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Physical therapy in humanized childbirth: an integrative literature review

Atuação fisioterapêutica no parto humanizado: uma revisão integrativa da literatura

Actuación fisioterapéutica en el parto humanizado: una revisión integradora de la literatura

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ABSTRACT

Objective: To investigate the role of physical therapy in humanized childbirth through an integrative literature review. **Method:** This is an integrative review of the literature conducted through electronic searches in May 2024, using the following databases: PubMed, Web of Science, Embase, and SciELO. Articles published in the last 5 years (2018 to 2023) in English and Portuguese were included. Eligibility criteria comprised studies that addressed at least 1 physical therapy technique during labor and could be accessed in full. **Results:** A total of 9 articles were selected. The most commonly used physical therapy interventions were lumbosacral massage and transcutaneous electrical nerve stimulation, both aiming to relieve labor pain. Other techniques included reflexology, acupressure, heat therapy, and interferential current. Additional reported benefits were decreased anxiety, shorter labor duration, increased satisfaction, and improved pain tolerance. All studies reviewed demonstrated the effectiveness of the techniques. **Conclusion:** The findings suggest that physical therapy, through its various techniques and resources, plays an important role in supporting humanized childbirth. It contributes to pain relief, shorter labor duration, and greater maternal satisfaction, highlighting the importance of incorporating physical therapists into maternity care teams.

Descriptors: Humanized childbirth; Physical therapy modalities; Labor pain.

RESUMO

Objetivo: *Investigar as formas de atuação da fisioterapia no parto humanizado através de uma revisão integrativa da literatura.* ***Método:*** *Trata-se de uma revisão integrativa da literatura cuja busca eletrônica foi realizada no mês de maio de 2024, nas bases de dados: Pubmed, Web of Science, Embase e SciELO. Foram selecionados artigos publicados nos últimos cinco anos (2018 a 2023), nos idiomas inglês e português. Os critérios de elegibilidade foram: artigos que abordassem pelo menos uma técnica de atuação fisioterapêutica no trabalho de parto e artigos que possam ser contemplados na sua íntegra.* ***Resultados:*** *Foram selecionados nove artigos. Observou-se que o recurso fisioterapêutico mais utilizado foi a massagem lombossacra e a eletroestimulação transcutânea, ambos com o objetivo de aliviar a dor do processo parturitivo. Outras técnicas também foram utilizadas como: reflexologia, acupressão, calor e corrente interferencial. Outros benefícios foram encontrados como: diminuição da ansiedade, redução do tempo de parto, melhora na satisfação e aumento na tolerância à dor. Verificou-se eficácia das técnicas*

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em todos os estudos dessa revisão. ***Conclusão:*** *Os resultados sugerem que a fisioterapia com seus recursos e técnicas é uma importante aliada durante o trabalho de parto humanizado ao promover diminuição da dor, redução do tempo de parto e maior satisfação, sendo importante a presença desse profissional nas maternidades.*

Descritores: *Parto Humanizado; Modalidades de Fisioterapia; Dor do parto.*

RESUMEN

Objetivo: *Investigar las formas de actuación de la fisioterapia en el parto humanizado mediante una revisión integradora de la literatura.* ***Método:*** *Se trata de una revisión integradora de la literatura cuya búsqueda electrónica se realizó en mayo de 2024, en las bases de datos: PubMed, Web of Science, Embase y SciELO. Fueron seleccionados artículos publicados en los últimos cinco años (2018 a 2023), en los idiomas inglés y portugués. Los criterios de elegibilidad incluyeron: artículos que abordaran al menos una técnica de intervención fisioterapéutica en el trabajo de parto y aquellos disponibles en texto completo.* ***Resultados:*** *Fueron seleccionados nueve artículos. Se observó que los recursos fisioterapéuticos más utilizados fueron el masaje lumbosacro y la estimulación eléctrica transcutánea, ambos con el objetivo de aliviar el dolor durante el proceso del parto. Otras técnicas también fueron empleadas, como: reflexología, acupresión, aplicación de calor y corriente interferencial. Se identificaron otros beneficios, tales como: disminución de la ansiedad, reducción del tiempo del trabajo de parto, mejora en la satisfacción y aumento en la tolerancia al dolor. La eficacia de las técnicas fue verificada en todos los estudios incluidos en esta revisión.* ***Conclusión:*** *Los resultados sugieren que la fisioterapia, mediante sus recursos y técnicas, constituye una aliada fundamental durante el trabajo de parto humanizado, al promover la reducción del dolor, acortar el tiempo del parto y aumentar la satisfacción materna, lo que resalta la importancia de la presencia de este profesional en las maternidades.*

