

NON-PHARMACOLOGICAL METHODS FOR PAIN RELIEF DURING LABOR: INTEGRATIVE REVIEW

MÉTODOS NÃO FARMACOLÓGICOS PARA ALÍVIO DA DOR NO TRABALHO DE PARTO: REVISÃO INTEGRATIVA

MÉTODOS NO FARMACOLÓGICOS PARA ALIVIAR EL DOLOR DURANTE EL PARTO: REVISIÓN INTEGRADORA

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ABSTRACT

This integrative review aimed to search available evidences on literature about non-pharmacological methods for pain relief during labor. The database used were LILACS, SCIELO, BDNF e PUBMED. Among the reviewed literature, 19 studies published between 2003 and 2013 were included and evaluated: percutaneous electrical stimulation, breathing exercise technique, walking or changing position, massage, muscular relaxation, hydrotherapy, cryotherapy and doula assistance. The results showed that the use of percutaneous electrical stimulation is more frequent during beginning of the first phase of labor; other associated methods (lumbosacral massage, breathing exercise and relaxation), hydrotherapy and cryotherapy propitiated the reduction of pain scores in the active phase; doula participation was also considered important for transmitting security and confidence to the parturient. Thus, these methods bring to the conclusion that valuing women's freedom, offering alternatives and comfort measures, is an important way on assisting the parturient during labor.

Keywords: Labor, Obstetric; Labor Pain; Complementary Therapies; Obstetrical Nursing.

RESUMO

A presente revisão integrativa objetivou a busca de evidências disponíveis na literatura que abordem os métodos não farmacológicos para alívio da dor durante o trabalho de parto por meio de pesquisa nas bases de dados LILACS, SCIELO, BDNF e PUBMED. Na literatura levantada incluem-se 19 estudos publicados entre os anos de 2003 e 2013, que avaliaram: a eletroestimulação transcutânea, a técnica de exercício respiratório, a deambulação ou mudança de posição, a massagem, o relaxamento muscular, a hidroterapia, a crioterapia e a assistência da doula. Os resultados demonstraram que o uso da eletroestimulação transcutânea é mais recorrente no período referente ao início da primeira fase do trabalho de parto; outros métodos associados (massagem lombossacral, exercício respiratório e relaxamento), a hidroterapia e a crioterapia propiciaram, por seu turno, a redução dos escores de dor na fase ativa; enquanto que a presença da doula foi considerada importante para a transmissão de segurança e confiança às parturientes. Assim, tais métodos conduzem para a conclusão de que valorizar a liberdade da mulher, oferecendo-lhe alternativas e medidas de conforto, é uma importante via na assistência à parturiente em seu trabalho de parto.

Palavras-chave: Trabalho de Parto; Dor do Parto; Terapias Complementares; Enfermagem Obstétrica.

RESUMEN

Se trata de una revisión integradora que busca evidencias disponibles en la literatura que enfoca métodos no farmacológicos de alivio del dolor durante el parto a través de la búsqueda en las bases de datos LILACS, SCIELO, BDNF y PubMed. En la literatura explorada se seleccionaron 19 estudios publicados entre 2003 y 2013 que evaluaron la electroestimulación transcutánea, la técnica de respiración, la deambulación o cambio de posición, el masaje, la relajación muscular, la hidroterapia, la crioterapia y la asistencia de la matrona. Los resultados mostraron que el uso de la electroestimulación transcutánea es más común al principio del trabajo de parto; otros métodos asociados (masaje lumbosacra, ejercicios de respiración y relajación), hidroterapia y crioterapia también redujeron las puntadas de dolor en la etapa activa. La presencia de la matrona fue considerada importante por transmitir seguridad y confianza a las parturientas. Así, estos métodos nos indican que es importante ofrecerles alternativas y opciones de comodidad a las parturientas durante el trabajo de parto, siempre valorando la libertad de la mujer.

Palabras clave: Trabajo de Parto; Dolor de Parto; Terapias Complementarias; Enfermería Obstétrica.

INTRODUCTION

Labor is considered a natural phenomenon, however it has been shown that pain which accompanies it, is a subjective and complex experience that varies from individual to individual. Therefore, the parturient should not be criticized by her unpreparedness during labor and delivery, since each woman lives this moment differently, which should lead professionals to respect her individuality, and this conduct must be part of the actions of care established in the institutions which offer this service.

