OBJN
ONLINE BRAZILIAN JOURNAL OF NURSING
ISSN: 1676-4285

REVIEW PROTOCOL

Maternal pelvic floor mobility exercises in labor: protocol for a scoping review

Unidade de terapia intensiva - passado, presente e futuro: um convite à reflexão

Reginaldo Roque Mafetoni[1]
ORCID: 0000-0003-1574-3627

Ana Carolina Garcia Pifaldini[1]
ORCID: 0009-0009-8488-749X

Talita Balaminut[1]
ORCID: 0000-0002-9746-3102

Clara Fróes de Oliveira Sanfelice[1]
ORCID: 0000-0003-1920-3193

Elenice Valentim Carmona[1]
ORCID: 0000-0001-9976-3603

Lia Maristela da Silva Jacob[2]
ORCID: 0000-0003-4168-4333

Herla Maria Furtado Jorge[3]
ORCID: 0000-0001-9706-5369

Maria Helena Baena de Moraes Lopes[1]
ORCID: 0000-0001-7747-1140

[1]Universidade Estadual de Campinas, Campinas, SP, Brasil

[2]Faculdade São Leopoldo Mandic, Araras, SP, Brasil

[3]Universidade Federal do Piauí, Teresina, PI, Brasil

Editors:
Ana Carla Dantas Cavalcanti
ORCID: 0000-0003-3531-4694

Paula Vanessa Peclat Flores
ORCID: 0000-0002-9726-5229

Érica Brandão de Moraes
ORCID: 0000-0002-1071-3587

Corresponding author:
Reginaldo Roque Mafetoni
E-mail: mafetoni@unicamp.br

Submission: 09/29/2023
Approved: 03/11/2024

ABSTRACT

Objective: To identify and map the types of exercises used to improve maternal pelvic floor mobility during labor and delivery. **Method:** Protocol for a scoping review structured according to the Joanna Briggs Institute methods and the PRISMA checklist for scoping reviews. Inclusion criteria will include scientific articles, editorials, research notes, theses, and dissertations. Searches will be conducted in electronic health sciences databases and dissertation and thesis repositories. Publications will be selected using Rayyan Web software by two independent review authors in blind mode, with potential conflicts resolved by a third reviewer. Data will be mapped and presented descriptively to provide an overview of maternal pelvic floor mobility exercises that can be used during labor and delivery.
Descriptors: Pregnant Women; Exercise Movement Techniques; Pelvic Floor; Labor Pain; Labor, Obstetric.

RESUMO

Objetivo: Identificar e mapear os tipos de exercícios usados na mobilidade da pelve materna aplicados no trabalho de parto e parto. **Método:** Protocolo de revisão de escopo, estruturado conforme a metodologia do Instituto Joanna Briggs e o checklist PRISMA para revisões de escopo. Os critérios de inclusão abrangerão artigos científicos, editoriais e notas de pesquisa, dissertações e teses. A busca será conduzida em bases de dados eletrônicas em ciências da saúde, bem como repositório de dissertações e teses. As publicações serão selecionadas com o auxílio do software *Rayyan Web* por dois revisores independentes no modo cego, e os possíveis conflitos serão desfeitos por um terceiro revisor. Os dados serão mapeados e apresentados de forma descritiva, com uma visão geral dos exercícios de mobilidade da pelve materna que podem ser aplicados no trabalho de parto e parto.
Descritores: Gestantes; Técnicas de Exercício e de Movimento; Diafragma da Pelve; Dor do Parto; Trabalho de Parto.

INTRODUCTION

Support during labor may involve the medical team, nursing staff, and a physical therapist. Protocols and routines designed to ensure the safety and satisfaction of women during labor and delivery guide it. The current scenario, dominated by institutionalized childbirth, poses a challenge to health professionals committed to public health policies aimed at reducing cesarean section rates and unnecessary interventions during childbirth.

The use of uterotonics for induction of labor and cesarean section has increased significantly in several countries. A survey conducted in 154 countries (2010–2018) showed that the average cesarean section rate was 21.1%, ranging from 5% to 42% between sub-Saharan Africa, Latin America, and the Caribbean[1]. Projections from this study showed that the global average cesarean section rate could reach 28.5% by 2030. Data from 2017 showed that 55.1% of births in Brazil were delivered by cesarean section, with the rate exceeding 80% in the private sector[2].