Descriptores: *Parto Humanizado; Modalidades de Fisioterapia; Dolor de Parto.*

INTRODUCTION

In Brazil, the process of childbirth has undergone numerous transformations throughout history. Until the 19th century, midwives played a central role in assisting home births, granting women a leading position in this significant event[1]. Beginning in the 1940s, however, a shift toward institutionalized childbirth began to emerge, resulting in a reduction in women's active participation during labor. This transition led to the progressive instrumentalization and medicalization of childbirth, often associated with obstetric violence[2].

In response to this reality, the concept of humanized childbirth emerged as a counterpoint to the procedure-centered model and the obstetric violations often linked to cesarean deliveries[3]. Humanized childbirth aims to avoid unnecessary interventions that may jeopardize the health and lives of both mother and baby, while preserving the natural process of labor and emphasizing the active role of the woman. It seeks to minimize the excessive use of medical procedures[4]. The primary goal is to ensure a healthy labor and birth experience while respecting the physiological course of childbirth[5], aligning with health promotion principles by fostering informed decision-making, overall well-being, and respectful care environments[6].

It is essential to understand that both pregnancy and childbirth require an interprofessional approach. In recent years, growing discussions have emerged regarding the involvement of physical therapists in maternity settings, particularly during labor support[7]. Although this practice is not widely sought by the general population and is often not fully integrated into maternity care within Brazil's public health system, physical therapists play a key role in keeping the birthing woman informed, safe, and confident. They also promote greater comfort and improve the quality of labor[8], making their practice an important component of women's health promotion by valuing experience, autonomy, and well-being[9].

Research has shown that physical therapists are proficient in using nonpharmacological techniques during labor[8,10-12]. A study involving 132 women assisted by physical therapists during cervical dilation revealed that strategies such as appropriate postures and movements, pelvic mobilization, relaxation techniques, and breathing exercises enhanced the woman's participation in labor and improved her ability to manage pain[10].

Additionally, studies highlight the importance of physical therapists' knowledge in applying appropriate resources during labor. For example, the use of a birthing ball encourages active participation[10], while physical exercises and vaginal stretching help prevent pelvic injuries[11]. Nevertheless, research on this topic remains limited[10,11].

Given this context, there is a noticeable shortage of physical therapists in Brazilian maternity wards, often justified by a lack of awareness among health care administrators and directors regarding the role of physical

therapy in labor and health promotion. Furthermore, many expectant mothers are unaware of the presence and contributions of physical therapists as part of the multidisciplinary team supporting them during childbirth. In light of these considerations, this study aims to investigate the roles and practices of physical therapy in humanized childbirth through an integrative literature review.

METHOD

This study is an integrative literature review conducted in accordance with the 6 recommended steps: (I) formulation of the research question for the integrative review; (II) search and identification of relevant studies; (III) establishment of inclusion and exclusion criteria; (IV) definition of the information to be extracted from the selected studies; (V) evaluation of the included studies; and (VI) presentation of the review findings[13].

Based on current literature, the guiding research question for this study was: “What are the physical therapy approaches and their outcomes during labor?”

Electronic searches was conducted in May 2024 across PubMed, Web of Science, Embase, and SciELO. Articles published in the last 5 years (2018 to 2023), available in full and free of charge, in English or Portuguese, were considered. The search strategy combined descriptors with the Boolean operators AND and OR, using the following combinations: humanizing delivery AND physical therapy OR physical therapy modalities AND labor pain, and their equivalents in Portuguese: parto humanizado AND fisioterapia OR modalidades de fisioterapia AND dor do parto.

