Beyond Medication: A Holistic Review of Complementary Therapies in Labor outcomes - A Ten-year Review

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ABSTRACT

Background: The increasing demand for woman-centered and non-pharmacological approaches to labor has led to a growing interest in complementary therapies. These therapies are considered holistic, low-risk, and supportive of natural birth experiences.

Objective: To critically review and synthesize evidence from the past decade on the effectiveness, safety, and applicability of complementary therapies used during labor.

Methods: This narrative review examined studies published between 2015 and 2025 from major databases such as PubMed, Scopus, CINAHL, and Cochrane Library. A total of 20 peer-reviewed studies involving various complementary therapies—including massage, aromatherapy, acupressure, yoga, hydrotherapy, hypnobirthing, and music therapy—were analyzed for their impact on labor pain, anxiety, labor duration, and maternal satisfaction.

Results: The majority of studies reported significant reductions in labor pain and anxiety, increased maternal satisfaction, and in some cases, shorter labor durations. Therapies like SP6 acupressure, lavender aromatherapy, and prenatal yoga showed particularly consistent benefits. However, methodological limitations such as small sample sizes, heterogeneity in intervention protocols, and lack of long-term follow-up were noted. Cultural variations also influenced therapy selection and outcomes.

Conclusion: Complementary therapies offer promising, non-invasive options for enhancing the quality of labor and birth experiences. When tailored to individual preferences and supported by trained maternity care providers, these therapies can be safely integrated into routine obstetric care. Future research should focus on large-scale randomized trials and standardized protocols to strengthen evidence and inform clinical guidelines.

Keywords: Complementary therapies, labor pain, aromatherapy, massage, acupressure, prenatal yoga, holistic childbirth, maternal satisfaction

INTRODUCTION

Labor and childbirth are deeply personal, transformative experiences that can be physically intense and emotionally taxing. While pharmacological interventions such as epidural analgesia and opioid administration have long been the standard approach to managing labor pain, they may come with potential side effects for both the mother and fetus, including decreased mobility, longer labor durations, and increased likelihood of instrumental delivery[1]. In recent years, there has been increasing global interest in the use of

complementary therapies—non-pharmacological, holistic approaches designed to alleviate pain, anxiety, and distress during labor. These methods align with the broader movement toward woman-centered, respectful maternity care that emphasizes autonomy, choice, and minimal intervention[2].

Complementary therapies, also referred to as integrative or supportive therapies, include a diverse range of practices such as massage, aromatherapy, hydrotherapy, acupressure, acupuncture, breathing techniques, music therapy, and hypnobirthing[3]. They are intended to support the physiological process of childbirth while enhancing maternal comfort and satisfaction. Over the past decade, a growing body of empirical evidence has begun to evaluate these therapies systematically in clinical and community-based settings[4].

For example, a randomized controlled trial demonstrated that aromatherapy using lavender oil significantly reduced anxiety and pain intensity during labor among primiparous women[5]. Similarly, another study investigated the effect of music therapy and found it beneficial in reducing anxiety and promoting a sense of calm during the active stage of labor[6]. These findings suggest that simple, low-cost interventions can have a meaningful impact on women's birthing experiences when appropriately implemented[7].

Massage therapy, one of the most frequently used complementary interventions, has shown consistent results in reducing labor pain and increasing maternal satisfaction[8]. A study reported that massage therapy reduced the duration of labor and improved overall childbirth experience among Iranian women[9]. Another intervention gaining popularity is hydrotherapy—immersion in warm water during early labor. A systematic review confirmed that water immersion reduced labor pain perception and improved maternal satisfaction without increasing adverse outcomes[10].

Acupressure and acupuncture, based on traditional Chinese medicine, have also been evaluated in the context of labor management. Research found that acupressure applied at the SP6 point decreased the intensity of labor pain and shortened the active phase[11]. Likewise, complementary breathing and relaxation techniques such as hypnobirthing have shown effectiveness in improving psychological well-being and reducing labor stress. A qualitative study concluded that women who practiced guided imagery and breathing reported a greater sense of control and emotional preparedness during childbirth[12].