In the literature, integrative practices[3-4] have been proposed to reclaim the humanization of childbirth assistance, empower women, reduce

How to cite: Mafetoni RR, Pifaldini ACG, Balaminut T, Sanfelice CF de O, Carmona EV, Jacob LM da S. Maternal pelvic floor mobility exercises in labor: protocol for a scoping review. Online Braz J Nurs. 2024;23 Suppl 1:e20246744. https://doi.org/10.17665/1676-4285.20246744

unnecessary interventions, and thus ensure good obstetric practice as recommended by the World Health Organization (WHO)[5]. Integrative practices are often used by nurses, midwives, and physiotherapists to increase women's autonomy and freedom and promote a positive and humanized birth experience.

There are a variety of integrative practices that can be used during pregnancy and labor. Joint manipulation, non-active exercises, and relaxation of the soft or myofascial tissues of the pelvis are among the practices that have shown positive effects in preparing pregnant women for childbirth[6-9]. These exercises include alternating between sitting and standing positions, pelvic articulation, walking, squatting, lunges, dancing, using a Swiss ball or a peanut ball, and pelvic rocking. These exercises have been associated with increased female participation, reduced professional intervention, shorter duration of labor, less pain, and consequently greater comfort[7-10].

There is a set of pelvic floor mobility exercises called Spinning Babies that has been used in some maternity wards and birthing centers to assist in childbirth[11-12]. These exercises are performed during labor and are described as facilitating the descent of the fetus into the maternal pelvic constrictions (superior, middle, and inferior). Thus, positions and movements are performed to create space for the fetus to progress[11-12]. Another suggestion for pelvic floor mobility exercises is the De Gasquet method, which provides a holistic approach of different positions related to breathing to be used during pregnancy, labor, and delivery[13]. Suggested positions include lateral, hands and knees, squatting, ventral, and dorsal. The De Gasquet method was developed about 40 years ago and is widely used in obstetric practice in several countries.

A preliminary search of the Cochrane Library, the Medical Literature Analysis and Retrieval System Online (MEDLINE/PubMed), and the Open Science Framework (OSF) databases in June 2023 did not identify any systematic or scoping review, either published or unpublished, regarding exercises to improve maternal pelvic floor mobility during labor. Because of the need to fill this gap and analyze studies on exercises to improve maternal pelvic floor mobility during labor through a qualitative synthesis, the present scoping review is proposed to identify and map the types of exercises to improve maternal pelvic floor mobility used during labor and delivery.

METHOD

This study will use the methodology outlined in the Joanna Briggs Institute (JBI) Manual for Evidence Synthesis[14] for scoping reviews. It will be written according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-ScR)[15]. It does not require ethics committee approval because it will extract and analyze data available in digital literature databases.

Protocol and registration

The protocol for this review has been registered on the Open Science Framework (OSF) platform at DOI 10.17605/OSF.IO/WM5JA and is available at: https://osf.io/wm5ja/.

Eligibility

Approach to maternal pelvic floor mobility exercises during labor and delivery.

Inclusion criteria

Scientific articles of various methodologies and designs (e.g., randomized clinical trials, nonrandomized clinical trials, cross-sectional studies, case studies, and experiential reports), editorials, research notes, dissertations, and theses will be included without language or time restrictions, published through July 2023.

Publications are listed using the PCC (Participant, Concept, and Context) mnemonic strategy[14] (Figure 1).

Figure 1 - Mnemonic elements adopted in the review. Campinas, SP, Brazil, 2023

Mnemonic	Extraction
P (participant)	Pregnant women or women giving birth at term (i.e., between 37 and 41 weeks and 6 days of gestational age) with normal risk or comorbidities, without mobility limitations, in the latent or active phase of labor.
C (concept)	Types of exercises for maternal pelvic floor mobility: walking, squats, lunges, dancing, use of a Swiss ball, use of a peanut ball, pelvic rocking, movements, and positions from the Spinning Babies® or De Gasquet® methods, among others.
C (context)	Support during labor and delivery by health care professionals, in both hospital and nonhospital settings, without geographic, religious, cultural, or social restrictions.

