechanisms, positively impacting physiological responses to pain and stress [47].
- **Improved Mood and Reduced Anxiety/Depression Risk:** Emotional support and positive social interactions are crucial for mental well-being. They buffer against negative emotions, reducing the risk of anxiety and postpartum depression, which have significant physiological consequences [48].

### III. Midwifery Applications in Postnatal:

Understanding these physiological mechanisms allows midwives to strategically apply relaxation and supportive approaches in the postnatal period:

- **Physiological Benefits:** Pain management (perineal pain, afterpains, breastfeeding discomfort), faster physical recovery, improved sleep, reduced risk of postnatal depression and anxiety, enhanced breastfeeding success (oxytocin for milk let-down), improved mother-infant bonding.
- **Midwifery Practices:**
- **Education:** Teach relaxation techniques (breathing, PMR, guided imagery) for self-management of pain, discomfort and stress.
- **Postnatal Pain Management:** Teach relaxation techniques for managing postpartum pain, reducing reliance on pharmacological analgesia where possible.
- **Promote Rest and Recovery:** Emphasize the importance of rest, nutrition, and gentle activity for physical recovery.
- **Create a Calm Environment:** Ensure relaxation techniques are conducted in a relaxed and unhurried manner.
- **Emotional Support and Screening for PPD:** Provide ongoing emotional support, normalize postpartum experiences, and screen for postnatal depression and anxiety.
- **Breastfeeding Support:** Provide skilled breastfeeding support, recognizing the role of relaxation and oxytocin in successful breastfeeding.
- **Practical Advice and Resources:** Offer practical advice on self-care, and infant care, and connect women with relevant support networks.
- **Promote a Healthy Lifestyle:** Encourage gentle exercise, a healthy diet, and adequate sleep, all contributing to physiological relaxation and stress reduction.
- **Home Visits and Continuity of Care:** Provide ongoing support in the postpartum period through home visits and continuity of care, fostering a sense of security and reducing isolation.

### Application of Family Support and Kangaroo Mother Care (KMC) in Midwifery Relaxation Practices

Extending the "Rest and Restore" paradigm, family support, particularly through birth companions, and Kangaroo Mother Care (KMC) are powerful and inherently relaxing and supportive approaches that midwives can actively promote and integrate into their practice. These are not simply add-ons, but core elements of woman-centred care that amplify the benefits of relaxation for mothers and newborns.

#### I. Family Support as Birth Companion: Enhancing Relaxation and Well-being in Postnatal

A birth companion, often a partner, family member, or friend, plays a vital role in providing continuous emotional, physical, and informational support during and after birth [49]. This support directly contributes to a woman's relaxation and overall well-being through several mechanisms:

- **Reduced Anxiety and Fear:** The presence of a trusted and loving companion provides a sense of security and safety, significantly reducing anxiety and fear during labour [50]. This lowered anxiety minimizes the stress response, allowing the physiological processes of labour to unfold more efficiently and comfortably.
- **Emotional Reassurance and Encouragement:** Birth companions offer constant reassurance, encouragement, and positive affirmations, boosting a woman's confidence and coping abilities. This emotional bolstering is crucial for maintaining a relaxed and positive mindset throughout labour.

- **Physical Comfort Measures:** Birth companions can actively participate in providing physical comfort measures that directly promote relaxation, such as:
  - **Massage and Touch:** Providing back massage, counter-pressure, hand holding, and comforting touch, all of which stimulate oxytocin release and reduce pain perception [51].
  - **Cool/Warm Compresses:** Applying compresses to the forehead, neck, or back for temperature regulation and comfort.
  - **Assistance with Position Changes:** Helping the woman move and find comfortable positions, reducing muscle tension and promoting labour progress.
  - **Hydrotherapy Support:** Assisting the woman in and out of the shower or birth pool and providing support within the water.
- **Facilitation of Relaxation Techniques:** Birth companions can be taught by midwives to actively guide and support the woman in using relaxation techniques:
  - **Reminding and Guiding Breathing:** Cueing and encouraging rhythmic breathing patterns during contractions.
  - **Leading Guided Imagery:** Reading or verbally guiding the woman through visualization scripts.
  - **Creating a Calming Environment:** Adjusting lighting, music, and temperature to create a relaxing atmosphere.
- **Advocacy and Communication:** Birth companions can act as advocates, communicating the woman's wishes and preferences to the midwifery team, ensuring her voice is heard and respected, further contributing to a sense of control and relaxation.