Pain during the course of labor is a common symptom in the stage before delivery and, unlike other acute and chronic pain experiences, this pain is not associated with disease but with the reproductive cycle of a woman. Then, its characteristics may involve biological, cultural, socioeconomic and emotional aspects.¹ It is the obstetric nurse's and other professionals' working in delivery care job to promote assistance in order to reduce stressors and possible preparedness faced by women in labor, by providing them information and strategies that bring the safety and comfort needed.

Non-pharmacological methods (NPMs), encouraged by the World Health Organization (WHO) in their recommendations for care in normal labor are classified by it as "conducts that are clearly useful and should be encouraged",² and they are strategies used during labor to increase tolerance to pain. According to Merhy and Onocko³ classification, such methods can be classified as soft-hard technology and relate to the professional's knowledge structured as clinics, epidemiology, among other areas, being organized according to the professional's role in the process of work.

Searching to justify the use of NPMs by obstetric nurses and other professionals in the care of pregnant women, and desiring to contribute to the humanization of this stage, we propose ourselves to search scientific evidence about their use for pain relief of labor through alternatives evaluated according to the available literature.

METHODS

This is an integrative review study,⁴ which aims to gather and synthesize results of a search on a specific theme, in a systematic and orderly manner, being an instrument for deepening knowledge, allowing the synthesis of multiple published studies and general conclusions about a particular area of study.

To guide this integrative review, the following guiding question was formulated: "What is the scientific evidence for the use of NPMs during labor for pain relief?"

The literature search was performed through access to the electronic databases LILACS, SCIELO, BDENF and PUBMED. The search for articles was conducted in the Program for Access to Electronic Information and the Capes Electronic Journals Portal, in the search system of the Electronic Library of a university in

the state of Sao Paulo. In the case of the PUBMED database, the search was performed using "with full text" tool. Key words from DECS and the Boolean AND were used, resulting in the following combinations: "labor and labor pain" and "labor and complementary therapies", used in Portuguese, English and Spanish.

Thus, articles in Portuguese, English and Spanish, published between August 2003 and August 2013, that described the use of NPMs for pain relief during labor, were included from reading their titles and abstracts when available. Review articles, updating articles and experience reports were excluded.

Data collection was conducted with an instrument developed by the researchers, and applied for each article of the final sample of this review. The instrument was composed of the following parameters: title, year, journal, database, authors, identification of the professional who applied the treatment, study site, methods, sample characteristics, NPMs studied, main findings, conclusion and level of scientific evidence. The level of evidence of studies was assigned based on the classification proposed by Nursing Scholars⁵ who developed a hierarchical classification of quality of evidence for evaluation of research and/or other source of information.

The presentation of results and general discussion about NPMs were written in a descriptive manner, allowing the reader to assess the applicability of the developed integrative review, aiming to achieve the objective of this study.

RESULTS

The literature search, performed in September of 2013, resulted in the final sample of this integrative review, consisting of 19 studies (Table 1).

Table 1 - Number of articles found according to databases and inclusion criteria – Campinas, 2013

	LILACS	SCIELO	BDENF	PUBMED	Total
Articles found	101	44	36	192	373
Does not address the theme	59	27	15	178	279
Does not use NPMs	14	3	8	2	27
Review studies	9	3	1	4	17
Repeated	3	10	11	5	29
Not available in full text	1	0	1	0	2
Total selected	15	1	0	3	19

The selected studies are mainly from nursing journals (9/19 - 47.5%), followed by journals specific to obstetrics (6/19 - 31.5%), and pain (6/19 - 31%). The nursing professional highlights, among other professionals, both in production of studies and in the application of NPMs (9/19 - 47.5%). It should also be noted that most studies found are from Brazil (Table 2).