PCC-based review question

What publications are available on pelvic floor mobility exercises for pregnant women during labor and delivery?

Sources of information

An initial search of MEDLINE (PubMed) and Cumulated Index in Nursing and Allied Health Literature (CINAHL) databases was conducted to identify articles related to the topic. Medical Subject Headings (MeSH) descriptors and keywords were searched with the assistance of a librarian (Figure 2).

Figure 2 - Identification of descriptors and keywords for a scoping review on pelvic floor mobility exercises during labor. Campinas, SP, Brazil, 2023

MeSH	Keywords
Labor, obstetric	Obstetric Labor.
Labor Stage, First	First Labor Stage; Labor, First Stage; First Stage Labor; Cervical Dilatation; Cervical Dilatations; Dilatation, Cervical; Dilatations, Cervical.
Parturition	Parturitions; BirthBirths; Childbirth; Childbirths.
Labor Pain	Pain, Labor; Obstetric Pain; Pain, Obstetric.
Delivery, Obstetric	Deliveries, Obstetric; Obstetric Deliveries; Obstetric Deliver.
Natural Childbirth	Childbirth, Natural; Water Birth; Water Births; Waterbirth; Lamaze Technique; Technique, Lamaze.
Cesarean Section	Cesarean Sections; Delivery, Abdominal; Abdominal Deliveries; Deliveries, Abdominal; Caesarean Section; Caesarean Sections; Abdominal Delivery; C-Section (OB); C Section (OB); C-Sections (OB); Postcesarean Section.
Exercise Movement Techniques	Movement Techniques, Exercise; Exercise Movement Techniques; Pilates-Based Exercises; Exercises, Pilates-Based; Pilates Based Exercises; Pilates Training; Training, Pilates.
Exercise Therapy	Remedial Exercise; Exercise, Remedial; Exercises, Remedial; Remedial Exercises; Therapy, Exercise; Exercise Therapies; Therapies, Exercise; Rehabilitation Exercise; Exercise, Rehabilitation; Exercises, Rehabilitation; Rehabilitation Exercises.
Exercise	Exercises; Physical Activity; Activities, Physical; Activity, Physical; Physical Activities; Exercise, Physical; Exercises, Physical; Physical Exercise; Physical Exercises; Acute Exercise; Acute Exercises; Exercise, Acute; Exercises, Acute; Exercise, Isometric; Exercises, Isometric; Isometric Exercises; Isometric Exercise; Exercise, Aerobic; Aerobic Exercise; Aerobic Exercises; Exercises, Aerobic; Exercise Training; Exercise Trainings; Training, Exercise; Trainings, Exercise.
Physical Therapy Modalities	Modality, Physical Therapy; Physical Therapy Modality; Physiotherapy (Techniques); Physiotherapies (Techniques); Physical Therapy Techniques; Physical Therapy Technique; Techniques, Physical Therapy; Group Physiotherapy; Group Physiotherapies; Physiotherapies, Group; Physiotherapy, Group; Physical Therapy; Physical Therapies; Therapy, Physical; Neurological Physiotherapy; Physiotherapy, Neurological; Neurophysiotherapy.
Patient Positioning	Patient Positionings; Positioning, Patient; Positionings, Patient.
Pelvic Floor	Floor, Pelvic; Pelvic Diaphragm; Diaphragm, Pelvic; Diaphragms, Pelvic; Pelvic Diaphragms.

Search strategy

The search strategy, including all descriptors and keywords, was adapted for each database (Figure 3), which included PubMed, PubMed Central, CINAHL, Web of Science, Scopus, *Biblioteca Virtual em Saúde* (BVS), and Embase (Excerpta Medica Database). The review will also include unconventional literature (i.e., gray literature) from the ProQuest Dissertations and Theses Global repository.

