



## REVISIONES

### The usefulness of complementary therapies in pain management during childbirth: an integrative review

Utilidad de las terapias complementarias en el manejo de dolor durante el parto: una revisión integradora

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#### ABSTRACT:

**Introduction:** Labor pain is one of the most worrying things for future mothers. Nurses ensure the well-being of patients in all these aspects and it should be noted that there are various complementary options to epidural analgesia.

**Objective:** To identify the complementary therapies that could be applied effectively and safely in pregnant women, to analyse the contributing factors of greater well-being for the parturient and to evaluate their utility.

**Method:** This integrative review was carried out in online databases: PubMed, Scopus and Dialnet. Articles whose publication date was not more than ten years ago, written in English, Spanish or Portuguese and open access were included.

**Results:** 16 studies about the application of different complementary therapies used safely in pregnant were included and analysed. The obtained results of the application of complementary techniques in previous studies were considered and grouped according to typology: body-mind interventions, alternative medical practice, manual healing methods, immersion in water and swiss ball, aromatherapy and auriculotherapy and transcutaneous electrical nerve stimulation.

**Conclusion:** The variety of effective and safe complementary therapies on labour is evidenced, as well as their usefulness to reduce the possible inconveniences that may appear during this process, increasing the positive experience of labour.

**Keywords:** Pain; Labor; Birth; Complementary therapies; Non-pharmacological method; Epidural analgesia.

#### RESUMEN:

**Introducción:** El dolor de parto es uno de los aspectos que más preocupan a las futuras madres. La enfermería vela por el bienestar de las pacientes en todas sus vertientes y cabe tener presente que existen diversas opciones complementarias a la analgesia epidural.

**Objetivo:** Identificar las terapias complementarias que puedan aplicarse de forma efectiva y segura en embarazadas, analizar los factores que contribuyan a un mayor bienestar para la parturienta y evaluar su utilidad.

**Método:** Revisión integradora de la literatura realizada mediante la búsqueda en las bases de datos online: PubMed, Scopus y Dialnet. Se incluyeron artículos cuya fecha de publicación no fuese superior a los 10 años previos a la búsqueda, redactados en inglés, español o portugués y de acceso abierto.

**Resultados:** Se analizaron un total de 16 artículos cuya temática giraba en torno a la aplicación de diferentes terapias complementarias utilizadas con seguridad en mujeres embarazadas. Se tuvieron en cuenta los resultados de la aplicación de diferentes técnicas complementarias en estudios previos y se agruparon según tipología: intervenciones cuerpo-mente, práctica médica alternativa, métodos de curación manual, inmersión en agua y pelota suiza, aromaterapia y auriculoterapia y estimulación nerviosa eléctrica transcutánea.

**Conclusión:** Se evidencia la variedad de terapias complementarias cuya aplicación resulta efectiva y segura en el momento del parto, así como su utilidad para disminuir los inconvenientes presentes durante esta etapa, acrecentando así, la experiencia positiva del parto.

**Palabras clave:** Dolor; Parto; Nacimiento; Terapia complementarias; Métodos no farmacológicos; Analgesia epidural.

## INTRODUCTION

Labor and birth are profound and unique experiences and, also, complex physiological processes. Etymologically, the word parturition comes from the Latin term “*partus*” which means to give birth. It consists of the birth of a human being who will need to adapt to a new environment, needing, in turn, the attention and care of their family to cover their basic needs<sup>(1)</sup>.

Many factors condition this process, which determines a wide array of labor and delivery scenarios, with natural childbirth being the focus of this study.

According to the Federation of Associations of Midwives of Spain (FAME, according to its Spanish acronym), natural childbirth is the “unique physiological process by which a woman ends her pregnancy to term, which involves psychological and sociocultural factors, with a spontaneous onset and which develops and ends without complications, culminating with birth and without requiring any additional intervention other than the comprehensive and respectful support of the process”<sup>(2)</sup>. Various techniques and resources apply to this type of childbirth to promote a unique experience for the woman and the newborn. However, it is worth noting that labor and delivery are not passive processes. The capability of the fetus to pass through the pelvis successfully depends on the interaction of different related variables<sup>(3)</sup> and on the muscular activation of the mother, which is initiated by uterine contractions in increasingly shorter time intervals and with increasing intensity<sup>(1)</sup>.