Table 2 - Characteristics of selected studies – Campinas, 2013

Authors	Journal	Year	Data Base	Professional who applied	Study Site
Orange <i>et al.</i> ⁶	Rev Bras Ginecol Obstet.	2003	Lilacs	Anesthesiologist	Pernambuco, Brazil
Almeida <i>et al.</i> ⁷	Rev Enferm. UERJ	2004	Lilacs	Nursing Professional	Goiás, Brazil
Knobel <i>et al.</i> ⁸	Texto Contexto Enferm	2005	Lilacs	Obstetrician	Santa Catarina, Brazil
Almeida <i>et al.</i> ⁹	Rev Latino-am Enfermagem	2005	Lilacs	Nurse	Goiás, Brazil
Bio <i>et al.</i> ¹⁰	Revista Bras de Ginecol e Obst.	2006	Scielo	Physiotherapist	Sao Paulo, Brazil
Davim <i>et al.</i> ¹¹	Rev Latino-am Enfermagem	2007	Lilacs	Nurse	Rio Grande do Norte, Brazil
Mamede <i>et al.</i> ¹²	Rev Latino-am Enfermagem	2007	Lilacs	Nurse	Sao Paulo, Brazil
Nunes <i>et al.</i> ¹³	Rev Enferm. UERJ	2007	Lilacs	Obstetric Nurse	Rio de Janeiro, Brazil
Santos <i>et al.</i> ¹⁴	REME Rev Min Enferm	2007	Lilacs	Nurse and person accompanying	Minas Gerais, Brazil
Böing <i>et al.</i> ¹⁵	Femina	2007	Lilacs	Physiotherapist	Santa Catarina, Brazil
Chao <i>et al.</i> ¹⁶	Pain	2007	Pubmed	Nurse	Taoyuan, Taiwan
Pugin P. <i>et al.</i> ¹⁷	Rev Chil Obstet	2008	Lilacs	Doula	Santiago, Chile
Kimber <i>et al.</i> ¹⁸	Eur J Pain	2008	Pubmed	Midwife and Person accompanying	Oxfordshire, England
Davim <i>et al.</i> ¹⁹	Rev Esc Enferm USP	2009	Lilacs	Nurse	Rio Grande do Norte, Brazil
Miquelutti <i>et al.</i> ²⁰	Rev Bras Saúde Mater Infant.	2009	Lilacs	Multidisciplinary	Sao Paulo, Brazil
Chaichian <i>et al.</i> ²¹	Arch of Iranian Med	2009	Pubmed	Obstetrician	Tehran, Iran
Abreu <i>et al.</i> ²²	Rev Dor	2010	Lilacs	Physiotherapist	Piauí, Brazil
Wei <i>et al.</i> ²³	Texto Contexto Enferm	2011	Lilacs	Nurse	Sao Paulo, Brazil
Santana <i>et al.</i> ²⁴	Rev Dor	2013	Lilacs	Physiotherapist	Sao Paulo, Brazil

The results of the publications were described through grouping of NPMs with studies related, in order to better organization and discussion of information found. Visual Analog Scale (VAS) for pain assessment, graded from zero to 10, in which zero represents no pain and 10 unbearable pain was used in almost all studies, and in some cases, the scale was used for evaluation of more than one NPM.

TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION (TENS)

Four studies^{6,8,16,22} which applied TENS during labor for pain relief were included. The first one, a randomized clinical trial (RCT)⁶ evaluated 22 parturients, being 11 allocated to the control group (CG) without the use of TENS. Values scored by VAS in both groups did not show differences throughout labor, although the time elapsed between assessment of pain and necessity of combined anesthesia (spinal anesthesia + epidural anesthesia) was significantly higher in the TENS group (90 minutes) versus the CG (30 minutes), $p=0.04$.

Another RCT⁸ divided 60 parturients in three groups, one of them a placebo. The first group of this study used electrode plate type that, in just 10 minutes of treatment provided pain relief in eight of the 20 parturients ($p=0.04$); the second group

used electrodes of the Silver Spike Point (SSP) model that showed responses of pain reduction significant in all the evaluations (with 10, 30, 60 and 120 minutes), managing the intensity of TENS individually for each woman. The placebo group received fake electrodes with minimum electrical stimulus. In general, more than half of women who received real treatment reported some pain relief compared to placebo group.

The third RCT selected¹⁶ evaluated 100 participants with cervical dilation ≤ 5 cm, being in the Experimental Group (EG) the TENS maintained between 10 and 18 milliamps (mA); while in the placebo group the intensity was lower than 5 mA. The average score of referred pain by VAS was lower in the EG (4.5) when compared to placebo (7.0), $p<0.001$ at 30 minutes and with 60 minutes in the EG (6.0) versus placebo (7.5), $p<0.001$. The scores ≤ 3.0 points in VAS between the groups were different after treatment (EG 62% versus placebo 14%), $p<0.001$.