These findings support the integration of complementary therapies into maternity care as safe and potentially effective strategies for enhancing the quality of intrapartum care. Additionally, these therapies align with the 2018 WHO recommendations for a positive childbirth experience, which advocate for minimizing unnecessary interventions and promoting supportive environments where women can feel safe and empowered[2].

Despite these advancements, challenges remain in standardizing protocols, ensuring practitioner training, and addressing variability in acceptance across healthcare settings. Further high-quality research and education are essential to enable wider adoption and integration of these practices. By offering individualized, non-invasive support during labor, complementary therapies hold the promise of transforming birth into a more humane, respectful, and empowering process.

This review aims to synthesize evidence from the last ten years to examine the scope, efficacy, and clinical implications of complementary therapies in labor management. In doing so, it seeks to provide an evidence-based foundation for the incorporation of these practices into mainstream obstetric care, with a focus on improving maternal outcomes and satisfaction.

Objective of the Review

The primary objective of this review is to critically examine and synthesize the existing evidence from the past ten years (2015–2025) on the use of complementary therapies during labor. Specifically, the review aims to:

1. Identify the types of complementary therapies commonly used in labor management.
2. Evaluate the effectiveness of these therapies in reducing labor pain, anxiety, and duration of labor.
3. Assess Controversies Surrounding Complementary Therapies During Labor
4. Explore methodological issues related with the complementary therapies
5. Compare and Contrast of Findings on Complementary Therapies During Labor

By achieving these objectives, the review seeks to support healthcare professionals—especially nurses and midwives—in adopting holistic, woman-centered approaches to labor management that enhance maternal comfort and satisfaction while minimizing unnecessary medical interventions.

MATERIALS & METHODS

This review adopted an integrative literature review design to explore and synthesize evidence on the use of complementary therapies during labor, allowing for the inclusion of both quantitative and qualitative studies. The review focused on literature published between January 2015 and June 2025. Studies were included if they were peer-reviewed, published in English, and examined non-pharmacological or complementary therapies used specifically during the labor and childbirth period. Eligible study designs included randomized controlled trials (RCTs), quasi-experimental studies, observational studies, and qualitative research. Studies that focused solely on the antenatal or postpartum period, those that involved pharmacological interventions as the primary method, or non-research articles such as editorials, case reports, and reviews were excluded.

A systematic literature search was conducted using five major databases: PubMed, Scopus, CINAHL, ScienceDirect, and Google Scholar (for supplementary sources). A combination of keywords and Medical Subject Headings (MeSH) was used to ensure a comprehensive search. Search terms included: "complementary therapies," "labor pain," "non-pharmacological pain relief," "aromatherapy," "massage therapy," "acupressure," "hypnobirthing," "music therapy," "hydrotherapy," "breathing techniques," and "childbirth." Boolean operators were used to refine and expand the search strategy. In addition, the reference lists of all included studies were hand-searched to identify any additional relevant articles.

Following the search, duplicate records were removed. Two independent reviewers screened the titles and abstracts of the remaining articles to assess their relevance based on the inclusion and exclusion criteria. Full-text versions of potentially eligible articles were retrieved and reviewed for final inclusion. Any disagreements during the selection process were resolved through discussion until consensus was reached.

Data from the selected studies were extracted using a standardized form that captured details such as author(s), year of publication, country of study, study design, sample size and characteristics, type of complementary therapy used, intervention procedures, outcome measures, and key findings. Given the diversity of interventions and outcomes, a narrative synthesis approach was employed to analyze and summarize the results thematically. No statistical meta-analysis was performed due to heterogeneity in study designs and measurement tools.

To assess the methodological quality of included studies, the Cochrane Risk of Bias tool was applied to randomized controlled trials, while the Joanna Briggs Institute

(JBI) critical appraisal checklists were used for non-randomized and qualitative studies. Only studies with moderate to high methodological quality were included in the final analysis to ensure the reliability and credibility of the synthesized findings.

Types of complementary therapy

The findings of this review indicate that a variety of complementary therapies have been shown to positively influence maternal outcomes during labor. Aromatherapy, particularly with essential oils such as lavender, clary sage, and rose, has been widely studied. Studies by reported that aromatherapy reduced labor pain and anxiety levels among parturient women[13,14,15]. Similarly, massage therapy, including sacral massage, back massage, and foot reflexology, has shown significant benefits. Massage not only reduced pain but also shortened the duration of labor and enhanced maternal satisfaction[16].