Figure 3 - Definition of the search strategy for the scoping review on pelvic floor mobility exercises during labor, according to the descriptors and keywords of each database. Campinas, SP, Brazil, 2023

Database	Search	Search strategy	Date / Number of articles
PUBMED	#1	(((((((Labor, Obstetric[MeSH Terms]) OR ("Labor, Obstetric"[Title/Abstract] OR "Obstetric Labor"[Title/Abstract])) OR ((Labor Stage, First[MeSH Terms]) OR ("Labor Stage, First"[Title] OR "First Labor Stage"[Title] OR "Labor, First Stage"[Title] OR "First Stage Labor"[Title] OR "Cervical Dilatation"[Title] OR "Cervical Dilatations"[Title] OR "Dilatation, Cervical"[Title] OR "Dilatations, Cervical"[Title]))) OR ((Parturition[MeSH Terms]) OR (Parturition[Title/Abstract] OR Parturitions[Title/Abstract] OR Birth[Title/Abstract] OR Births[Title/Abstract] OR Childbirth[Title/Abstract] OR Childbirths[Title/Abstract]))) OR ((Labor Pain[MeSH Terms]) OR ("Labor Pain"[Title/Abstract] OR "Pain, Labor"[Title/Abstract] OR "Obstetric Pain"[Title/Abstract] OR "Pain, Obstetric"[Title/Abstract]))) OR ((Delivery, Obstetric[MeSH Terms]) OR ("Delivery, Obstetric"[Title/Abstract] OR "Deliveries, Obstetric"[Title/Abstract] OR "Obstetric Deliveries"[Title/Abstract] OR "Obstetric Delivery"[Title/Abstract]))) OR ((Natural Childbirth[MeSH Terms]) OR ("Natural Childbirth"[Title/Abstract] OR "Childbirth, Natural"[Title/Abstract] OR "Water Birth"[Title/Abstract] OR "Water Births"[Title/Abstract] OR "Waterbirth"[Title/Abstract] OR "Lamaze Technique"[Title/Abstract] OR "Technique, Lamaze"[Title/Abstract]))) OR ((Cesarean Section[MeSH Terms]) OR ("Cesarean Section"[Title/Abstract] OR "Cesarean Sections"[Title/Abstract] OR "Delivery, Abdominal"[Title/Abstract] OR "Abdominal Deliveries"[Title/Abstract] OR "Deliveries, Abdominal"[Title/Abstract] OR "Caesarean Section"[Title/Abstract] OR "Caesarean Sections"[Title/Abstract] OR "Abdominal Delivery"[Title/Abstract] OR "C-Section (OB) "[Title/Abstract] OR "C Section (OB) "[Title/Abstract] OR "C-Sections (OB) "[Title/Abstract] OR "Postcesarean Section"[Title/Abstract])) Sort by: Most Recent	28/06/2023 513,949
PUBMED	#2	((((((Exercise Movement Techniques[MeSH Terms])) OR ("Exercise Movement Techniques"[Title/Abstract] OR "Movement Techniques, Exercise"[Title/Abstract] OR "Exercise Movement Technics"[Title/Abstract] OR "Pilates-Based Exercises"[Title/Abstract] OR "Exercises, Pilates-Based"[Title/Abstract] OR "Pilates Based Exercises"[Title/Abstract] OR "Pilates Training"[Title/Abstract] OR "Training, Pilates"[Title/Abstract])) OR ((Exercise Therapy[MeSH Terms]) OR ("Exercise Therapy"[Title/Abstract] OR "Remedial Exercise"[Title/Abstract] OR "Exercise, Remedial"[Title/Abstract] OR "Exercises, Remedial"[Title/Abstract] OR "Remedial Exercises"[Title/Abstract] OR "Therapy, Exercise"[Title/Abstract] OR "Exercise Therapies"[Title/Abstract] OR "Therapies, Exercise"[Title/Abstract] OR "Rehabilitation Exercise"[Title/Abstract] OR "Exercise, Rehabilitation"[Title/Abstract] OR "Exercises, Rehabilitation"[Title/Abstract] OR "Rehabilitation Exercises"[Title/Abstract]))) OR ((Exercises[MeSH Terms]) OR (Exercises[Title/Abstract] OR "Physical Activity"[Title/Abstract] OR "Activities, Physical"[Title/Abstract] OR "Activity, Physical"[Title/Abstract] OR "Physical Activities"[Title/Abstract] OR "Exercise, Physical"[Title/Abstract] OR "Exercises, Physical"[Title/Abstract] OR "Physical Exercise"[Title/Abstract] OR "Physical Exercises"[Title/Abstract] OR "Acute Exercise"[Title/Abstract] OR "Acute Exercises"[Title/Abstract] OR "Exercise, Acute"[Title/Abstract] OR "Exercises, Acute"[Title/Abstract] OR "Exercise, Isometric"[Title/Abstract] OR "Exercises, Isometric"[Title/Abstract] OR "Isometric Exercises"[Title/Abstract] OR "Isometric Exercise"[Title/Abstract] OR "Exercise, Aerobic"[Title/Abstract] OR "Aerobic Exercise"[Title/Abstract] OR "Aerobic Exercises"[Title/Abstract] OR "Exercises, Aerobic"[Title/Abstract] OR "Exercise Training"[Title/Abstract] OR "Exercise Trainings"[Title/Abstract] OR "Training, Exercise"[Title/Abstract] OR "Trainings, Exercise"[Title/Abstract]))) OR ((Physical Therapy Modalities[MeSH Terms]) OR ("Physical Therapy Modalities"[Title/Abstract] OR "Modalities, Physical Therapy"[Title/Abstract] OR "Modality, Physical Therapy"[Title/Abstract] OR "Physical Therapy Modality"[Title/Abstract] OR "Physiotherapy (Techniques) "[Title/Abstract] OR "Physiotherapies (Techniques) "[Title/Abstract] OR "Physical Therapy Techniques"[Title/Abstract] OR "Physical Therapy Technique"[Title/Abstract] OR "Techniques, Physical Therapy"[Title/Abstract] OR "Group Physiotherapy"[Title/Abstract] OR "Group Physiotherapies"[Title/Abstract] OR "Physiotherapies, Group"[Title/Abstract] OR "Physiotherapy, Group"[Title/Abstract] OR "Physical Therapy"[Title/Abstract] OR "Physical Therapies"[Title/Abstract] OR "Therapy, Physical"[Title/Abstract] OR "Neurological Physiotherapy"[Title/Abstract] OR "Physiotherapy, Neurological"[Title/Abstract] OR Neurophysiotherapy[Title/Abstract]))) OR ((Patient Positioning[MeSH Terms]) OR ("Patient Positioning"[Title/Abstract] OR "Patient Positionings"[Title/Abstract] OR "Positioning, Patient"[Title/Abstract] OR "Positionings, Patient"[Title/Abstract])) Sort by: Most Recent	28/06/2023 548,904
PUBMED	#3	(Pelvic Floor[MeSH Terms]) OR ("Pelvic Floor"[Title/Abstract] OR "Floor, Pelvic"[Title/Abstract] OR "Pelvic Diaphragm"[Title/Abstract] OR "Diaphragm, Pelvic"[Title/Abstract] OR "Diaphragms, Pelvic"[Title/Abstract] OR "Pelvic Diaphragms"[Title/Abstract]) Sort by: Most Recent	28/06/2023 13,859
PUBMED	#4	#1 AND #2 AND #3	12/07/2023 276
PUBMED CENTRAL (PMC)	#5	#1 AND #2 AND #3	12/07/2023 16
BVS	#6	#1 AND #2 AND #3	12/07/2023 405
CINAHL	#7	#1 AND #2 AND #3	12/07/2023 190
WEB OF SCIENCE	#8	#1 AND #2 AND #3	12/07/2023 354
SCOPUS	#9	#1 AND #2 AND #3	12/07/2023 461
EMBASE	#10	('kinesiotherapy'/syn OR 'exercise'/syn OR physiotherapy:ti,ab,kw OR 'patient positioning'/syn) AND 'pelvic floor'/syn AND ('labor'/syn OR 'labor stage 1'/syn OR 'birth'/syn OR 'labor pain'/syn OR 'obstetric delivery'/exp OR 'natural childbirth'/syn OR 'cesarean section'/syn) AND ([embase]/lim NOT ([embase]/lim AND [medline]/lim) OR ([medline]/lim NOT ([embase]/lim AND [medline]/lim) NOT ([embase classic]/lim AND [medline]/lim)))	12/07/2023 505
PROQUEST Dissertations and Theses Global	#11	#1 AND #2 AND #3	12/07/2023 15