#### **Midwifery Application in Promoting Birth Companions:**

- **Antenatal Education for Partners:** Midwives should actively involve partners in antenatal education, specifically teaching them comfort measures, relaxation techniques, and their crucial role as birth companions.
- **Encouraging Partner Involvement:** Midwives should actively encourage women to choose a birth companion and emphasize the benefits of continuous support.
- **Creating a Partner-Friendly Environment:** Birth settings should be designed to accommodate and welcome birth companions, providing comfortable seating and facilities for them.
- **Integrating Partners into the Care Team:** Midwives should view birth companions as valuable members of the care team, collaborating with them to provide holistic support to the woman.
- **Addressing Barriers to Birth Companions:** Midwives should be aware of potential barriers (e.g., lack of partner availability, cultural norms) and explore alternative support options if needed (e.g., doula support).

#### **II. Kangaroo Mother Care (KMC): Embodiment of Rest and Restore for Mother and Newborn**

Kangaroo Mother Care (KMC), involving skin-to-skin contact between mother and newborn, is a powerful intervention that embodies the principles of "Rest and Restore" for both mother and baby, promoting relaxation, regulation, and well-being [52].

- **Physiological Regulation for the Newborn:**
  - **Thermoregulation:** Skin-to-skin contact provides optimal warmth for the newborn, reducing cold stress and energy expenditure, promoting physiological stability.
  - **Cardiorespiratory Stability:** KMC helps regulate the newborn's heart rate and breathing, leading to more stable vital signs and reduced stress.
  - **Blood Glucose Stability:** KMC assists in maintaining stable blood glucose levels in newborns, especially crucial for preterm and low birth weight infants.
  - **Improved Sleep and Reduced Crying:** Newborns in KMC experience deeper and more restful sleep and cry less, indicating reduced stress and improved regulation.
- **Physiological and Psychological Benefits for the Mother:**
  - **Oxytocin Release and Bonding:** Skin-to-skin contact profoundly stimulates oxytocin release in the mother, promoting bonding, maternal feelings, and relaxation [53].
  - **Reduced Stress and Anxiety:** The act of holding her baby skin-to-skin is inherently calming for the mother, reducing anxiety and promoting a sense of peace and connection.
  - **Pain Relief:** Oxytocin release and the close physical contact can have analgesic effects, helping mothers manage postpartum pain and discomfort.
  - **Enhanced Breastfeeding Success:** KMC facilitates early and frequent breastfeeding, promoting milk production and successful breastfeeding establishment due to proximity and hormonal influences.
  - **Increased Maternal Confidence:** KMC empowers mothers, especially those of preterm or vulnerable infants, fostering a sense of competence and control in caring for their baby.

### **Midwifery Application in Promoting and Facilitating KMC:**

- **Universal Promotion of KMC:** Midwives should promote KMC as a standard of care for all newborns, regardless of gestational age or birth weight, unless medically contraindicated.
- **Education and Demonstration:** Midwives should educate mothers and families about the benefits and techniques of KMC, providing clear demonstrations and addressing any concerns.
- **Facilitating Immediate and Prolonged KMC:** Midwives should facilitate immediate skin-to-skin contact after birth, whenever possible and safe, and encourage prolonged and frequent KMC throughout the postpartum period.
- **Creating a KMC-Friendly Environment:** Postnatal wards and home care settings should be conducive to KMC, providing comfortable seating, privacy, and support for mothers to practice KMC.
- **Overcoming Barriers to KMC:** Midwives should proactively identify and address potential barriers to KMC (e.g., medical procedures, maternal fatigue, cultural beliefs) and find creative solutions to facilitate KMC.
- **Supporting KMC by Partners and Family Members:** While mother-infant KMC is primary, midwives should also educate and encourage partners and other family members to practice KMC when appropriate, extending the benefits of skin-to-skin contact.