Finally, the TENS evaluated in another RCT²², in which 10 pregnant women were allocated to each group, the EG received conventional stimulus, expecting production of a very noticeable paresthesia, but without muscle contraction. In the results presented, the EG reduced the pain score (8.9 ± 1.3 before treatment versus 6.88 ± 2.3 after), on the other hand, the placebo group increased pain score in these intervals (8.1 ± 1.0 before treatment versus 8.88 ± 1.0 after), $p=0.022$.

BREATHING EXERCISE

The technique of breathing exercise was evaluated in four studies^{7,9,14,15}, and in three of them there was the association between the exercise and muscle relaxation during the intervals between contractions.^{7,9,14} In describing their findings, the authors of one of the studies⁷, conducted with 19 women in the active phase of labor (dilation \geq 4 cm), mentioned that in 47.4% of their sample, the breathing exercise led to pain relief, while 53.9% reported that muscle relaxation provided tranquility, and increased pain tolerance was described by only 23.53% of the participants. Another⁹ showed no significant differences among the groups evaluated for breathing exercise technique associated with muscle relaxation during the entire labor and according to VAS scores of pain intensity among the 36 participants.

In a case study¹⁴, women given an orientation on the process of parturition and of breathing techniques and muscle relaxation during prenatal care, through a psychosomatic approach, were subjected to interviews to research the experiences during labor and delivery. The study concluded that there was a positive interaction between both parts (professional versus patient), providing a high level of information and self-confidence, and reduced the fear of pain, evidenced in some statements.

The breathing exercise technique alone was only oriented to parturients in one of the studies included in this review.¹⁵ In its results, the average VAS pain score for the participants who practiced the supervised technique was two (mild) at 3 cm of cervical dilation, increasing until reaching the score seven (between moderate to severe) at 9 cm of dilation. In contrast, the CG at 3 cm of dilation the score was five (between moderate and intense), and at 5 cm of cervical dilation, this group referred the pain as score 10 (very severe pain), maintaining this value until the final evaluation at 9 cm of dilation.

WALKING OR CHANGING POSITION

The mobility of parturients during the active phase of labor, with cervical dilation \geq 4 cm was evaluated in a RCT¹⁰ through guidance for the participants to maintain vertical positions and to keep moving. It was observed that no pregnant woman in the EG made use of analgesics in the active phase, on the other hand, on the CG (unit usual treatment), 31 parturients (62%) needed meperidine ($p < 0.001$). All pregnant women in the CG ($n = 50$) in this study made use of some form of anesthesia, while in the EG, 12% ($n = 6$) did not require this feature ($p < 0.05$).

Another study¹² reported that at 5 cm of cervical dilation, 75 parturients had walked, on average, 993.7 meters, with a VAS pain score of 6.7. At 6 cm of cervical dilation, the average route was of 1,347.3 meters, and the pain score of 7.4; with 7 and 8 cm of dilation, the route was of 1,471.8 and 1,441.4 meters, and the pain score of 8.2 and 8.7 respectively.

The third study²⁰ in this category, involving 107 participants, showed that at 4 cm of dilation, women who presented pain score < 5.0 remained 41% of the labor time in the vertical position, compared to the CG, in which the women VAS score was > 7.0 , and remained in the same position for nearly 21% of the time ($p = 0.02$). The period of more satisfaction in maintaining the vertical position occurred at 4 and 6 cm of cervical dilation, with over 50% of time in this position, but, at 8 cm, the majority of parturients had received some type of analgesic.

The experience and perception of a group of women related to walking during labor were obtained through a qualitative approach²³, in which the data collected comprised interviews with 35 women who had children by vaginal delivery. The results show that for more than half of the interviewees, keeping moving and walking are beneficial and contribute to pain relief by withdrawing their attention from pain, due to allowing, for example, a trip to the shower to have a shower bath, improving the progress of labor. However, for other interviewees, there is the difficulty to push in the vertical position due to contractions and insecurity for fear of the newborn to appear and by accident fall on the ground.

MASSAGE

Three studies evaluated the massage technique in pregnant women during labor.^{11,18,19} Of these, two are research with just one group^{11,19} and combined the lumbosacral massage and breathing exercise with muscle relaxation, and the third¹⁶ associated the muscle relaxation technique between contractions.

