









REVIEW

## Chromotherapy as an integrative and complementary practice for reducing pain in childbirth care

### La cromoterapia como práctica integradora y complementaria para reducir el dolor en la atención al parto

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#### ABSTRACT

**Introduction:** labor is characterized by involuntary and coordinated uterine contractions, facilitated by oxytocin, which lead to dilation of the cervix and expulsion of the fetus. Pain during labor is physiological and varies between pregnant women, being associated with dilation and distension of the pelvic structures. Non-pharmacological techniques, such as chromotherapy, are used to relieve pain and promote well-being. They stand out for their analgesic and calming properties, helping to reduce the use of medication and providing a more comfortable experience for the parturient woman. To identify chromotherapy as an Integrative and Complementary Practice in pain relief during childbirth.

**Method:** this is an integrative literature review of a descriptive and exploratory nature, analyzing the use of chromotherapy in labor and delivery.

**Results:** non-pharmacological methods (NPM), such as chromotherapy, offer benefits such as pain relief and stimulation of dilation, but face barriers due to lack of knowledge. Obstetric nurses play a key role in the use of these methods.

**Conclusion:** the study concluded that although there is limited scientific evidence on some practices, such as chromotherapy, its benefits are clear. As an Integrative and Complementary Practice (ICP), chromotherapy has been shown to be effective in reducing pain during labor, relieving anxiety and stress, and facilitating dilation, providing greater comfort and well-being for the parturient. However, more research is needed to deepen our understanding of this technique and its effects.

**Keywords:** Color Therapy; Nursing; Labor.

#### RESUMEN

**Introducción:** el parto se caracteriza por contracciones uterinas involuntarias y coordinadas, facilitadas por la oxitocina, que conducen a la dilatación del cuello uterino y a la expulsión del feto. El dolor durante el parto es fisiológico y varía entre las gestantes, estando asociado a la dilatación y distensión de las estructuras pélvicas. Para aliviar el dolor y promover el bienestar se utilizan técnicas no farmacológicas, como la cromoterapia. Destacan por sus propiedades analgésicas y calmantes, ayudando a reducir el uso de medicación y proporcionando una experiencia más confortable a la parturienta. Identificar la cromoterapia como Práctica Integrativa y Complementaria en el alivio del dolor durante el parto.

**Método:** se trata de una revisión bibliográfica integradora de carácter descriptivo y exploratorio, en la que

se analiza el uso de la cromoterapia en el parto.

**Resultados:** los métodos no farmacológicos (MNF), como la cromoterapia, ofrecen beneficios como el alivio del dolor y la estimulación de la dilatación, pero se enfrentan a barreras por falta de conocimiento. Las enfermeras obstétricas desempeñan un papel clave en el uso de estos métodos.

**Conclusión:** el estudio concluye que, aunque la evidencia científica sobre algunas prácticas, como la cromoterapia, es limitada, sus beneficios son claros. Como práctica integrativa y complementaria (PIC), la cromoterapia ha demostrado ser eficaz para reducir el dolor durante el parto, aliviar la ansiedad y el estrés y facilitar la dilatación, proporcionando mayor comodidad y bienestar a la parturienta. Sin embargo, es necesario seguir investigando para profundizar en el conocimiento de esta técnica y sus efectos.

**Palabras clave:** Terapia del Color; Enfermería; Parto.

## INTRODUCTION

Labour is characterized by the onset of involuntary and coordinated contractions, resulting in the dilation of the cervix which, together with the voluntary force of the abdomen, allows the fetus to be expelled. The hormone present in this process is oxytocin, which is essential for uterine contraction to be stimulated. During this process, countless bone, muscle and ligament structures are adjusted to help the baby be born with the help of the active forces provided by the abdominal muscles and the uterus, in parallel with the opposing forces provided by the pelvic bones and the pelvic floor muscles until the moment when the newborn (NB) has been expelled completely.<sup>(1)</sup>

In vaginal labor, pain is physiological and is associated with the movements of uterine dilation and contraction, distension of the uterus and the other structures that make up the pelvic floor. It is seen as an acute discontinuous pain, which comes with the contraction and expands its power until it reaches its maximum level with the birth of the fetus, and it varies from pregnant woman to pregnant woman and from pregnancy to pregnancy.<sup>(1)</sup>