### **Integration into Holistic Midwifery Care:**

Both family support as birth companions and KMC are integral components of holistic midwifery care. They are not isolated interventions but are deeply intertwined with the principles of woman-centeredness, physiological birth, and the "Rest and Restore" paradigm. Midwives, by actively promoting and facilitating these approaches, create a supportive and nurturing environment that optimizes relaxation, well-being, and positive outcomes for both mothers and newborns. This holistic integration reinforces the midwife's role as a facilitator of natural processes and a champion of women's innate capacity for a healthy and fulfilling journey through motherhood.

### **Benefits of Relaxation and Supportive Approaches in Midwifery Practice: A Summary**

The integration of relaxation and supportive approaches within midwifery practice yields a wide range of benefits for mothers, newborns, and families across the pregnancy, and postpartum continuum. These benefits align with the "Rest and Restore" paradigm and contribute to improved physical, psychological, and emotional well-being.

Here's a summary of the key benefits:

#### ➤ **For Mothers in postnatal:**

##### **Physiological Benefits:**

- **Pain Management:**
  - Reduced perception of pain during postpartum (perineal pain, afterpains, musculoskeletal aches).
  - Decreased reliance on pharmacological pain relief methods.
  - Endorphin release, the body's natural pain reliever, is stimulated.
- **Reduced Stress and Anxiety:**
  - Lowered levels of stress hormones like cortisol and adrenaline.
  - Shift from sympathetic ("fight or flight") to parasympathetic ("rest and digest") nervous system dominance.
  - Reduced anxiety and fear in the postnatal period and parenting.
  - Improved stress coping mechanisms.
- **Improved Physical Health:**
  - Reduced muscle tension and improved comfort.
  - Lowered blood pressure and heart rate.
  - Improved sleep quality and reduced fatigue.
  - Enhanced circulation and oxygen delivery to tissues.
  - Faster physical recovery postpartum.
- **Hormonal Balance:**
  - Increased oxytocin release, promoting relaxation, bonding, and pain relief.
  - Regulation of stress hormones, supporting overall hormonal balance.

##### **Psychological and Emotional Benefits:**

- **Enhanced Well-being and Mood:**
  - Increased feelings of calm, peace, and relaxation.
  - Improved mood and reduced risk of anxiety and postpartum depression.
- **Increased Self-Efficacy and Control:**

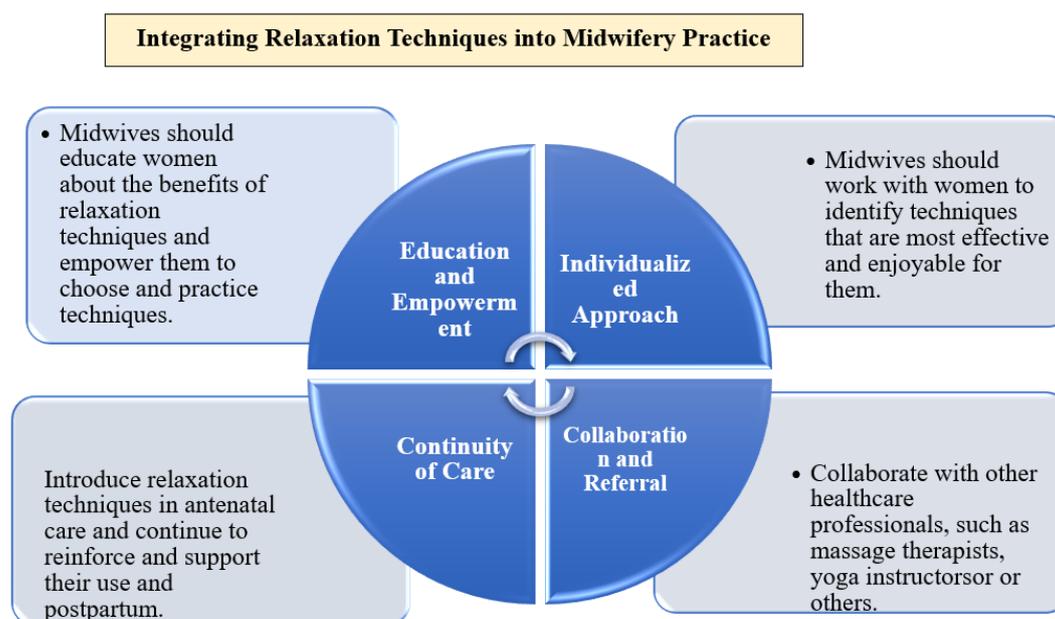
- Empowerment through learning and utilizing relaxation techniques.
- Enhanced sense of control over pain and the birth experience.
- Increased maternal confidence and self-belief in parenting abilities.
- **Improved Body Image and Self-Acceptance:**
- Relaxation techniques like guided imagery can promote positive body image and self-acceptance during the physical changes of pregnancy and postpartum.
- **Stronger Mother-Infant Bond:**
- Increased oxytocin and positive emotional state promote stronger bonding with the newborn.
- **For Newborns - Particularly through KMC and a Calm Maternal Environment:**