From the observation that associated NPMs (lumbosacral massage, breathing exercise and muscle relaxation) were effective in three moments of evaluation assessed at 6, 8 and 9 cm of cervical dilation¹¹, another research¹⁹ obtained similar results in average pain intensity using VAS (6.4-9.1-9.9 before associated NPMs versus 4.4-7.0-8.0 after), measuring the pain at 6, 8 and 9 cm of cervical dilation respectively; $p < 0.001$.

The third study in this category is a RCT¹⁸ which associated the massage technique and muscle relaxation in the EG, using background music; muscle relaxation in the placebo group; and maintained the usual treatment of the obstetric unit for the CG, with 30 parturients in each group. In describing the results, the authors have found less likely pain scores in the EG, however, it was not statistically significant.

HYDROTHERAPY

The shower bath was evaluated in two studies of single groups^{11,19} and in both, water was offered at ambient temperature and the shower time remained at the discretion of the participants evaluated, later, by VAS.

The first study¹¹ found lower score in the evaluations at 8 and 9 cm (respectively, 9.2 before treatment versus 6.9 after; and 9.8 before treatment versus 7.3 after) $p < 0.001$; and the second study¹⁹ showed that the treatment was also effective in the two moments evaluated at 8 and 9 cm ($p < 0.001$), demonstrating pain reduction at this stage of labor.

Immersion in water was evaluated in only one RCT²¹ that made use of bath in pools of warm water during labor of 53 pregnant women in the EG, having the CG same number of participants that received the unit usual treatment. All participants in the CG used antispasmodics and analgesics, while in the EG, only the 3.8% used ($p < 0.001$). In conclusion, the authors reported that water provided relaxation of the body and a decrease in pain between contractions, in the parturients submitted to this treatment.

A clinical trial²⁴ was also included; it evaluated the efficacy of shower bath in the active phase. The study selected 34 pregnant women who received shower bath therapeutic for 30 minutes, with water temperature of 37°-39°, which provided a degree of 80 ± 20 mm before, and 55 ± 22 mm after treatment ($p < 0.01$), with reduction of pain in patients with cervical dilation from 4 to 5 cm.

CRYOTHERAPY

The effects of Cryotherapy on pain were evaluated in a study of single group¹³, with 21 parturients in the active phase, and with cervical dilation of 7 and 9 cm; occasions in which ice packs were applied in the lower back for 20 minutes. The answers of 85.71% of the participants were related to decrease, relief or better conditions to support pain in this labor stage, during contractions.

DOULAS ASSISTANCE

This is a study¹⁷ that reported the experience of a group of 160 adolescents parturients with or without being accompanied by doulas. In the EG, the group of participants who were accompanied by this professional, added to strategies to promote comfort (visualization, massage, breathing technique, among others), 85% of adolescents cited such strategies, along with the presence of doulas, as the most important assistance during labor. Regarding the perception of pain during labor, it was mentioned low pain (40% in the EG and 18.8% in the CG – without being accompanied by doulas), and severe pain (60% in the EG and 81.2% in the CG), $p < 0.001$.

DISCUSSION

The sample selected identified that journals specific to obstetrics are not among the ones which most published about

the use of NPMs for pain relief during labor. In contrast, Nursing journals are more significant in number and the nursing professionals are the majority who have studied and/or applied these methods during labor. This finding reinforces the interest of this professionals' category in promoting the use of non-invasive strategies in obstetric clinics, viewing a more humane care given.

Humanization in the care comprehends, primarily, respect to the time of each woman in the delivery process, avoiding unnecessary interventions imposed by hospital routines and recognizing a woman's own cultural aspects.²⁵

Regarding the places where these studies were developed, the Southeast region of Brazil is evidenced as a greater contributor, followed by Northeast, South and Midwest regions of the country. Only four publications included were not Brazilian, and this may be due to the use of the tool with full text in the system, in a database with larger index of journals from different nationalities.

The sample featured eight of the studies classified as RCTs as well designed^{6,8,9,14,16,18,22} and classified with the level of evidence two; five RCTs were well designed without randomization^{10,11,17,19,20} with level of evidence 3; and the others^{7,12-14,23,24} presented level of evidence four and six. The results of studies with level of evidence above two are not considered "strong evidence" by the evidence-based practice⁵, thus, contributing little for the construction of clinical guidelines.

The studies on NPMs selected through key words, databases and guiding question in this integrative review, resulted in seven groups, each one focusing on the interrelated NPMs, being: TENS, breathing exercise, walking or changing position, massage, hydrotherapy, cryotherapy, and doula assistance.