Only articles that met the following eligibility criteria were selected: original studies, including clinical trials, case-control studies, cohort or cross-sectional designs, that addressed at least 1 physical therapy technique or intervention during labor, and articles that discussed the role of the physical therapist in humanized childbirth.

Data collection was conducted based on the selected full-text studies. The information extracted for characterization included: author, year of publication, study location, study design, sample characteristics (age), type of physical therapy intervention, and main statistical findings.

The content of the included studies was analyzed with the aim of comparing and contrasting findings, identifying trends and gaps in the current literature. To do so, an initial independent screening of titles and abstracts was conducted by 2 review authors. Studies that met the eligibility criteria proceeded to full-text review.

In the second phase, 2 review authors independently assessed the full texts, and the same inclusion and exclusion criteria were applied. Studies that did not meet the criteria were excluded from this review.

The results of the selection process are presented in a flowchart (Figure 1) and a summary table highlighting the main scientific findings relevant to the study topic (Box 1).

A summary of the electronic search conducted in May 2024 is presented in Figure 1. Initially, 92 articles were identified. No duplicates were found, so all 92 proceeded to title and abstract screening and eligibility assessment. Of these, 18 articles were read in full, and only 9 fully met the inclusion criteria and were therefore selected for this integrative review.

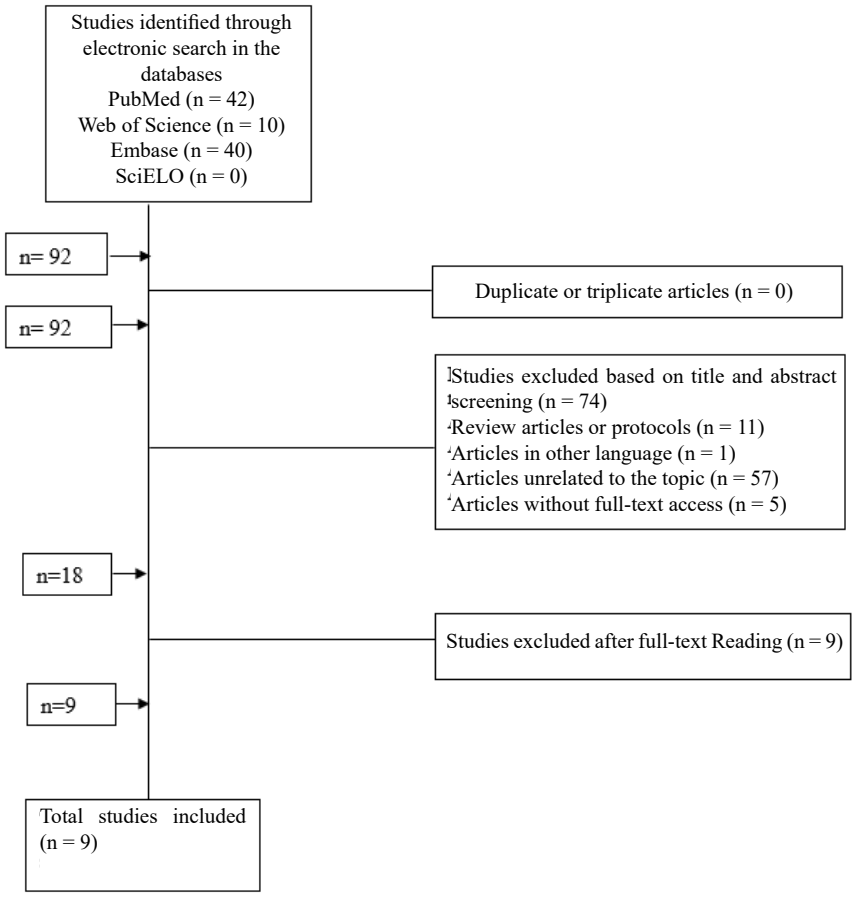

Figure 1 – Studies included and excluded in the review on physical therapy in labor and delivery, from 2019 to 2023.
Source: Research data, 2024

RESULTS

The description of the studies that examined the role of physical therapists during labor is presented in Box I. Of the 10 selected studies, 9 were clinical trials and 1 was an experimental study. The studies originated from Turkey[14-17], Iran[18,19], Spain[20], Germany[21], China,[22] and Brazil[23].