Hydrotherapy, involving immersion in warm water during the early stages of labor, was found to promote relaxation and reduce pain perception without increasing adverse outcomes[10,16]. Acupressure, particularly at SP6 and LI4 points, has been shown to effectively reduce labor pain and support uterine contractions. Studies suggest that it can shorten the active phase of labor by enhancing cervical dilation. Its non-invasive and low-cost nature makes it a practical option in various birth settings. [11,17,18].

Music therapy has also been shown to alleviate labor anxiety and enhance the emotional experience of childbirth. Listening to calming or personally meaningful music during labor can help distract from pain, promote relaxation, and create a soothing environment[19]. Studies have reported that music therapy significantly lowers anxiety levels, improves mood, and fosters a sense of control among laboring women. It can positively influence physiological responses by stabilizing heart rate and reducing stress hormone levels. Moreover, music therapy is easy to implement, cost-effective, and adaptable to individual preferences, making it a widely accepted supportive intervention during labor[6,20]. In addition, hypnobirthing and guided imagery, which involve visualization and controlled breathing, helped women manage labor pain more effectively and enhanced their psychological coping[12,21].

Yoga and prenatal relaxation exercises practiced during pregnancy have been associated with shorter labor durations and reduced pain intensity during childbirth[22]. These practices help improve physical flexibility, strengthen pelvic muscles, and promote mindful breathing, which can ease the birthing process. Additionally, they contribute to emotional well-being by reducing stress and anxiety, thereby preparing women mentally and physically for labor[23,24]. Reflexology was also identified as a beneficial intervention, with studies such as highlighting its role in reducing pain and facilitating labor progression[25,29].

Systematic reviews and meta-analyses supported the overall effectiveness of complementary therapies in improving birth outcomes and maternal satisfaction. These findings consistently reinforce the value of integrating non-pharmacological methods into routine labor care, provided that appropriate training and protocols are in place[12,13,18].

Effectiveness of these therapies in reducing labor pain, anxiety, and duration of labor.

Table 1 shows the Effectiveness of these therapies in reducing labor pain, anxiety, and duration of labor.

No.	Therapy	Main Findings	Reference
1	Aromatherapy	Reduced labor pain and anxiety using lavender oil	Gokyildiz Surucu et al., 2020
2	Aromatherapy	Effective in reducing anxiety and pain during labor	Tabatabaeichehr & Mortazavi, 2020
3	Aromatherapy	Decreased anxiety and pain in first stage of labor	Rajavadi et al., 2018

4	Massage Therapy	Reduced pain and duration of labor; increased satisfaction	Ranjbaran et al., 2022
5	Massage Therapy	Massage and acupressure significantly lowered labor pain	Gönenç & Terzioğlu, 2020
6	Foot Massage	Decreased labor pain and anxiety in primiparous women	Akkoz & Incedal, 2021
7	Hydrotherapy	Reduced pain perception; improved comfort during early labor	Kordi et al., 2021
8	Hydrotherapy	Lower pain scores; no increased adverse outcomes	Cluett & Burns, 2018
9	Acupressure (SP6)	Reduced pain intensity and duration of labor	Türkmen et al., 2020
10	Acupressure	Effective pain management in early labor	Hasanin et al., 2024
11	Acupressure (SP6)	Meta-analysis confirmed pain relief benefits	Karimi et al., 2024
12	Music Therapy	Reduced anxiety and created calming effect during labor	Vaid et al., 2025
13	Music Therapy	Lowered maternal anxiety and improved mood	Ji, C et al., 2024
14	Hypnobirthing	Increased emotional control; improved birth experience	Smith et al., 2018
15	Hypnosis	Cochrane review supported pain relief and coping benefits	Madden et al., 2016
16	Reflexology	Reduced labor pain and shortened delivery	Moghimi et al., 2015
17	Reflexology	Improved cervical dilation and maternal comfort	Mohan et al., 2021
18	Prenatal Yoga	Shortened labor duration; reduced pain	Bolanthakodi et al., 2018
19	Prenatal Yoga	Improved delivery outcomes in late pregnancy	Nikpour et al., 2024
20	Prenatal Yoga	Decreased pain and duration; improved satisfaction	Riawati et al., 2021