Trained professionals are essential in the parturition process, since they adopt good practices to help reduce occurrences of obstetric violence and develop humanization, providing women with a high level of contentment at the time of delivery, during pregnancy and in the puerperium.<sup>(2)</sup> According to the guidelines of the Specific Competencies of the Maternal and Obstetric Health Nurse Specialist (SMOHN), a safe environment should be guaranteed during labor, since “gains in skills in non-pharmacological pain relief strategies” is designated as a quality indicator standard for care trained in maternal and obstetric health nursing.<sup>(3)</sup>

In childbirth, the use of these techniques promotes self-esteem and self-care, acting as a means of intervention for women in order to reduce the effects of pregnancy, such as pain, anxiety and fear, emphasizing the influence of women to be protagonists in their childbirth, generating capacity for the management of their body and their health.<sup>(4)</sup>

Non-pharmacological practices such as those found in Traditional Chinese Medicine (TCM) have been applied for thousands of years. It is a method originating in China that uses the representative language of the laws present in nature, estimating the harmonious interrelationship and aiming for integrity, which is a principle of the Unified Health System (UHS). In light of this, the National Policy for Integrative and Complementary Practices (NPICP) was implemented in the UHS through ministerial ordinances N° 971, May 3, 2006 and N° 1.600, July 17, 2006, using conduct that aims to encourage the use of natural methods for the prevention of diseases and recovery of health, through appropriate and safe technologies, highlighting the reception, the evolution of the therapeutic link and the insertion of the human being with the environment and society.<sup>(1)</sup>

Chromotherapy was recognized as a complementary therapy in 1976 by the World Health Organization (WHO) and is considered one of the fundamental techniques in the treatment of mental and physical illnesses, making it possible to build a more welcoming place for the patient's safety and well-being.<sup>(4)</sup> Originating from ancient traditions and then strengthened by the scientific study of light, chromotherapy seeks to induce and restore physical and energetic balance, bringing harmony between the mind, emotions and body. It can be handled in various ways: by contact, with the aid of instruments, in light booths, with polarized light, by visualization and by meditation, since the deviation of the body's vibratory energy is to blame for stimulating new illnesses.<sup>(5)</sup>

It is based on the treatment characteristics of the seven colors of the rainbow explained by the combination of the sun's rays with the rain droplets still in the atmosphere, as if the droplets turned into a prism and when they came into contact with the sun's rays, they reflected the different colors. Chromotherapy is a therapy that has been used for hundreds of years, by peoples such as the Babylonians and the Egyptians who used different colored fabrics in the window, believing in the healing capacity of color and light.<sup>(1)</sup>

Each color has its own recommendations and restrictions, for example: yellow can reduce nausea and needs to be avoided in cases of inflammation or infection; red has the function of boosting uterine contractions,

but is contraindicated in cases of fever, tachycardia, hypertension; green has the benefit of calming, but can intensify fatigue; orange has the function of reviving mood and helping with childbirth, but it is recommended to avoid it in cases of thrombosis; violet acts to control the irritability of the pregnant woman, and should not be used in situations of hypoglycemia and can also slow down labor. Among all the colors, the one that is not contraindicated and has the greatest therapeutic effect is blue, which acts on the principle of analgesia, reduces blood pressure, minimizes respiratory movement and prevents the discharge of adrenaline; indigo acts on the affection and wisdom of the procedure, leading to a meditative state.<sup>(1)</sup> Thus, in addition to being a non-invasive method with few contraindications, its use helps to delay the use of drugs, enabling women to be satisfied during labor.<sup>(6)</sup>

**Objective:** To identify chromotherapy as an Integrative and Complementary Practice in pain relief during childbirth.

**METHOD**

This is an integrative review of the literature of a descriptive exploratory nature of data analysis that seeks to analyze the use of chromotherapy in labor. Data was collected in January 2024 and stored using the “Rayyan®” application on a personal Lenovo notebook for later analysis. The search took place in the following electronic databases: MEDLINE, Virtual Nursing Library (BDENF), Latin American and Caribbean Health Sciences Literature (LILACS), Virtual Health Library - Traditional Complementary and Integrative Medicines (BVS MTCI) and Google Scholar. The subject descriptors used were: Color therapy, Nursing and Labor, and the Boolean operator “AND” was used to cross-reference the descriptors: Nursing “AND” Color therapy; Nursing “AND” Labor and Color therapy “AND” Labor.