Study selection
After searching the databases, all documents found will be imported into the Rayyan web application[16], and duplicates will be removed. Blinding in the Rayyan application is activated, and two review authors independently analyze and select titles and abstracts according to the established inclusion and exclusion criteria. At the end of this phase, a third reviewer will mediate any disagreements, at which point the blinding of the selection will be removed.
All publications selected by both reviewers will proceed to a second screening stage and will be independently reviewed by the reviewers for eligibility criteria. After reading the full texts, disagreements will be resolved by discussion and consensus among the three reviewers. The reasons for the inclusion and exclusion of publications will be reported in the results and presented in the final scoping review.

Data extraction
To extract information from the included publications, we will use a tool developed by the review authors, which was constructed in a spreadsheet in Microsoft Excel 2019 according to the objectives of the review (Figure 4).

Figure 4 - Data extraction tool for the scoping review on pelvic floor mobility exercises during labor and delivery. Campinas, SP, Brazil, 2023

Variable	Standardization
Code	Text number – Database
Type of publication	Scientific articles, editorials and research notes, dissertations and theses
Year of publication	The year the study was published
Authors	Authors of the study
Objective	To detail the study objective
Method	Method as described by the author
Location	Service or place where the study was performed (geographical location)
Population and sample	Description of the women in labor, associated comorbidities, gestational age, and number of participants
Concept	Description of the type and application of the maternal pelvic floor mobility exercise
Context	Description of the timing of the maternal pelvic floor mobility exercise during labor (first period of labor, expulsion stage) and delivery
Results	Details of the results and outcomes found
Decision on inclusion or exclusion in the final review sample	Description of the decision on inclusion in the final review sample, categorized as yes or no. Description of the justification for non-inclusion.

Analysis and presentation of results
To analyze the data extracted from the publications, the main focus of each study is considered in light of the key concepts of this review, with a focus on labor and delivery assistance.
To demonstrate the quality of the information source, the authenticity of the included articles will be verified using the critical appraisal tools provided by JBI (https://jbi.global/critical-appraisal-tools), and any publication bias or selective reporting in the studies will be presented in the final scoping review.
The results will be organized in tables, charts, or graphs and synthesized in a narrative form, to cover the description of exercises for maternal pelvic floor mobility, including their use, context, and outcomes for labor and delivery, following the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses-Extension for Scoping Reviews (PRISMA-ScR)[15].

ACKNOWLEDGMENTS
We thank Ana Paula de Morais e Oliveira, Librarian of the Library of the School of Medical Sciences of the State University of Campinas (UNICAMP), for her assistance in developing the search strategy and accessing the databases.

CONFLICT OF INTERESTS
The authors have declared that there is no conflict of interests.

FUNDING
This paper was carried out with the support of the Fund for Support to Teaching, Research and Extension (FAEPEX) / UNICAMP. PIND Individual Projects No. 2547/23.