Controversies Surrounding Complementary Therapies During Labor

Despite the growing body of evidence supporting the effectiveness of complementary therapies during labor, several controversies and challenges persist regarding their integration into mainstream obstetric care. One of the primary concerns is the inconsistency in the quality and methodology of existing studies. Many trials have small sample sizes, lack blinding, or use subjective outcome measures such as self-reported pain and satisfaction, which can introduce bias and limit generalizability[18,21]. Additionally, there is a lack of standardization in the type, duration, and timing of interventions—for instance, variations in essential oils used for aromatherapy or pressure points for acupressure—making it difficult to compare results across studies or formulate universal guidelines.

Another area of contention is the limited availability of trained practitioners for therapies like acupuncture, reflexology, and hypnobirthing. In many healthcare systems, these services are either unavailable, not integrated into hospital protocols, or offered inconsistently. Furthermore, skepticism among some clinicians about the scientific validity of complementary therapies, often viewed as lacking robust evidence or being "alternative" rather than evidence-based, contributes to their underutilization in clinical settings[13].

There are also cultural and ethical considerations, as not all women may be open to or aware of these therapies, particularly in low-resource or conservative settings. Informed consent and respect for personal beliefs are essential but sometimes overlooked in the rush of labor management. Additionally, while most complementary therapies are considered safe, there remains a concern about potential risks, such as allergic reactions to essential oils, improper use of acupressure points, or delaying necessary medical interventions due to over-reliance on non-pharmacologic methods[11].

Finally, the lack of regulatory frameworks and professional guidelines for complementary therapies during labor creates uncertainty for both healthcare

providers and patients. Without official endorsements or evidence-based protocols, many providers hesitate to implement these therapies, fearing liability or professional criticism. As a result, although complementary therapies offer promising benefits, their widespread adoption remains limited by ongoing controversies related to evidence quality, clinical acceptance, training, and regulatory oversight.

Methodological Issues in complementary therapies

Despite increasing interest in complementary therapies during labor, several methodological limitations affect the strength and generalizability of existing research. One of the most significant issues is the lack of standardization in intervention protocols. Studies often vary in terms of the type of therapy used (e.g., specific essential oils in aromatherapy, pressure points in acupressure, or styles of massage), dosage, frequency, and timing of interventions, making direct comparisons difficult[12,13]. Additionally, many studies rely on small sample sizes and single-center designs, limiting external validity and the ability to generalize findings to diverse populations[18].

Another major concern is the subjective nature of outcome measures. Pain and anxiety—primary outcomes in most of these studies—are often self-reported using visual analog scales (VAS) or numeric rating scales, which are vulnerable to individual bias and influenced by cultural, emotional, and environmental factors[21]. Furthermore, blinding is inherently challenging in trials involving touch-based or sensory therapies, such as massage, music, or aromatherapy, which increases the risk of performance and detection bias[11].

Some studies also exhibit inadequate randomization procedures, lack of allocation concealment, or insufficient reporting of participant attrition, all of which can introduce systematic error[12]. Moreover, there is often inconsistency in follow-up periods and a lack of long-term outcome evaluation, limiting insights into the sustained benefits or risks of these interventions. Finally, cultural and contextual differences across settings are rarely accounted for, despite the fact that beliefs and attitudes toward complementary therapies vary significantly by region, religion, and healthcare access[6].

Addressing these methodological issues through well-designed, adequately powered, and multi-site randomized controlled trials with standardized protocols and objective outcome measures is essential to strengthening the evidence base and supporting the integration of complementary therapies into mainstream labor care.

Compare and Contrast of Findings on Complementary Therapies During Labor

Research over the past decade has consistently shown that complementary therapies can positively influence labor outcomes, especially in terms of pain reduction, anxiety relief, and maternal satisfaction. However, variations in methods, populations, and outcomes lead to both converging and diverging findings across studies.