The inclusion criteria were articles in Portuguese, English and Spanish, published in the last 10 years with the full text available. Articles whose text was incomplete, which were not original, dissertations, theses, with more than ten years of publication and which did not correspond to the databases described above were excluded. The research was carried out in three stages: problem identification, literature search and selection, and inclusion, with the guiding question being: “What is the evidence in scientific publications on chromotherapy as an Integrative and Complementary Practice (ICP) in childbirth care over the last 10 years?”. To delimit the project, we used the PCC strategy, which consists of a specific strategy for exploratory approaches to the topic to be addressed. Where P (Population): Parturients; C (concept): Chromotherapy practice and C (context): chromotherapy in childbirth care, as described, below (table 1).

The articles were screened in tiers, with the first tier excluding articles based on the title and abstract, and the second tier reviewing all the articles to see if they met the inclusion criteria. A reviewer was also used in the selection to increase the fidelity of the articles selected, to the point of avoiding disagreements.

To check the quality of the article, risk of bias tools such as the Cochrane Risk of Bias Tool or the Newcastle-Ottawa Scale were not used, as this was an integrative review and not a systematic literature review. However, they were reviewed by another reviewer who took part in the work so that any disagreements could be resolved.

Data was extracted and collected using the free Rayyan ® platform for screening and categorizing articles in systematic reviews, but it can also be useful in integrative reviews.

Data collection and analysis was carried out using the PRISMA® flowchart, following the recommendations of the protocol (figure 1).

The authors declare that they have no conflicts of interest that could influence the results of this study.

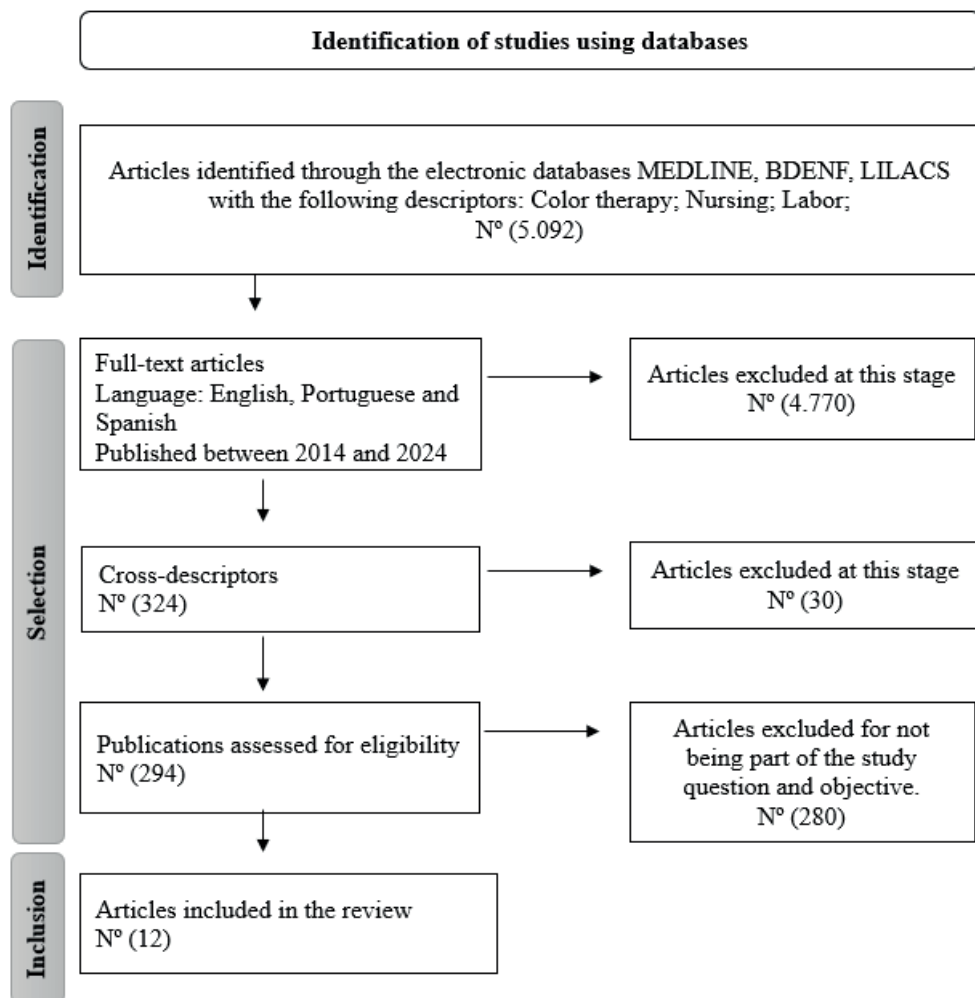
Table 1. PCC research design strategy	
P	Parturients
C	Chromotherapy practice
C	Chromotherapy in childbirth care