All through this process, there is pain, which cannot be simply defined due to its subjective nature. Therefore, providing a unanimous definition poses a great challenge. Currently, according to the International Association for the Study of Pain (IASP), pain is defined as: “an unpleasant sensory and emotional experience associated with actual or potential tissue damage”<sup>(4)</sup>. A defense mechanism whose main function is detecting and locating the processes that are damaging body structures, while integrating a subjective experience based on thoughts, sensations, and behaviors.

It is worth noting that pregnant women are greatly concerned about the fear of childbirth, which is a physiological response capable of altering the emotional balance and causing great anxiety<sup>(5)</sup>. These aspects are closely related and occur, to a greater

extent, when delivery is imminent and related to the concerns and fears that pregnant women have for their own health and that of their children<sup>(5,6)</sup>.

The pain of childbirth is linked to the human experience, and it is described as one of the most intense pains a person can feel. It is widely accepted that the greater the anxiety, the greater the pain. However, it is worth noting that multiple factors can modify this relationship, such as the personality of the individual, the characteristics of the process, and the degree of knowledge, etc. Therefore, pain is not only physical. It has been shown that education and culture indirectly affect the perception of pain, resulting in individual life and childbirth experiences<sup>(6,7)</sup>.

Each person has a different pain tolerance threshold and its intensity depends on multiple factors, ranging from the size and position of the baby to the level of comfort of the woman during the process, as well as the strength of her contractions. Inadequate management of pain can lead to medical complications and unfavorable obstetric and neonatal outcomes, and, also, prolonged hospital stays and unnecessary suffering<sup>(6,8)</sup>.

Currently, pain relief during childbirth is demanded by most pregnant women and is considered their essential right. Analgesia must be offered to all women, and except for their refusal or express medical contraindication, no reason justifies the refusal to provide it<sup>(9)</sup>.

Despite being available since 1901, epidural analgesia (EA) was not widely used until the 1970s, as some physicians in the field of anesthesiology considered it to be dangerous and difficult to administer. Various analgesic techniques and a wide variety of drugs have been used to try to mitigate labor pain, but of all of them, the most effective technique with the most favorable benefit/risk ratio to manage pain is still the EA<sup>(10,11)</sup>.

Nowadays, this is the most studied, widespread, and used method to relieve and manage the pain related to labor and delivery<sup>(11)</sup>. It provides superior pain relief during all phases of labor compared to any other systemic analgesia and offers multiple advantages, such as high maternal-fetal safety, maximum efficacy in relieving pain and anxiety, and the chance for active maternal participation throughout the entire process<sup>(9,10)</sup>.

Considering the many factors—not just physiological—that influence labor pain, there is a wide range of non-pharmacological complementary therapies (CTs) available. Due to their extensive variability and constant transformation, they have not been defined homogeneously. Seeking to reach a consensus, the World Health Organization (WHO), defines them as: “a broad set of health care practices that are neither part of the traditional nor conventional medicine of a given country nor fully integrated into the prevailing health system”<sup>(12)</sup>. The reason they are called *complementary* is that these therapies are used jointly with allopathic medicine, in this case, EA<sup>(13)</sup>.

While studying the hypothesis that administering CTs can be beneficial during labor—as a complement, not a substitute of EA—we found that deeper knowledge is required. For this reason, this review aims to identify those complementary therapies that may be used effectively and safely in pregnant women; and to analyze and evaluate the

usefulness of the contributing factors improving the well-being of the parturient, extracted from the selected bibliography.

## **METHODOLOGY**

### **Study Design**

To achieve the proposed objectives, we have carried out a critical, or integrative review (IR), of the literature, based mainly on primary studies and previous reviews. The IR allows the incorporation of evidence into clinical practice through a search, followed by the critical evaluation and synthesis of the information compiled, to implement effective healthcare interventions and produce homogenous nursing knowledge. Along the same lines, we formulated the following research question based on the PICO strategy ( P- Population, I- Intervention, C- Comparison, and O- Outcome)<sup>(14)</sup> — “Is the use of complementary therapies effective to manage pain during childbirth in puerperal women?”