Pain Relief

Most studies agree that complementary therapies reduce labor pain. For instance, massage therapy[7] and acupressure at SP6 or LI4 points consistently demonstrated significant pain reduction[11]. Similarly, aromatherapy using lavender and clary sage oils also showed analgesic effects[3,13,31]. In contrast, some studies such as those on reflexology reported milder effects, possibly due to shorter intervention duration or differences in practitioner expertise[25,26].

Anxiety Reduction

Complementary therapies were also effective in reducing labor-related anxiety. Studies on music therapy[6,20] and guided imagery/hypnobirthing found significant improvements in emotional calmness and control[12,21]. However, while aromatherapy also demonstrated anxiety relief, its results varied across trials, with some reporting

modest benefits, likely due to subjective scent preferences or differing application methods[24].

Labor Duration and Progress

Some therapies also influenced the duration of labor, though findings were mixed. Massage therapy[9] and prenatal yoga[22,24] was associated with shorter labor, possibly due to improved muscle relaxation and pelvic flexibility. Conversely, studies on hydrotherapy showed strong results for pain but less impact on labor length[10,16]. This contrast may reflect when during labor the therapy was initiated (e.g., early vs. active phase).

Maternal Satisfaction and Emotional Control

Nearly all interventions improved maternal satisfaction, especially when women had control over therapy choice and timing. Hypnobirthing and massage showed particularly strong emotional and psychological benefits[12,28]. In contrast, studies without participant choice (e.g., standardized aromatherapy without preference selection) showed less impact on satisfaction scores, suggesting individualization of therapy is key to outcomes[30].

Consistency and Limitations

While trends are mostly positive, the effect sizes and consistency of outcomes varied. Some therapies like acupressure and massage had robust evidence from multiple RCTs, while others like reflexology or music therapy had fewer high-quality studies or were more susceptible to subjective interpretation. Furthermore, methodological issues, such as small samples, lack of blinding, and heterogeneous protocols, contribute to variability across findings[12,13].

Table 2: Comparing Effects of Key Therapies

Therapy	Pain Relief	Anxiety Relief	Shorter Labor	Higher Satisfaction	Notes
Aromatherapy	Moderate–High	Moderate	Mild	Moderate	Scent preference impacts results
Massage	High	Moderate	High	High	Strong evidence base
Hydrotherapy	High	Moderate	Low–Moderate	High	Early labor use most effective
Acupressure	High	Mild	Moderate	High	SP6 and LI4 points most studied
Music Therapy	Low–Moderate	High	Not significant	Moderate	Dependent on music preference
Hypnobirthing	Moderate	High	Mild	High	Best results with prior practice
Reflexology	Mild–Moderate	Not well studied	Mild	Moderate	Evidence less consistent
Prenatal Yoga	Moderate	Moderate	High	High	Most effective when practiced antenatally

Various complementary therapies have been explored in the Table.2, for their effectiveness in managing labor-related discomfort and emotional stress. Massage therapy stands out with high effectiveness in pain relief, shorter labor duration, and maternal satisfaction, supported by a strong evidence base. Hydrotherapy, particularly during early labor, also provides significant pain relief and improves satisfaction, though its impact on labor duration is moderate.

Acupressure, especially at points like SP6 and LI4, is effective for pain relief and satisfaction, with moderate influence on labor duration. Prenatal yoga, when practiced antenatally, contributes to reduced labor duration, moderate pain and anxiety relief, and high satisfaction. Aromatherapy shows moderate effects on pain, anxiety, and satisfaction, though outcomes can vary based on individual scent preferences. Hypnobirthing is particularly beneficial for

anxiety and satisfaction, especially with prior practice, while its effects on pain and labor duration are more modest. Music therapy is more effective in reducing anxiety than pain, and outcomes are influenced by the type of music used. Reflexology shows mild to moderate benefits, but the evidence is less consistent, particularly regarding anxiety relief.

DISCUSSION

This review highlights the growing body of evidence supporting the effectiveness of complementary therapies as adjuncts to conventional labor management. Across 20 studies published between 2015 and 2025, therapies such as massage, aromatherapy, acupressure, hydrotherapy, music therapy, prenatal yoga, and hypnobirthing have been shown to offer various physiological and psychological benefits during labor. The widespread adoption of these therapies reflects a global shift toward woman-centered and holistic maternity care[12,13].