#### **Physiological Benefits:**

- **Improved Thermoregulation:**
- Stable body temperature maintained through skin-to-skin contact in KMC.
- Reduced risk of hypothermia and cold stress.
- **Cardiorespiratory Stability:**
- More regular and stable heart rate and breathing patterns.
- Reduced risk of respiratory distress.
- **Blood Glucose Stability:**
- Helps maintain stable blood sugar levels, crucial for preterm and vulnerable infants.
- **Improved Sleep and Reduced Crying:**
- Deeper and more restful sleep.
- Reduced crying and fussiness, indicating lower stress levels.
- **Enhanced Immune Function:**
- Early skin-to-skin contact and breastfeeding can support the development of the newborn's immune system.
- **Improved Brain Development:**
- Reduced stress and stable physiology support optimal brain development.

#### **Developmental and Emotional Benefits:**

- **Enhanced Bonding and Attachment:**
- Early and prolonged skin-to-skin contact promotes strong mother-infant bonding and secure attachment.
- **Improved Breastfeeding Success:**
- KMC facilitates early initiation and frequent breastfeeding.
- Promotes successful breastfeeding establishment and duration.
- **Reduced Stress and Improved Regulation:**
- A calm and supportive environment and KMC contribute to reduced stress and improved self-regulation in newborns.
- **Potential for Improved Long-Term Outcomes:**
- Evidence suggests that KMC and reduced maternal stress can have positive long-term impacts on child development and well-being.
- **For Families:**
- **Stronger Partner Involvement:**
- Encouraging birth companions strengthens partner roles and family bonds.
- **Improved Family Well-being:**
- Reduced maternal stress and improved maternal and infant health contribute to overall family well-being.
- **Positive Birth and Postpartum Experiences:**
- Relaxation and support contribute to more positive and fulfilling birth and postpartum experiences for the entire family



**Figure no 1.3**

By incorporating these diverse relaxation techniques into their practice, midwives can significantly enhance the well-being of mothers, promote natural pain management strategies, and truly embody the "Rest and Restore" paradigm, supporting women to thrive in their journey through motherhood.

## II. Discussion

The "Rest and Restore" framework presented in this study offers a paradigm shift in postnatal care, moving away from a purely medicalized, pharmacological approach toward a holistic, midwifery-led model. The postnatal period, or the "fourth trimester," is a time of profound vulnerability and physiological restructuring. Our findings suggest that by integrating physical, psychological, and complementary modalities, midwives can effectively mitigate pain while simultaneously fostering maternal-infant bonding and long-term well-being.

### The Synergy of Non-Pharmacological Interventions

The categorization of techniques into physical, psychological, and complementary modalities provides midwives with a versatile toolkit. Physical modalities, such as TENS and thermal therapies, align with the "Gate Control Theory" of pain, effectively blocking pain signals before they reach the central nervous system. Meanwhile, the inclusion of modern psychological tools like Virtual Reality (VR) and music therapy highlights the importance of neuro-cognitive distraction. As noted in the results, these interventions do not merely mask pain; they alter the mother's perception of it, thereby increasing her self-efficacy and reducing the "fear-tension-pain" cycle.