### **Data Collection**

Under the stated purpose, the search strategy structure used in this review takes into account terms combined with the Boolean operator *AND*. The descriptors used were: “non-pharmacological methods”, “complementary therapies” “alternative therapies”, “pain”, “birth”, and “labor”. The search was carried out in Spanish and English, adapting to the specifications of each database.

### **Period and Search Criteria**

It was conducted between October 2020 and April 2021 in the following databases: PubMed, Scopus, and Dialnet. To narrow the search scope of the study articles, we used the following inclusion criteria: articles published in 2010 onwards (in the last ten years), written or published in Spanish, English, or Portuguese, in digital format, and with access to the full text.

Exclusion criteria included: articles that did not meet the previous criteria, experimental works with non-human samples, and duplicate publications.

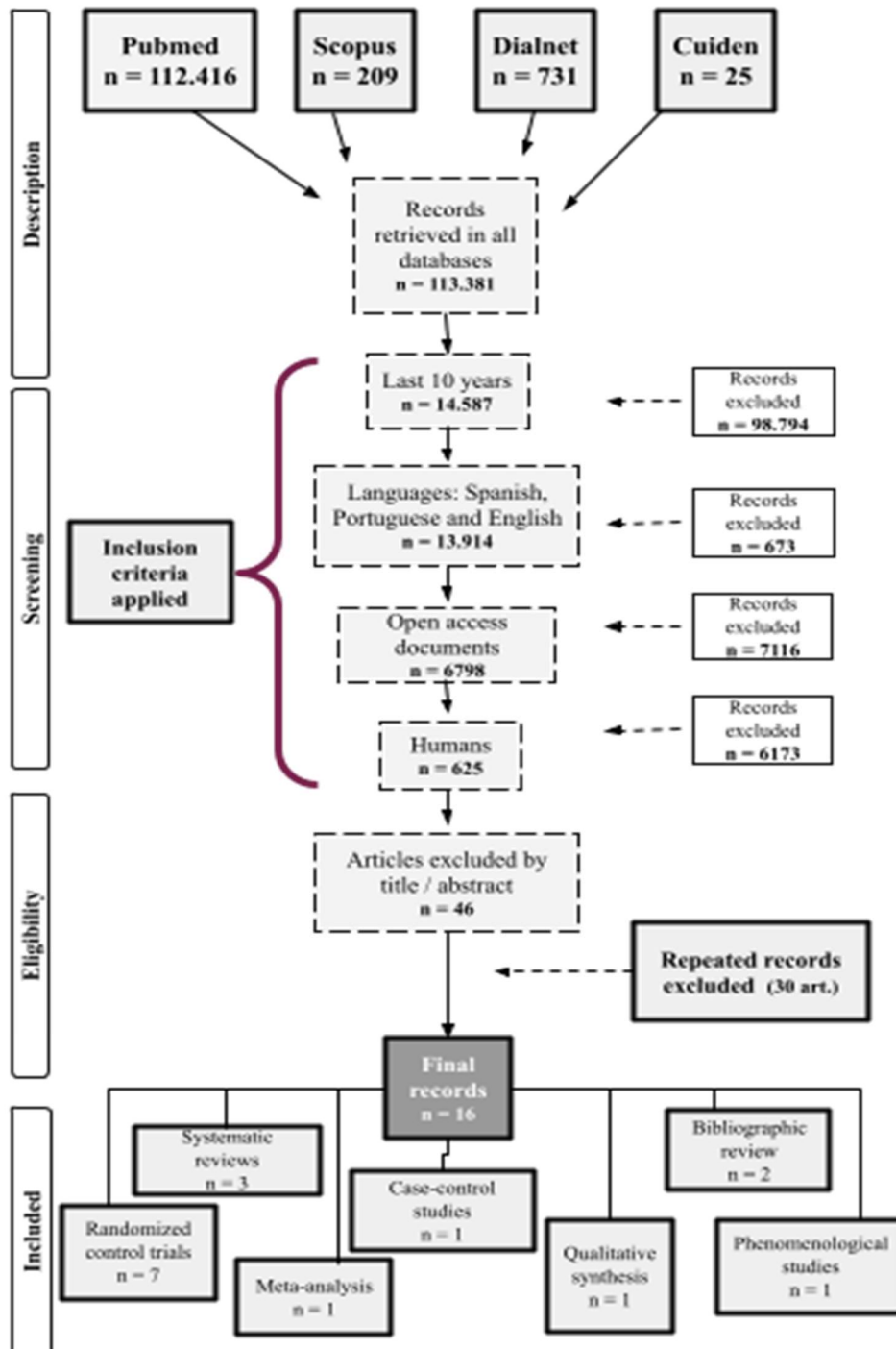
Simultaneously with this search, we created a descriptive table including a synthesis of the documents we consulted, which included the following information: author, year of publication, country promoting the research, the title of the article, stated objectives, study design, sample, intervention, and outcomes, all of which contributed to the development of this work.