One of the most consistent findings is the efficacy of complementary therapies in reducing labor pain and anxiety. Techniques like massage and acupressure, particularly at SP6 and LI4 points, demonstrated significant analgesic effects[11,18]. Similarly, aromatherapy using essential oils such as lavender and clary sage provided calming and pain-reducing benefits[5,24]. Music therapy and guided imagery were especially effective in alleviating anxiety, fostering a sense of emotional control during labor[6,12].

Another significant pattern is the improvement in maternal satisfaction when complementary therapies are incorporated. Women reported feeling more in control, less fearful, and more supported, especially when given autonomy in selecting their preferred therapies[13,21].

The effects on labor duration, however, were mixed. While massage therapy, acupressure, and prenatal yoga were associated with shortened labor duration in some studies[9,22], others—particularly those focusing on hydrotherapy or music—showed less consistent outcomes[16,20]. These discrepancies may be attributed to methodological variations, including intervention timing, practitioner training, or participant characteristics.

Cultural context also emerged as a crucial factor influencing the choice and effectiveness of therapies. Studies from Iran, Turkey, and India frequently reported on the use of massage, reflexology, and aromatherapy[24,25], whereas Western studies often emphasized music therapy, hydrotherapy, and hypnosis[12,21]. This variation underscores the need for culturally adaptable protocols that respect local practices while maintaining clinical rigor.

While results are promising, methodological limitations were evident across several studies. Common issues included small sample sizes, lack of blinding, short-term follow-up, and varied outcome measures, which limit generalizability and comparability[12,13]. Standardized, high-quality randomized controlled trials (RCTs) are needed to validate findings across broader populations and healthcare systems.

The review also revealed that complementary therapies are generally safe, non-invasive, and low-cost, making them especially useful in low-resource settings. None of the reviewed studies reported adverse maternal or neonatal outcomes, strengthening the case for their inclusion in routine labor care[9,11].

Finally, multimodal approaches—such as combining massage with aromatherapy or integrating yoga with breathing techniques—often produced more favorable outcomes than single interventions[27,31]. This supports the holistic nature of complementary medicine and suggests that integrated protocols could be more effective in enhancing maternal comfort and outcomes during labor.

Implications for Practice and Future Research

The findings of this review support the integration of evidence-based complementary therapies into standard maternity care. Midwives, nurses, and

obstetric care providers should receive training to safely administer or facilitate these interventions. Moreover, institutional policies should encourage woman-centered care that respects individual preferences and cultural contexts.

Future research priorities include:

- Conducting large-scale, multicenter RCTs with standardized protocols.
- Developing uniform outcome measures to ensure comparability.
- Exploring long-term maternal and neonatal outcomes.
- Examining women's experiences and acceptability of therapies across cultural settings.

CONCLUSION

This review underscores the growing body of evidence supporting the use of complementary therapies as effective, safe, and holistic approaches to labor management. Over the past decade, therapies such as massage, aromatherapy, acupressure, music therapy, hydrotherapy, yoga, and hypnobirthing have been shown to significantly reduce labor pain and anxiety, enhance maternal satisfaction, and, in some cases, shorten labor duration. These interventions not only empower women to actively participate in their birthing experience but also offer low-risk, cost-effective alternatives or adjuncts to pharmacologic methods.

Despite promising outcomes, inconsistencies in study designs, small sample sizes, and a lack of standardization limit the generalizability of current findings. Furthermore, cultural and regional variations in therapy use highlight the need for context-specific guidelines and training for maternity care providers. Moving forward, there is a clear need for well-designed, large-scale randomized controlled trials to strengthen the evidence base, standardize intervention protocols, and explore the long-term effects of these therapies. Integrating complementary therapies into routine obstetric care, especially when tailored to women's preferences and cultural backgrounds, can contribute to more positive birth experiences and improved maternal outcomes. Ultimately, embracing a holistic, woman-centered approach to labor management—one that respects both evidence-based medicine and the value of complementary practices—can enhance the quality and humanity of childbirth care in diverse settings.

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