**RESULTS AND DISCUSSION**

Studies centered on bibliographic research aim to highlight scientific collaborations on a theme or event. In order to select the articles, the descriptors were cross-referenced. Based on the results, a quantification was carried out so that we could identify and count the number of studies included in the Virtual Health Library (BVS) on chromotherapy as an integrative and complementary practice in childbirth care over the last 10 years. However, the number of studies covering the whole topic was not satisfactory, which is why the table also included subjects related to the topic studied and which would enrich the work (table 2). The data was analyzed and collected using the PRISMA® flowchart, as recommended in the protocol<sup>(7)</sup> (figure 1).

A total of 10 articles were found in the MEDLINE, LILACS and BDENF databases, after which the filters were applied, resulting in 1 article which, after being read in its entirety, was not used as a research substrate because it did not fit in with the research objective and question, with the following descriptors “Nursing” AND

“Color therapy”.



**Figure 1.** Flowchart of bibliographic information obtained at different stages of the systematic review

In the second search, 5082 articles were found in the MEDLINE, LILACS and BDENF databases. After applying the filters, 323 articles were found, followed by an analysis resulting in 14 articles that will form part of this study using the descriptors “Nursing” AND “Labor”.

In the third and final search, no articles matching the descriptors “Labor” AND “Color therapy” were found in the MEDLINE, LILACS and BDENF databases.

**Table 2.** Summary of the articles analyzed

Autor/year	Syntheses
Rodrigues, Lívia Shélida Pinheiro. <i>et al.</i> 2019. <sup>(8)</sup>	This article analyzes the knowledge of eight nurses about labor in a low-light environment, where they report that the practice provides concentration, tranquility and a humanized place with few interventions. Therefore, they point to the lack of preparation of parturients, the lack of knowledge on the part of the professionals presents and the poor infrastructure of the hospital as challenges, highlighting the importance of the need for training and improvement of the space provided to promote a safe and humanized childbirth.
Almeida, Janie Maria de. <i>et al.</i> 2015. <sup>(9)</sup>	The article analyzed pregnant women’s knowledge of non-pharmacological methods (NPM) for reducing pain. The majority of parturients were young, primiparous, unemployed and had little understanding of the methods. The warm bath was the most widely used and known practice. Despite the lack of explanation during prenatal care, some pregnant women used NPM during labor and reported pain relief. This article does not mention the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.