## **RESULTS**

After identifying 113,281 scientific productions in the initial search for this IR, we applied the inclusion and exclusion criteria regarding study time, language, accessibility, and characteristics of the study sample. Consequently, we obtained 46 articles that were later evaluated entirely. Thirty of these were eliminated due to

duplication or inappropriate content, obtaining a final number of 16 articles included in this review, as shown in the Flow Chart represented in Figure 1.

**Figure 1: Adaptation of the PRISMA Flow Chart for the selection of articles.**  
Adapted by the authors



After filtering the available literature based on the defined criteria, we categorized the remaining publications as follows: 7 randomized control trials, 3 systematic reviews, 1 meta-analysis, 1 case-control study, 1 qualitative synthesis, 2 literature reviews, and 1 phenomenological study.

Table 1 briefly describes the main study elements that constituted the final sample of the review.

**Table 1: Description of the articles selected for review**

Author / Year / Country	Title	Objective	Design and sample	Intervention	Results
Smith et al. 2011. Australia	Acupuncture or acupressure for pain management in labour.	To examine the effects of acupuncture and acupressure for pain management during labor.	Randomized case-control study. 1986 women.	Comparison between the use of acupressure with placebo, no treatment and other non-pharmacological forms of pain management during labor.	Pain reduction, greater satisfaction of the woman and reduced use of pharmacological analgesia.
Smith et al. 2018. Australia	Relaxation techniques for pain management in labour.	To examine the effects of relaxation methods for pain management during labor on maternal and perinatal morbidity.	Randomized case-control study. 1374 women.	Mind-body relaxation techniques: relaxation methods, yoga, music, auditory analgesia and mindfulness. Comparison between any type of relaxation technique and any other.	Relaxation and yoga were associated with a reduction in pain intensity. Greater satisfaction of the woman associated with previous instruction in these techniques.
Smith et al. 2012. Australia	Massage, reflexology and other manual methods for pain management in labour.	To examine the effects of manual healing methods, including massage and reflexology for labor pain management, on maternal and perinatal morbidity.	Systematic review. 14 articles.	Comparison between manual healing methods, standard care, no treatment, other nonpharmacological forms of pain management during labor and/or placebo.	Decreased pain during labor and reduced anxiety levels, thus improving the woman's emotional experience.
Czech et al. 2018. Poland.	Pharmacological and non-pharmacological methods of labour pain relief-establishment of effectiveness and comparison.	To identify women's experience with labor pain, and to compare and evaluate the efficacy of pharmacological and nonpharmacological pain relief methods.	Case-control study.	Fulfilment of an Ad Hoc questionnaire. The visual analog scale (VAS) was also used to determine the level of pain during labor. 258 pregnant women over 37 weeks.	Pain reduction by the use of nitrous oxide, augmented with TENS or water immersion. However, epidural analgesia was the method with the greatest effect.
Chen et al. 2019. Taiwan.	Labour pain control by aromatherapy: A meta-analysis of randomised controlled trials.	To carry out a meta-analysis on the effectiveness of aromatherapy on labor pain and duration of labor.	Meta-analysis of randomized control trials.	Statistical analysis of 17 published papers to determine the effectiveness of aromatherapy.	Reduction of labor pain and duration of labor. No influence on the rupture of membranes or on the start of labor.