Of the four studies in which TENS was used, in one of the RCTs⁶ the participants received TENS during 90 minutes and were assessed every 30 minutes, so that the anesthesia combined was applied when the pain score of 6, according to VAS, was reported by the parturient. Although differences in the pain scores were not found in this study, the group who received TENS delayed administration of anesthesia in comparison with the CG. In other study⁸, TENS was interrupted when the parturient went to the shower bath, to the delivery room for analgesia or giving birth, she was medicated with analgesics or requested the withdrawal of treatment, having the evaluation occurred with 10, 30 and 60 minutes of treatment. In this study, the participants who received real TENS felt more comfortable and were given analgesics in smaller proportion when compared to the CG.

Pain reduction among participants of the EG in relation to the placebo, occurred in two moments of evaluation in a RCT²², and differed from other studies⁶ which recruited patients when they were visibly uncomfortable with the pain and/or with VAS higher than six points. However, in both studies^{6,22} cervical dilation was not found as a parameter, gathering

pregnant women at the beginning of labor, when, in general, the contractions may be fewer and of low intensity.

Three of these studies^{6,8,22} applied plates in the lumbosacral area to perform TENS. Another RCT¹⁶ used two acupuncture points, the BP6 (*Sanyinjiao*), located in the spleen-pancreas meridian, four fingers above the tip of the internal malleolus back part in front of tibia, and IG4 (*Hegu*), located in the large intestine meridian, in the depression between the first and second metacarpal bones on its radial site. The participants received the treatment twice for 30 minutes, with significant pain reduction in the EG, using these points.

The use of breathing exercises, diaphragmatic type, slow and deep, and its association with muscle relaxation, were characteristics described in some studies. Of these, one⁷ portrayed a large part of its sample presenting sense of physical and emotional well-being, however, it did not significantly reduce pain with the use of combined technique. Another study⁹ described in its results, not reducing the pain scores, although they have reduced anxiety in the treatment group.

A case study¹⁴ promoted six meetings during prenatal care, with guidance concerning the use of breathing techniques and muscle relaxation for labor. And it noted that the approach used previously favored interaction with the pregnant woman, providing her security and tranquility during labor. Unlike other studies, a RCT¹⁵ which applied only the breathing technique, showed in its results the reduction of pain scores according to VAS, when compared to parturients who did not receive this treatment.

In general, the authors demonstrated that the breathing exercise technique provided physical and emotional well-being or favored the interaction with the healthcare professionals team, although only one study found pain reduction in parturients who practiced this NPM.

Body mobility, changing position, sometimes standing, sometimes seated or articulating the pelvis region and relaxation of perineum, were stimulated and guided to the participants in the EG of another study¹⁰. The authors observed that changes in posture and mobility of the body resulted in positive effects, such as increased pain tolerance and reduction in the use of analgesics and anesthetics in the EG. Other research²⁰ stimulated the EG to keep themselves most of the time in vertical position, leaving the parturient "at will", what allowed the reflection that the period of more satisfaction in women to remain in this position was at the beginning of the active phase.

There was also a study¹², which measured the route of participants, adding the distance through a pedometer. The monitoring occurred in the active phase of labor until the cervical dilation of 8 cm, verifying that the pain scores increased as cervical dilation progressed and according to the covered path. We must also consider that pain during labor is progressive

and, besides that, not only the fact of not worsening already demonstrates some efficacy of the care provided.

The perception of a group of women in relation to walking during labor in another study²³, was remembered as a way of providing freedom to "come and go" by the woman, taking her focus from pain of contractions, but also were obtained fearful statements about the birth of a newborn during vertical position.

It has been revealed that, physiologically, it is much better for the pregnant woman and the fetus when the woman remains in motion during labor, because the uterus contracts more effectively, the blood flow to the fetus through placenta is more abundant, the labor becomes shorter, it has less pain and offers freedom for woman in this period.^{26,27}

The lumbosacral massage practiced in some services as strategy for pain relief during labor, as being a simple care practice, may be delegated to the accompany of the woman's choice.