Box I – Description of the selected studies by author/year, objective, sample, methods, and outcomes related to physical therapy interventions during labor.

Authors (year), country	Objectives	Sample/age (SD)	Methods	Results
Gonenç and Fusun (2020)[21], Germany	To compare the effects of massage and acupressure on labor pain control, labor duration, and birth satisfaction.	n = 120 23.4 (±3.2)	Randomized clinical trial. Four groups: massage for 30 minutes during the latent phase (n = 30), acupressure for 30 minutes at specific points (n = 30), both massage and acupressure for 30 minutes (n = 30), and control (n=30). Tools: VAS and custom forms.	All intervention groups reported significantly lower post-intervention pain scores during the active and transition phases compared to the control group ($p < 0.001$).
Çevik and Karaduman (2019)[14], Turkey	To determine the effect of sacral massage on pain and anxiety during labor.	n = 60 23.5 (±4.47)	Randomized controlled trial. Two groups: experimental (lumbosacral massage for 30 minutes plus vibration and effleurage techniques, n = 30) and control (n = 30). Tools: sociodemographic and health questionnaire, follow-up form, postpartum interview, VAS, STAI FORM TX-I.	Lumbosacral massage during labor reduced pain, worry, and anxiety ($p < 0.05$).

Njogu et al. (2021)[22], China	To determine the effects of TENS therapy during the first stage of labor.	n = 326 Experimental: 29.32 (±3.44) Control: 28.61 (±3.58)	Randomized controlled trial. Two groups: experimental (TENS during the active phase with electrodes at T10–L1 and S2–S4, 15 mA, intensity adjusted to personal tolerance, n = 161) and control (n = 165). Tools: VAS, obstetric and neonatal findings form, Apgar score.	TENS was effective in reducing labor pain and shortening the duration of the active phase ($p < 0.001$).
Shahbazzadegan and Nikjou (2022)[18], Iran	To identify the most appropriate cervical dilation for applying massage to reduce pain and anxiety.	n = 60 Experimental: 24.63 (±4.08). Control: 23.19 (±4.86).	Randomized clinical trial. Two groups: experimental (lumbosacral massage applied 3 times at 5, 7, and 9 cm dilation, T10–S4, for 20 minutes, n = 30) and control (n = 30). Tools: VAS, STAI, sociodemographic questionnaire.	Significant reduction in pain at 7 cm dilation ($p < 0.001$); no difference at 5 cm ($p = 0.084$) or 9 cm ($p = 0.591$). Severe anxiety was reduced to moderate ($p < 0.001$).
Turkmen and Oran (2020)[15], Turkey	To determine the effects of sacral massage and heat application on labor pain perception and maternal comfort.	n = 90 Massage: 24.39 (±3.96). Heat: 23.68 (±3.49). Control: 25.45 (±3.64).	Quasi-randomized controlled experimental study. Three groups: massage (S1–S4) for 10 minutes at 4–5 cm, 6–7 cm, and 8–9 cm cervical dilation (n=30); heat application for 20 minutes at the same dilation stages (n=30); and control (n=30). Tools: personal information questionnaire, numeric pain scale, Childbirth Comfort Questionnaire.	Post-intervention comfort during 8–9 cm dilation was higher in the heat group than in the control ($p = 0.002$). Significant difference in comfort scores at 4–5 cm and 8–9 cm ($p < 0.001$).
Pak et al. (2021)[19], Iran	To investigate the effects of quadripolar interferential current on pain and duration of the active phase of labor in primiparous women.	n = 60 Experimental: 23.8 (±5.9). Control: 22.3 (±5.3)	Randomized clinical trial. Two groups: experimental (interferential current at the beginning and end of the active phase, 30–45 min, T10–L1 and S2–S4, carrier frequency 4000Hz, beat 80Hz, sweep 0–40Hz, pulse 50–60µs, n = 30) and control (n = 30). Tools: sociodemographic questionnaire, VAS, partogram.	Pain intensity during the active phase was significantly lower in the experimental group ($p < 0.001$). Active phase duration was shorter ($p = 0.003$), and satisfaction was significantly higher ($p = 0.027$).
Çevik and Incedal (2021)[16], Turkey	To determine the effect of reflexology on labor outcomes in primiparous women.	n = 60 Aged ≥ 19 years	Randomized clinical trial. Two groups: experimental (foot reflexology at 4 cm dilation, followed by 10 minutes of foot massage and 40 minutes of reflexology, n = 30) and control (n = 30). Tools: sociodemographic questionnaire, VAS, STAI FORM TX-I, Childbirth Satisfaction Scale.	Lower pain levels during active and transition phases in the experimental group ($p < 0.05$). Lower STAI scores in both phases ($p < 0.05$). Higher childbirth satisfaction scores ($p < 0.05$).
Kaplan and Çevik (2021)[17], Turkey	To determine the effects of guided imagery and foot reflexology on pain intensity, labor duration, and childbirth satisfaction.	n = 120 Reflexology: 22.2 (±3.4). Imagery: 21.5 (±3.2) Control: 23.6 (±3.8)	Randomized clinical trial. Three groups: reflexology on both feet for 30 minutes (15 min each, n = 40); guided imagery for 12 minutes (n=40); and control (n = 40). Tools: personal information questionnaire, VAS, Childbirth Satisfaction Scale.	Reflexology and guided imagery groups reported less pain ($p < 0.05$), shorter active, transition, and second stages ($p < 0.05$), and greater satisfaction ($p < 0.05$).
Suárez et al. (2019)[20], Spain	To analyze the effectiveness of TENS for pain relief during labor and to describe its tolerance and satisfaction.	n = 10 26.5 (±4.8)	Randomized clinical trial. Three groups: Active TENS 1 (asymmetric biphasic pulse, 100ms, 100Hz, n = 3), Active TENS 2 (asymmetric biphasic square pulse, 350ms, 80–100Hz, n = 4), and placebo TENS (no stimulation, n = 3). Intensity adjusted to participant's max sensory level.	Active TENS 2 group showed clinically significant pain reduction ($p = 0.029$) and higher overall satisfaction compared to Active TENS 1 and placebo groups ($p = 0.015$).