Gallo et al. 2018. Brasil.	Sequential application of non-pharmacological interventions reduces the severity of labour pain, delays use of pharmacological analgesia, and improves some obstetric outcomes: a randomised trial.	To identify if the sequential application of nonpharmacological interventions relieve labor pain, shorten labor pain, or delay the need for pharmacological analgesia.	Randomized case-control study. 80 women.	Application of interventions to the participants of the experimental group: exercises with Swiss ball, massage and warm shower.	Decrease and delay the need for analgesics. Improved neonatal status and greater maternal satisfaction.
Jones et al. 2012. United Kingdom.	Pain management for women in labour: an overview of systematic reviews.	To summarize the evidence from Cochrane systematic reviews on the efficacy and safety of nonpharmacological and pharmacological interventions to manage pain in labor.	Systematic reviews of randomized control trials.	A search was carried out to identify randomized experimental studies on pain management during labor. Each review included comparisons with placebo, standard care, or a different intervention.	Effective pain management with the use of epidural analgesia, however, appearance of adverse effects. Less adverse effects with water immersion, relaxation, acupuncture, massage and TENS. Greater satisfaction and safety of the mother.
Levett et al. 2016. Australia.	Complementary therapies for labour and birth study: a randomised controlled trial of antenatal integrative medicine for pain management in labour.	To evaluate the effect of a prenatal comprehensive medicine education program in addition to usual care for nulliparous women on the use of intrapartum epidural use.	Randomized case-control study. 176 nulliparous women.	Randomization of various non-pharmacological techniques to assess their effect on the delivery time.	Statistically and clinically significant reduction in epidural and caesarean section rate for the intervention group compared to the control group.
Madden et al. 2012. Australia.	Hypnosis for pain management during labour and childbirth.	To examine the effectiveness and safety of hypnosis for the management of pain during labor and childbirth.	Randomized case-control study. 1213 women.	Comparison of use of hypnosis during labor, with or without the simultaneous use of pharmacological analgesia.	Decrease of pain intensity during labor and reduction of labor time. Complementary use between both.
Mafetoni et al. 2016. Brasil.	Effects of auriculotherapy on labour pain: a randomized clinical trial.	To evaluate the effects of auriculotherapy on pain control and its results on the duration of labor.	Randomized, double-blind, case-control study with preliminary data. 30 pregnant women.	Comparison of results between groups: intervention (auriculotherapy), placebo and control.	Greater control and perception of pain and shorter duration of labor through the use of auriculotherapy.
Makvan diet al.	Effect of birth ball on labor	To critically evaluate the	Systematic review of	A search in electronic	Significant improvements in

2015. Japan.	pain relief: A systematic review and meta-analysis.	available evidence related to the impact of using a birth ball on labor pain relief.	randomized control trials. 220 women.	databases to assess pain was carried out. The visual analog scale (VAS) was used as the main outcome measure for pain.	labor pain, however, further investigation is needed for the possible effects to be caused.
Thomson et al. 2019. United Kingdom.	Women's experiences of pharmacological and non-pharmacological pain relief methods for labour and childbirth: a qualitative systematic review.	To know what affects women's decisions and choices during the birthing process and to inform guidelines, policy, and practice.	Qualitative evidence synthesis. 58 journal articles.	Electronic database search to analyze and highlight similarities and differences in women's accounts about different methods of pain relief.	Higher maternal control and pain reduction with pharmacological pain relief but there more negative side effects.
Muñoz Sellés et al. 2016. Spain.	Women's experience of labor pain relief: knowledge and usefulness of complementary and alternative therapies.	To know women's living experiences with complementary therapies during labor.	Phenomenological study using qualitative methodology. 12 postpartum women.	Individual interviews.	Parity and freedom of choice was the most important factor. Pregnant women requested information about CTs, support and accompaniment during pregnancy.
Sartori, et al. 2011. Spain.	Nonpharmacological strategies to relieve pain during the labor process.	To evidence the efficacy of non-pharmacological strategies to relieve pain during the labor process.	Bibliographic descriptive exploratory research. Pregnant women.	Literature review and descriptive analysis of pain relief during labor and evidences following the application of nonpharmacologic strategies.	Effective pain relief through the use of acupuncture and transcutaneous electrical stimulation (TENS).
Caballero et al. 2016. Spain.	Nonpharmacological alternatives for pain relief in labor.	To know the effects and safety of non-pharmacological interventions to control pain during labor.	Bibliographic review.	A database search was carried on identifying non-pharmacological interventions and evaluating its effects.	Reduction of maternal pain and anxiety. Requirement of previous training, both for the professional and the woman in labor.
Cavalcanti et al. 2019. Brazil.	Complementary therapies in labor: randomized clinical trial.	To evaluate the effect of isolated bathing, combined bathing and perineal exercise with a Swiss ball on pain perception, anxiety and labor progression.	Randomized control trial. 128 pregnant women	Intervention in three groups: bath, birthing ball and combination of both.	Perception of pain increased. After use, anxiety levels decreased. Improved adaptation, maternal well-being and labor evolution.