Camacho, Elyade Nelly Pires Rocha. <i>et al.</i> 2019. <sup>(10)</sup>	The study analyzes the understanding and use of NPM to reduce pain during labor among 20 obstetric nurses. All of them understood the practices, but 17 presented obstacles to their use due to lack of resources and increased workload. Warm bath, bobath ball, ambulation, horseback riding, breathing exercises and lumbosacral massage. Despite the proven benefits, the use of these practices is restricted by the hospital routine and inadequate infrastructure. This article makes no mention of the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Hanum, Samira dos Passos. <i>et al.</i> 2017. <sup>(11)</sup>	In this study, the warm bath was the most used and best evaluated practice, followed by breathing exercises and lumbosacral massage. Therefore, 95,2 % of the interviewees described a reduction in pain, with the companion being the main person responsible for applying the methods. Most of the women interviewed in this study were young, multiparous, in a stable union, 99 % had prenatal care, but 73,8 % had not been instructed on NPM to reduce pain during labor. This article does not mention the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Mascarenhas, Victor Hugo Alves. <i>et al.</i> 2019. <sup>(12)</sup>	The article analyzed NPM in reducing labor pain, highlighting acupuncture, Swiss ball, and hydrotherapy as the most used. Hydrotherapy and a sprinkling bath were used to relieve stress and pain, the Swiss ball helped to reduce pain and speed up labor, and acupuncture is effective for relaxation. Music therapy, aromatherapy and breathing techniques have benefits in reducing pain and improving the experience of labor, especially when combined and used with the support of the team. There is no mention in this article of the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Gür, Elif Yagmur. <i>et al.</i> 2020. <sup>(13)</sup>	The article proved that the use of virtual reality (VR) during childbirth considerably reduced the pain of pregnant women. The use of visual stimuli such as photos and videos of newborns with classical music proved to be more effective in reducing pain than conventional practices such as music or informational videos. There is no mention in this article of the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Pieszak, Greice Machado. <i>et al.</i> 2015. <sup>(14)</sup>	This article looked at nurses' understanding of pain during labour, emphasizing the uniqueness of each individual and the importance of humanized care. It was identified that the lack of family support and emotional fragility amplified the pain, and the presence of a companion was crucial to the comfort of the parturient, emphasizing the urgency of improving health education during prenatal care, promoting autonomy and guaranteeing the rights of pregnant women. This article does not mention the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Barbosa, Jheiser Martins. <i>et al.</i> 2023. <sup>(15)</sup>	The article highlights the effectiveness of NPM, such as massage, baths, chromotherapy and aromatherapy in reducing the pain of childbirth, allowing for relaxation and a more positive experience. The role of the obstetric nurse in using these methods is essential, promoting the humanization of childbirth and respecting the autonomy of the pregnant woman. These practices help to reduce pain and speed up labor. This article does not mention the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Gomes, Edilma Correia Honorato. <i>et al.</i> 2018. <sup>(16)</sup>	The study shows that NPM, such as warm baths, massages and breathing exercises, are effective in reducing the pain of labor, helping to ensure a comfortable and peaceful experience, and that the role of the SMOHN in using these techniques is fundamental. There is no mention in this article of the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Lehuteur, Danielle. <i>et al.</i> 2017. <sup>(17)</sup>	The article highlights that practices such as breathing techniques, massages and changing positions are fundamental to promoting comfort and a more humanized labor. The study reinforces that the use of these practices reduces the use of medical interventions and the length of labor, as well as reducing suffering for both the mother and the newborn, providing a satisfactory birth experience. This article does not mention the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Souza, Bruna de. <i>et al.</i> 2021. <sup>(18)</sup>	The study analyzed the use of NPM in 269 women treated at a normal birth center. 59 % of the pregnant women used the practices, the warm bath was the most used in 40,6 % of the parturients, in 16,2% the most used practice was relaxation and breathing, while 14,4 % used the practice of walking. Although NPM is beneficial at the time of parturition, it is still underused due to a lack of preparation and knowledge on the part of the health team. This article does not mention the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.
Klein, Bruna Euzebio. <i>et al.</i> 2022. <sup>(19)</sup>	The study analyzed the use of NPM during labor among 560 pregnant women at a university hospital. 29,3 % used at least one of the methods, 24,5 % used hydrotherapy, 22,1 % changed positions and 22,1 % used breathing exercises, which were the most common. The article observed a relationship between the use of the methods and positive maternal and child outcomes, reducing the use of anesthesia and the rate of episiotomy, but adherence to these practices is still low, showing the need for training of health professionals and knowledge on the part of pregnant women. This article does not mention the use of chromotherapy as an Integrative and Complementary Practice in childbirth care.



According to Mascarenhas *et al* (2019) and Piezask *et al* (2015), pregnancy is seen as a special event in a woman's life, a delicate moment with biological, emotional, social and subjective changes, encompassing not only the pregnant woman, but also her spouse and family. The pain caused by labor is linked to the increased intensity and repetition of contractions, resulting in gradual dilation of the cervix and fetal descent.<sup>(12,14)</sup>

According to Souza *et al* (2021) and Klein *et al* (2022), the beneficial experience and the choice of normal childbirth is linked to positive reports from family members and women close to the parturient, especially her mother, but those who witness negative reports are subject to fear, anxiety and insecurity, making the experience of childbirth painful and long-lasting. Fear of childbirth is related to pain, which afflicts parturients, making it one of the main reasons why women opt for a caesarean section, or why they change their minds about how to give birth during pregnancy.<sup>(18,19)</sup>