Source: Authors, 2024
VAS: Visual Analog Scale.

Of the studies included in this review, a total of 906 women participated, with a mean age of 24.53 years. All articles employed resources and methods aimed at supporting labor, with lumbosacral massage and electrical stimulation being the most frequently used techniques. Massage was applied in 4 studies[14,15,18,21], and electrical stimulation was also used in 4 studies[19,20,22,23]. In addition to these methods, the effects of foot reflexology were evaluated in 2 studies[16,17], heat therapy in 2[15,23], and ambulation and postural changes in 1[23].

Only 1 study, conducted in Brazil[23] implemented a comprehensive nonpharmacological protocol that included postural changes, ambulation, electrical stimulation, and warm showers. A total of 3 studies compared 2 techniques: reflexology versus guided imagery[17], massage versus heat,[15] and massage versus acupressure[21].

Regarding the outcomes of the interventions, lumbosacral massage showed a significant positive effect in 2 studies[14,18]. Electrical stimulation was effective in all studies in which it was used[19,20,22,23]; however, in the study comparing 2 types of TENS, the group that received the device with a wider pulse width reported greater satisfaction with the labor experience[20].

DISCUSSION

Humanized childbirth is understood as a process that goes beyond a comfortable delivery; it involves respecting, seeing, and listening to the birthing woman, ensuring her needs are met and the physiological process is followed without unnecessary interventions, while providing continuous emotional and physical support[24]. In this context, the

presence of a physical therapist as part of a qualified multidisciplinary team can contribute to a more positive and humanized birth experience for the woman[25].

The total number of 906 participants across the 9 studies included in this review represents a significant and relevant sample for analyzing the effects of physical therapy interventions during labor. However, it is important to consider how the sample was distributed among the studies, as variations in sample size can influence the weight of individual findings and the robustness of the conclusions.