Two studies^{11,19} performed this treatment in parturients with cervical dilation from 6 cm, and the scores of pain, compared before and after application of the NPMs associated (lumbosacral massage, breathing exercise and muscle relaxation) showed a significant reduction in pain reports. The association of lumbosacral massage with muscle relaxation proposed by a RCT¹⁸, did not provide training for the breathing technique as found in other studies.^{11,19} The treatment was performed in pregnant women in the beginning of the active phase (4 cm of cervical dilation), and there were no differences in the EG when compared the pain scores among the other groups in the study.

The efficacy of hydrotherapy as a resource for comfort or pain relief in the parturient was evaluated in the transition phase of labor, when cervical dilation was ≥ 8 cm in both studies.^{11,19} Another study²⁴ evaluated the shower bath at the beginning of the active phase. These researches^{11,19,24} showed significant data in pain reduction, however, there was no control group or randomization in their samples.

A study²¹ which proposed to evaluate immersion bath during labor and delivery showed fewer reports of pain, use of medications and medical interventions in the EG, when compared to participants who did not receive this treatment. The immersion bath in pools for parturients proved to be an interesting strategy, but rarely practiced in hospitals for lack of structural resources. Hydrotherapy is recommended²⁸ when a woman is between 5 and 6 cm of dilation, so there is not a slowdown in the labor, due to the relaxing effect caused by water.

Cryotherapy was presented as a distinct alternative to the others in this review, for pain relief in labor. It was evaluated as a NPMs¹³ in the final stages of labor, having the majority of participants reported the increased in pain tolerance, allowing the observation of low use of analgesics and epidural anes-

thetia, although further studies in the action of cryotherapy in the mother and fetus organisms are needed, including well designed RCTs to assess its effectiveness during labor.

Doula assistance to the parturients was addressed in a study¹⁷ in which the authors interviewed adolescents in post-partum period, when collected favorable responses to this strategy, lower percentage of pain on the EG and highlighted the lower cost of this intervention compared to existing pharmacological resources. This professional is referred as women who give physical and emotional support to parturients during and after childbirth, a support that addresses emotional aspects as encouragement, reassure, provide guidance and stimulate measures of comfort through NPMs.^{28,29}

A Cochrane Review³⁰ informed that continuous support during labor may reduce use of medications for obstetric pain, a tendency that may shorten the labor and vaginal delivery times, increasing the woman's satisfaction.

A woman in labor passes through a single and specific moment of her life, with many sayings and myths about this phase. Two studies with a qualitative approach, proposed to hear the parturients about their experiences involving the first phase of labor. A research³¹ cited the excess of obstetric interventions as an annoyance to parturients, exacerbating the pain increase during this period; other³¹ reported that NPMs offered by the healthcare team and the climate-controlled environment are provided comfort measures and remembered by the participants interviewed.

The obstetric nurse or professional who provides care to pregnant women should be able of hearing her perspectives in the parturition process, maintaining a calm and peaceful environment, that favors freedom of woman and makes possible the use of NPMs for pain relief. These strategies described were important comfort methods in labor in most of the analyzed studies, and have helped women to go through labor in a less traumatic way, facing the invasive interventions that are uncomfortable and cause increase in pain, as reported in this integrative review.

FINAL CONSIDERATIONS

Different NPMs studied and analyzed during labor for pain relief were found. The use of TENS, for example, took place in the beginning of the first phase of labor, increasing pain tolerance; walking and/or the practice of keep the parturient in vertical position, showed to be an important strategy for pain relief, although it has been described that pain scores are higher according to the evolution of cervical dilation.

During the active phase of labor, the associated use of lumbosacral massage, breathing exercises and relaxation and/or use of cryotherapy, shower bath and immersion proved to be NPMs effective. The technique of breathing exercises alone

was not significant in reducing pain, and it was only described in one study throughout labor.

Doulas' assistance showed, as stated before, the importance of this professional in the care for the parturient, both in the physical and psycho-emotional comfort.

As limitation of this study, the methods delineated and the approaches found do not subsidize the development of a meta-analysis. Another limitation is due to the fact that some studies did not identify the exact measurement of cervical dilation or intensity of contractions during application of the NPM used, what prevented the indication of the best phase for its use or its efficacy.

It is considered important to emphasize and enhance the words of a woman in labor, since each parturient faces this stage in distinct manners. The use of NPMs has grown and new studies seek better evidences for their use as a strategy for pain relief. New studies that involve RCTs and meta-analyses on NPMs are necessary to support their clinical use, as well as studies that focus on the preference of parturients in these strategies, essential to extend the humanization and quality in the labor assistance.

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