After completing the search, we identified a great variety of complementary therapies, the most outstanding being:

- *Relaxation/breathing techniques*: Respiratory control exercises that divert the focus of the painful sensation, while increasing the release of endorphins and, thus, facilitating adequate fetal oxygenation<sup>(15)</sup>.
- *Yoga*: To learn about the body, its changes, and its capabilities, while incorporating mind control and breathing exercises. This discipline helps women experience a conscious and calm delivery by understanding the internal resources and individual wisdom to adequately manage the stress caused by contractions<sup>(16)</sup>.
- *Hypnosis*: The objective of this therapy is to help pregnant women reach a state of maximum attention, by reducing awareness of external stimuli and increasing behavioral control to deal with their fears and anxieties<sup>(15)</sup>.
- *Massage and reflexology*: Soft tissue manipulation of the body and/or use of gentle pressure on certain parts of the foot of the mother that causes an effect on another part of the body to help bring about a state of relaxation<sup>(15)</sup>.
- *Acupuncture and acupressure*: Observational method based on Chinese theories. According to these theories, the human body encompasses a constant flow of energy called *chi*. This *chi* travels throughout the body through channels called *meridians* where needles are inserted to stimulate its flow. The exact position and depth of the needles are determined after a highly individualized diagnosis<sup>(4,15)</sup>.
- *Aromatherapy*: Useful technique for the control of anxiety and pain through the use of highly concentrated essential oils, extracted from various plants used for therapeutic purposes<sup>(17)</sup>.
- *Auriculotherapy*: Method that uses reflex points of the ear pinna on the central nervous system to treat various disorders<sup>(18)</sup>.
- *Birthing ball*: Use of a ball as a seat that allows greater freedom of movement, pelvic rocking, and maternal upright position. It provides multidirectional mobility and support to the pelvic muscles, allowing the abdominal muscles to relax during the intercontractile intervals<sup>(15)</sup>.
- *Water immersion*: This is the possibility of giving birth in an aquatic environment, by which the pregnant woman is immersed in water at 34-37°C up to the pectoral muscles<sup>(15)</sup>.
- *Transcutaneous Electrical Nerve Stimulation (TENS)*: Electrical impulse generator controlled autonomously by the individual that aims at reducing local pain<sup>(15,19)</sup>.

## DISCUSSION

To facilitate the analysis of our findings, following the existing literature, we grouped the CTs based on the nature of their practice: mind-body interventions (yoga, hypnosis, relaxation techniques), alternative medical practice (acupuncture, acupressure), manual healing methods (massage, reflexology), water immersion and Swiss ball, aromatherapy and auriculotherapy, and transcutaneous electrical nerve stimulation (TENS). The above provides significant alternatives for pain management and provides broader accessibility when discussed during the prenatal period.

## Mind-body interventions

The use of *relaxation techniques* helps reduce the intensity of pain during the latent and active phases of childbirth, thus promoting a comfortable environment for the pregnant woman, and reducing stress and anxiety<sup>(16)</sup>. Moreover, a significant decrease in the number of assisted vaginal births through the use of this technique has been recorded<sup>(20)</sup>. However, other studies show the ineffectiveness of this method during labor, considering it more useful in the postnatal period<sup>(21)</sup>. We have drawn this conclusion from a literature review carried out in 2019 that revealed that the effectiveness of relaxation techniques is highly variable, but so is the range of application, therefore making it difficult to ensure the usefulness of this technique to relieve pain during childbirth<sup>(21)</sup>.