The average age of the women in this review predominantly reflects a profile of young adult pregnant women. This aligns with the typical age group for women of reproductive age in many countries, including Brazil, where the highest birth rates occur among women aged 20 to 29 years[26,27]. However, it is worth noting that this average may not adequately represent specific populations such as adolescents or women of advanced maternal age, whose labor experiences may differ both physiologically and in their responses to the proposed interventions[28,29].

Despite the relevance of this topic within the Brazilian context, there is a noticeable scarcity of national studies addressing the role of physical therapy in humanized childbirth. Of the 9 studies included in this review, only 1 was conducted in Brazil, highlighting a gap in the national scientific literature on this subject. This may be due to factors such as the still-limited integration of physical therapists into public maternity settings[30], the low visibility of their role in this specific field, and the limited recognition of humanized childbirth as a valuable interdisciplinary research topic[31]. This absence reinforces the need to encourage studies that explore the Brazilian reality considering its sociocultural, political, and health care service organization specificities[32].

The studies included in this integrative review examined a range of interventions and outcomes, yet they employed only 2 types of study design — i.e., randomized clinical trials and quasi-randomized experimental studies. Therefore, all were classified as level II in terms of the quality of scientific evidence. Regarding the effectiveness of the techniques used during labor, all studies found that women who received physical therapy interventions experienced significant benefits. These benefits extended beyond pain relief, including reduced anxiety[14,16,18], greater childbirth satisfaction,[14,17,19,20] and shorter labor duration[17,23].

In this review, studies on lumbosacral massage techniques demonstrated their effectiveness in reducing pain intensity and anxiety[14,18]. Lumbosacral massage is one of the primary techniques for pain relief during labor. However, beyond reducing pain, it may also help lower anxiety due to its effects on reducing norepinephrine release[14]. Anxiety during labor often stems from uncertainty, unpredictability, and the lack of control over subsequent events. When the birthing woman is exposed to stressors, her fear and anxiety tend to intensify, potentially resulting in physiological responses such as tachycardia, increased blood pressure, vasoconstriction of visceral skin, vasodilation of skeletal muscles, and hyperventilation[33].

A technique used in 40% of the studies in this review was electrical stimulation, either using TENS parameters[20,22] or interferential current[19]. Evidence indicates that TENS is a nonpharmacological resource effective in reducing pain and shortening the active phase of labor, with no risk to the health of the mother or baby[22]. Furthermore, the application of electrodes parallel to the spinal cord, using high frequencies with time-modulated waveforms and wide pulse widths, has shown analgesic effects and good acceptance among pregnant women[20]. Interferential current was associated with reduced active labor duration, pain relief, and higher satisfaction with the labor experience[19].

Although TENS is an effective method for immediate pain relief, it is not yet well-established in clinical practice. This gap may be related to the limited availability of trained professionals to operate the equipment — such as physical therapists — who are still gradually gaining recognition in Brazilian maternity wards. As a result, the use of TENS in Brazilian maternity settings remains rare[25], despite scientific evidence supporting its benefits for laboring women[20,22].

Foot reflexology was used in 2 studies[16,17], with pain relief being the primary outcome observed. However, other effects were also identified. A study involving 60 primiparous women reported lower anxiety levels in the intervention group compared to the control group, which received only routine care[16]. Foot reflexology provides local benefits such as muscle relaxation, increased blood flow, a sense of comfort, and mental balance, which collectively contribute to stress reduction[34].

Another technique identified in this review was heat therapy, addressed in 2 studies[15,23]. A study with 90 participants divided into 2 experimental groups — one of which received heat application — showed that the heat group experienced greater comfort during cervical dilation from 8 to 9 cm[15]. In a Brazilian study, heat application was part of a broader physical therapy protocol, making it difficult to isolate its individual effect[23]. Heat increases blood circulation, helps mitigate stress caused by uterine contractions, and when applied to soft tissues, enhances metabolism and elasticity, promoting a sense of well-being[33].

The least frequent nonpharmacological technique in this review was guided imagery, reported in only 1 study. In that study, guided imagery combined with reflexology showed significant results in reducing pain and shortening the active phase of labor[17]. Guided imagery can promote a sense of relaxation and well-being, helping women remain calm in stressful situations[35]. A study showed that this technique enhanced participants' awareness of their breathing patterns, helping them remain more composed during labor[36].