REFERENCES

1. Betran AP, Ye J, Moller AB, Souza JP, Zhang J. Trends and projections of cesarean section rates: global and regional estimates. BMJ Glob Health. 2021;6(6):e005671. http://dx.doi.org/10.1136/bmjgh-2021-005671
2. Dias BAS, Leal MC, Pereira APE, Pereira MN. Variações das taxas de cesariana e cesariana recorrente no Brasil segundo idade gestacional ao nascer e tipo de hospital. Cad. Saúde Pública. 2022;38(6):e00073621. https://doi.org/10.1590/0102-311XPT073621
3. Biana CB, Cecagno D, Porto AR, Cecagno S, Marques VA, Soares MC. Non-pharmacological therapies applied in pregnancy and labor: an integrative review. Rev Esc Enferm USP. 2021;55:e03681. https://doi.org/10.1590/S1980-220X2019019703681
4. Smith CA, Levett KM, Collins CT, Dahlen HG, Ee CC, Suganuma M. Massage, reflexology and other manual methods for pain management in labor. Cochrane Database Syst Rev. 2018;28(3):CD009290. https://doi.org/10.1002/14651858.CD009290.pub3
5. World Health Organization. WHO recommendations: Intrapartum care for a positive childbirth experience [Internet]. Geneva: World Health Organization; 2018 [cited 2023 ago 15]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK513809/
6. Rodrigues VADS, Abreu YR, Santos CAG, Gatti AF, Murer GM, Gontijo BDR, et al. Non Pharmacological labor pain management methods and risk of cesarean birth: A retrospective cohort study. Birth. 2022;49(3):464-473. https://doi.org/10.1111/birt.12617
7. Sousa JL, Silva IP, Gonçalves LRR, Nery IS, Gomes IS, Sousa LFC. Perception of puerperas on the vertical position in childbirth. Rev Baiana Enferm. 2018;32:e27499. https://doi.org/10.18471/rbe.v32.27499
8. Delgado A, Maia T, Melo RS, Lemos A. Birth ball use for women in labor: A systematic review and meta-analysis. Complement Ther Clin Pract. 2019;35:92-101. https://doi.org/10.1016/j.ctcp.2019.01.015
9. Cavalcanti ACV, Henrique AJ, Brasil CM, Gabrielloni MC, Barbieri M. Complementary therapies in labor: randomized clinical trial. Rev Gaucha Enferm. 2019;23(40):e20190026. https://doi.org/10.1590/1983-1447.2019.20190026
10. Akin B, Saydam BK. The effect of labor dance on perceived labor pain, birth satisfaction, and neonatal outcomes. Explore. 2020;16(5):310-317. https://doi.org/10.1016/j.explore.2020.05.017
11. Prata JA, Pamplona ND, Progianti JM, Mouta RJO, Correia LM, Pereira ALF. Non-invasive care technologies used by obstetric nurses: therapeutics contributions. Esc Anna Nery 2022;26:e20210182. https://doi.org/10.1590/2177-9465-EAN-2021-0182
12. Silva MRD, Krebs VA, Bellotto PCB, Oliveira LLD. O uso do Spinning Babies para progressão do trabalho de parto. Clinical and biomedical research. Porto Alegre. Clin Biomed Res. 2020 [cited 2023 aug 15];40(Supl.). Available from: https://www.lume.ufrgs.br/bitstream/handle/10183/231776/001132642.pdf?sequence=1
13. Gasquet B de. Mon cours de préparation à l'accouchement: la méthode de Gasquet pour accoucher de manière naturelle et physiologique. Paris: Marabout; 2019.
14. Peters MDJ, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated methodological guidance for the conduct of scoping reviews. JBI Evid Synth. 2020;18(10):2119-2126. http://dx.doi.org/10.11124/JBIES-20-00167
15. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018;169(7):467-73. http://dx.doi.org/10.7326/M18-0850
16. Rayyan. Rayyan for organizations [Internet]. [place unknown]: Rayyan; c2022 [cited 2023 aug 23]. Available from: https://www.rayyan.ai/

AUTHORSHIP CONTRIBUTIONS
Project design: Mafetoni RR, Pifaldini ACG, Lopes MHB de M
Data collection: Mafetoni RR, Pifaldini ACG
Data analysis and interpretation: Mafetoni RR, Pifaldini ACG, Sanfelice CF de O, Carmona EV, Lopes MHB de M
Writing and/or critical review of the intellectual content: Mafetoni RR, Pifaldini ACG, Balaminut T, Sanfelice CF de O, Carmona EV, Jacob LM da S, Jorge HMF, Lopes MHB de M
Final approval of the version to be published: Mafetoni RR, Pifaldini ACG, Balaminut T, Sanfelice CF de O, Carmona EV, Jacob LM da S, Jorge HMF, Lopes MHB de M
Responsibility for the text in ensuring the accuracy and completeness of any part of the paper: Mafetoni RR, Jorge HMF