*Hypnosis*, on the other hand, is accomplished by the application of unified guidelines aiming at reaching an altered state of consciousness which is linked to a reduced perception of the surroundings<sup>(20,22)</sup>. The responsiveness of individuals can facilitate changes in perception and behavior. This way, the attention is focused on feelings of comfort or numbness, thereby enhancing women's relaxation and sense of security. It helps reduce pain intensity and shorten labor duration and hospital stay, while it provides a safe environment without any identified adverse effects<sup>(22)</sup>.

Nevertheless, the professional practicing hypnosis and the woman in labor must possess previous knowledge of this therapy, which implies a prior investment of their time and effort<sup>(15)</sup>. Bearing in mind that this technique may inhibit the emotional interpretation of painful sensations, it is worth considering it as a safe and effective complementary therapy<sup>(15,20)</sup>.

Lastly within this group is *yoga*, a discipline designed to induce calm and distractions, facilitating pain relief during childbirth. It involves becoming aware of our breathing and the ability to ignore external concerns, thus eliminating toxins present in the body and allowing the release of mental and emotional blocks<sup>(16)</sup>.

According to the literature reviewed, practicing *yoga* during labor and delivery facilitates and encourages positive reinforcement in pregnant women by enabling them to experience certain control over the situation and their own bodies<sup>(21)</sup>. It also helps reduce pain during childbirth which increases satisfaction with the whole experience<sup>(16)</sup>.

### Alternative medical practice (traditional Chinese medicine)

There are various alternatives within this section, such as *acupuncture* and *acupressure*. The stimulation of strategic points located near neural structures through this type of practice can increase satisfaction with pain treatment, reducing its intensity and the need for pharmacological analgesia<sup>(20,23)</sup>.

The existing literature shows that techniques such as acupuncture reduce the number of assisted vaginal deliveries and cesarean sections<sup>(20)</sup>, while acupressure can be used to reduce anxiety at the time of childbirth<sup>(23)</sup>. However, despite acknowledging its benefits, some authors emphasize the importance of choosing highly trained professionals in this area, as not doing so may result in a lack of benefits and even adverse effects<sup>(15,16)</sup>.

## Manual healing methods

In the category of manual healing methods, *reflexology* and *massage* are worth mentioning due to their ability to improve the satisfaction and experience of childbirth. Through the manipulation of the soft tissues of the body, strained muscles become relaxed, helping individuals reach a state of peacefulness<sup>(15)</sup>. Subsequently, this helps reduce pain by inhibiting sensory transmission, improving blood flow and tissue oxygenation<sup>(24)</sup>.

Based on the above, the use of these disciplines entails multiple positive effects as mentioned in other studies as well. The most usual benefit is the increased perception of external affection that women feel with these therapies, which increases the feelings of care, well-being, and comfort<sup>(15,21,24)</sup>.

## Water immersion and Swiss ball

*Water immersion* is another remarkable method that is being used more frequently. Women who use this method report feeling safe, relaxed, and in control of the situation<sup>(25)</sup>. Water allows the pelvic tissues to be more flexible and elastic, reducing pain during contractions, as well as the number of instrumental interventions during childbirth. This technique is well-accepted and it has been associated with greater satisfaction among parturient women<sup>(25,26)</sup>.

A clinical trial carried out in Brazil emphasizes the usefulness of hot water in this process, which stimulates the redistribution of muscle blood flow and the release of endorphins, providing comfort and improving the metabolism and elasticity of some tissues<sup>(26)</sup>.

Likewise, it has also been proven that the complementary use of hot bath therapies and perineal exercises with a *Swiss ball* leads to optimal outcomes in parturient women<sup>(26)</sup>. The joint use of both techniques helps significantly reduce the intensity of pain during labor, which consists of a positive advantage on a psychological level<sup>(27,28)</sup>. These techniques help to improve body posture, balance, and coordination as a result of their dynamic nature, which also helps the mother to maintain control of her body and develop confidence in her body and herself<sup>(28)</sup>.