According to the authors, NFP is beneficial to women, but there are still many obstacles to its implementation, such as a lack of knowledge and a lack of interest, both on the part of the woman giving birth and on the part of the professionals. The low level of interest in these techniques stems from a lack of information. The importance of managers' commitment is highlighted, so that their team recognizes NFP as an important and valuable intervention, and that through the recommendations of good practice they can improve the help that is offered.<sup>(18,19)</sup>

The obstetric nurse's role in assisting women during labor is fundamental, aiming to entertain the companion during this and the other phases by teaching them how to use NPM, especially chromotherapy, which is an autonomous aid provided by the nurse, so that the pregnant woman does not only emphasize pain, but also the physiological signs of labor.<sup>(16)</sup>

According to Thomson *et al* (2019), NFP may not completely eliminate the pain of labor, but they enable women to actively act on their physiological responses, favoring a bond of trust between the parturient and the team, especially the obstetric nurse. Thus, with a relationship of trust established between the parturient and the nurse, together with complementary therapies, the moment of childbirth becomes more serene, integral and humanized.<sup>(20)</sup>

Gomes *et al* (2018) understands that obstetric nurses must have the ability and understanding to practice non-pharmacological methods, so that they can provide humanized assistance, reducing the time of labour, relieving pain, and reducing stress and anxiety levels, respecting the physiological characteristics of women and favoring the emotional bond between mother and baby.<sup>(16)</sup>

The theory that supports the services provided by the obstetric nurse to the pregnant woman/partner is Katharine Kolcaba's theory of comfort, since by using NPM, in this case chromotherapy, the nurse promotes comfort for the woman in labor, providing reliability between the two, making the experience positive and meeting the expectations of the parturient woman.<sup>(21)</sup>

Gomes *et al* (2018) considers that nursing care must be efficient to the point of building a welcoming place to preserve the vital energy of the parturient woman. From the study, it is possible to understand the indications for the professional execution of the obstetric nurse bringing security to illuminate the place where the pregnant woman is with the blue light that together with the silence, brings the feeling of well-being to the women, allowing privacy and making them feel comfortable to expose their emotions.<sup>(16)</sup>

According to Barbieri *et al* (2015), the use of colors is an alternative therapeutic approach recommended for reducing pain, stimulating dilation and managing irritability during the delivery process, as described in the table below (table 3).<sup>(22)</sup>

**Table 3.** Use of chromotherapy in labor

Color	Indication	Contraindications
Yellow	Reduce nausea	Inflammation, infection, gastritis or ulcer.
Red	Boost uterine contractions.	Tachycardia, fever, hypertension, muscle cramps and emotional tension.
Green	Calming without slowing down the process, dilation of the cervix, regulates blood pressure, slight contraction of involuntary muscles.	Intense fatigue.
Orange	Recovery of spirits, improves mood during labor.	Thrombosis.
Violet	Controls irritability.	Hypoglycemia, may slow down labor.
Blue	Analgesia, lowers blood pressure, minimizes respiratory movement and prevents the discharge of adrenaline.	No contraindications.
Índigo	Acts on the affection and wisdom of the procedure, leading to a meditative state; in the aftermath helps with coagulation and dequitation.	No contraindications.

According to Vargens et al (2012), it is essential to consider the demedicalization of childbirth, because it is through this reflection that nurses begin to shape their own practice and perceive themselves as agents of transformation, capable of changing the environment in which they work, making childbirth a more personalized and humanized experience, offering care to the parturient independently.<sup>(23)</sup>

## CONCLUSION

This study has shown the extreme relevance of the use of NPM in reducing pain during labor and also its continuous development, both in terms of research and its practical application and benefits.

It was possible to note and conclude that there is still limited scientific evidence on the application of some of these strategies, such as chromotherapy. Considering chromotherapy as an Integrative and Complementary Practice (ICP), despite the limited scientific evidence, its benefits are evident, as well as those of various ICPs in general, especially in promoting pain reduction at the time of labor, relieving anxiety and stress, and facilitating dilation, resulting in greater comfort and well-being for the parturient, making each birth a unique and personalized experience.

Therefore, further studies are needed to understand the use of chromotherapy and its benefits, enabling academic and professional development for nurses who seek a more humanized experience in their care, offering pregnant women the option of accepting or not accepting medication and eliminating the stigma of the need for medication.

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