One of the most commonly used resources during labor — breathing techniques[37,38] — was not reported among the findings of this review. However, studies have shown that breathing is a nonpharmacological technique with beneficial outcomes and plays an important role during labor and delivery. Respiratory training should begin during pregnancy, using deep inhalation to expand the abdominal wall and performing diaphragmatic breathing at a natural rhythm. This practice promotes relaxation, focus, pain relief, anxiety reduction, a lower risk of perineal trauma during the expulsion phase, and improved maternal-fetal oxygenation, ultimately enhancing the woman's satisfaction with the birth experience[8,39,40].

This review also highlighted postural changes, with particular emphasis on upright positions[23]. Over the years, the disadvantages of the supine position and the benefits of mobility and upright posture during labor have been widely discussed. Physiologically, allowing movement during labor leads to more effective uterine contractions, benefits from gravity to facilitate fetal descent, and increases blood flow to the fetus, making the labor process shorter and less intense[41]. Thus, encouraging the birthing woman's freedom of movement is recommended to promote greater comfort and a sense of safety during labor[42].

The woman should have the autonomy to choose her preferred position[43]. A number of positions can be adopted during labor, such as semi-sitting, squatting, sitting on the bed, lateral decubitus, hands and knees, kneeling, standing with trunk leaning forward, among others[44]. The supine position restricts the woman's mobility, hinders gas exchange between mother and baby, reduces the effectiveness of uterine contractions, and prolongs labor duration. In contrast, upright positions facilitate fetal descent and reduce the uterine effort required[45].

Pain is subjective and individual, and may be influenced by psychological, emotional, cultural, and stress-related factors, as well as by the release of endorphins[43]. In Brazil, vaginal birth is often perceived as a moment of pain and suffering. Social media and television commonly portray cesarean delivery as safer than vaginal birth. This strong cultural influence increases the fear and apprehension of women regarding labor pain[46].

This study presents some limitations that should be considered when interpreting the findings. The first relates to the small number of studies included in the review — only 9 articles — which may limit the comprehensiveness of the conclusions. In addition, a significant geographic gap was observed, as no studies from Latin America or North America were identified. This limitation may be attributed either to the search criteria used or to the scarcity of publications on this topic in those regions. Finally, it is important to acknowledge that integrative reviews are subject to biases related to study selection, the methodological quality of included studies, and limitations of the databases consulted. Nevertheless, these limitations do not compromise the results of this review, as the study's objectives were achieved.

Therefore, the topic of this study proves to be relevant for the health care field, particularly considering the important role of physical therapists in labor and childbirth support. However, further research is needed to address certain gaps, such as a deeper exploration of the influence of breathing techniques and positioning during labor. It is also recommended to investigate the need for electrical stimulation in maternity care and the reasons why its use has not yet become widespread.

CONCLUSION

Studies investigating the role of physical therapy during labor have primarily focused on pain relief, as pain is a prevalent symptom even in physiologic labor processes and requires more humanized attention. The studies analyzed various techniques and interventions, such as lumbosacral massage, TENS, foot reflexology, acupressure, heat therapy, and interferential current. These interventions were aimed at reducing anxiety, shortening labor duration, and minimizing perineal trauma.

Nevertheless, there remains a lack of high-quality Brazilian studies addressing the role of physical therapists during labor, especially from a humanized care perspective. This highlights that physical therapists still have limited presence within maternity settings. Additionally, it is essential to promote intersectoral collaboration in women's health care during childbirth as a foundational element in the development of clinically effective and evidence-based intervention strategies, ensuring comprehensive and respectful care for this population.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

AUTHOR CONTRIBUTIONS

Priscila Vitória Paiva Dantas and **Jaíza Marques Medeiros e Silva** contributed to the design and planning of the research; data collection, analysis, and interpretation; and the writing and revision of the manuscript. **Graziele Paiva Dantas**, **Viviann Alves de Pontes,** and **Nadine Oliveira Cabral** contributed to the research design and planning as well as data collection, analysis, and interpretation. **Gustavo Coringa de Lemos** and **Joelma Gomes da Silva** contributed to data analysis, interpretation, and manuscript revision.

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