### Physiological Restoration and Hormonal Synergy

A core strength of the "Rest and Restore" framework is its grounding in the physiology of the autonomic nervous system. By shifting the mother from a sympathetic "fight or flight" state to a parasympathetic "rest and digest" state, these interventions facilitate the body's natural healing processes. The role of oxytocin—often referred to as the "hormone of love"—is central to this framework. Whether stimulated through massage, skin-to-skin contact (KMC), or emotional support, oxytocin serves a dual purpose: it acts as a natural analgesic and promotes uterine involution and milk let-down. This hormonal synergy suggests that "Rest and Restore" is not merely a comfort measure but a physiological necessity for optimal recovery.

### The Mother-Infant Dyad and Family-Centered Care

Perhaps the most significant finding of this framework is the bidirectional benefit of relaxation. The data regarding Kangaroo Mother Care (KMC) emphasizes that the mother's relaxation is inextricably linked to the newborn's stability. When a mother's pain and anxiety are managed non-pharmacologically, the newborn experiences improved thermoregulation and cardiorespiratory stability. Furthermore, by involving family members and birth companions, the framework extends the "circle of care," transforming the partner from a passive observer into an active facilitator of the mother's recovery. This systemic approach addresses the social determinants of postnatal health, reducing the risk of postpartum depression and isolation.

### **The Unique Role of Midwifery-Led Care**

The implementation of this framework is uniquely suited to midwifery practice. Unlike the intermittent nature of obstetric surgical care, midwifery-led care is defined by continuity and a woman-centered philosophy. Midwives are positioned to provide the "active listening" and "empathetic communication" identified in this study as foundational to support therapy. By empowering women to utilize their inherent coping mechanisms, midwives transition from being providers of treatment to facilitators of the "Rest and Restore" process.

### **Clinical Implications and Future Directions**

While pharmacological analgesia remains a necessary tool for severe or surgical pain, the "Rest and Restore" framework offers a sustainable and side-effect-free alternative for routine postnatal discomfort. Reducing reliance on opioids and NSAIDs is particularly beneficial for breastfeeding dyads, as it eliminates concerns regarding infant exposure to medication through breast milk.

However, the successful integration of this framework into clinical practice requires institutional support. Midwives must be trained in specific techniques such as acupressure and aromatherapy, and postnatal units must be designed to support "calm environments" and "prolonged KMC." Future research should focus on the quantitative assessment of these techniques in diverse clinical settings to establish standardized protocols for midwifery-led postnatal pain management.

## **III. Conclusion**

In conclusion, the benefits of integrating relaxation and supportive approaches in midwifery practice are multifaceted and far-reaching. They contribute to a more positive, empowering, and healthy experience for mothers, newborns, and families, aligning with the core principles of woman-centred and holistic midwifery care and the "Rest and Restore" paradigm.

### **List of Abbreviations**

- **TENS:** Transcutaneous Electrical Nerve Stimulation
- **CAA:** Complementary and Alternative Approaches
- **PMR:** Progressive Muscle Relaxation
- **ANS:** Autonomic Nervous System
- **SNS:** Sympathetic Nervous System
- **PNS:** Parasympathetic Nervous System
- **CNS:** Central Nervous System
- **VR:** Virtual Reality
- **KMC:** Kangaroo Mother Care

### **Declarations**

#### **Ethics approval and consent to participate**

This study was conducted in accordance with the ethical standards of the Institutional Ethics Committee (IEC) of King George's Medical University, India. As this manuscript proposes a theoretical framework based on existing clinical literature and non-invasive midwifery practices, the need for individual patient consent was not applicable.

#### **Consent for Publication**

The authors declare that they have no objection to the publication of the details within this manuscript. All authors have reviewed the final version and given their consent for its submission and publication.

#### **Data Availability Statement**

All relevant data and materials about this study are included in the manuscript. All sources cited are available in the public domain and referenced in the bibliography.

#### **Conflict of Interest**

The authors declare that there are no financial, personal, or professional conflicts of interest that could be perceived as influencing the research or the outcomes presented in this paper.

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### Author Contributions

- **Pooja Singh:** Conceptualization, methodology, and drafting of the original manuscript.
- **Tanima Verma (Corresponding Author):** Supervision, critical revision of the framework, and final approval of the version to be published.
- **Suman Lata:** Technical guidance, editing, and validation of the midwifery-led care protocols.
- **Lokesh Kumar Sharma:** Data curation, literature review, and assistance in formatting the physiological mechanisms.

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