## Aromatherapy and auriculotherapy

Additional auxiliary treatments for managing pain and stress during childbirth are *aromatherapy and auriculotherapy* which have been gaining popularity in recent times. Both techniques are useful for reducing pain, anxiety, and the duration of labor, and they are also safe for mothers. It is worth noting that through auriculotherapy parturient women can manage pain more successfully. Although the studies analyzed do not provide sufficient significant evidence to support the benefits of these techniques, they have not been associated with any risks<sup>(17,18)</sup>.

## Transcutaneous electrical nerve stimulation (TENS)

Finally, the literature includes *transcutaneous electrical nerve stimulation (TENS)* as a complementary and useful method for analgesia during labor, although not all studies agree with this statement. A clinical trial carried out in 2018 in Poland shows

ineffective pain reduction and poor acknowledgment of its potential benefits by parturient women. Therefore, the TENS method is considered the least satisfactory pain management method, compared to the use of EA and other complementary techniques<sup>(26)</sup>.

Other studies support the statement that although most non-pharmacological methods for pain treatment are non-invasive and seem to be safe for the mother and the newborn, there is not enough evidence to make real clinical judgments<sup>(15,25)</sup>. Authors seem to agree that AE continues to be the gold standard for pain relief, but they do not rule out TENS when used in combination with nitrous oxide, given that some studies show a decrease in pain intensity during the different stages of labor<sup>(15,29)</sup>.

### **The usefulness of complementary therapies**

Thus, given the availability of the different techniques mentioned above, many studies reached the consensus that they should be offered in advance<sup>(29,30)</sup>. Prenatal education with CT training is an effective and viable method to manage pain and reduce medical interventions. This novel approach consists of a unique set of tools for women and couples to practice during pregnancy and labor. Furthermore, providing different options for the pregnant woman to manage her pain during labor and delivery favors more humanized, safe, and quality obstetric care<sup>(19,29,30)</sup>.

Pain relief in labor is an essential aspect of the labor process and every woman should have access to a wide variety of CTs, which offer multiple benefits<sup>(15,19)</sup>.

Most women define the pain of childbirth as the most intense pain they have experienced. Alleviating this pain completely or largely implies a great challenge for the professionals accompanying women during this process<sup>(25)</sup>.

In the process of overcoming the biomedical paradigm treasured during the last decades, increasingly more women demand more respectful delivery assistance<sup>(30)</sup>. Integrating the social reality and the access to information and knowledge of each pregnant woman is the foundation of their decision-making process. For all of the above, learning and understanding the different methods that can provide adequate pain management is a necessity, as is receiving proper training to provide quality care, according to the unique and specific situation of each woman. In addition to this, we must not forget the importance of sharing complete and up-to-date information based on the best scientific evidence available, so that they can freely choose which method suits them and which they wish to use<sup>(15,29)</sup>.

Some of the studies reviewed contemplate the combination of different techniques, contributing to increasing their effectiveness and achieving better results. Likewise, women can use them autonomously, improving their self-confidence, control, and well-being<sup>(15,26)</sup>.

Finally, regarding the debate about pharmacological and complementary therapies, the literature concurs with the effectiveness of CTs in childbirth; however, further research is needed<sup>(19,20,29)</sup>. We have not detected any case in which CTs alone have caused harm. Therefore, obtaining substantial evidence allows us to identify the

benefits and possibilities of these techniques and establish protocols and guidelines for maternity care.

In future lines of research, conducting studies with a larger sample and specifically focused on each therapy will help obtain clearer results. Considering the benefits exposed in this review, additional studies should also focus on determining the effectiveness and outcomes regarding the intensity and satisfaction of pain relief.

## CONCLUSION

Upon the identification of complementary therapies available, we analyzed their advantages and disadvantages, taking into account that, currently, EA is the most widely used therapy for pain relief, given its rapid action and great effectiveness. Therefore, we reassert that it is the method of choice.

However, CTs for pain management offer potential results, especially due to their unique quality of alleviating or eliminating pain while allowing assessing and treating women through an integral approach. Thus, they contribute to understanding pregnant women holistically and respecting their beliefs regarding the best treatment, which constitute key considerations in excellent nursing practice.

Consequently, we conclude that complementary therapies are useful resources that offer significant benefits, as long as those administering them or supervising their administration, as well as the parturient, have received relevant training.

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