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REVIEW PROTOCOL

Maternal pelvic mobility exercises in prenatal care: a scoping review protocol

Exercícios de mobilidade da pelve materna na assistência prénatal: um protocolo de revisão de escopo

Ejercicios de movilidad pélvica materna en la atención prenatal: un protocolo de revisión de alcance

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RESUMO

Objetivo: Mapear as publicações disponíveis sobre o uso de exercícios de mobilidade da pelve materna na preparação da gestante para o parto durante o pré-natal. **Critérios de inclusão:** Serão incluídos artigos científicos, editoriais, dissertações, teses e resumos expandidos publicados em eventos científicos, sem restrição de idioma ou de ano de publicação. **Metodologia:** Trata-se de um protocolo de revisão de escopo, estruturado de acordo com a metodologia do Joanna Briggs Institute e o guia PRISMA-ScR para registro. As buscas serão realizadas nas bases de dados: Pubmed e Pubmed Central, BVS, CINAHL, Web of Science, Scopus, EMBASE, PEDro, SPORTDiscus e ProQuest Dissertations and Thesis Global. A seleção dos artigos será realizada por dois revisores independentes pela plataforma Rayyan, sendo os conflitos sanados por um terceiro revisor. Os dados extraídos serão apresentados de forma descritiva, por meio de uma síntese dissertativa e analítica, alinhados com o objetivo e questão da pesquisa.

DESCRITORES: Gravidez; Cuidado pré-natal; Técnicas de exercício e de movimento; Assoalho pélvico; Terapias complementares.

ABSTRACT

Aim: To map publications on the use of maternal pelvic mobility exercises to prepare pregnant women for childbirth during prenatal care. **Inclusion criteria:** Scientific articles, editorials, dissertations, theses and expanded summaries published at scientific events will be included, without restrictions on language or year of publication. **Methods:** This is a scoping review protocol, structured according to the Joanna Briggs Institute methodology and the PRISMA-ScR guide for registration. Searches will be

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carried out in the following databases: Pubmed and Pubmed Central, VHL, CINAHL, Web of Science, Scopus, EMBASE, PEDro, SPORTDiscus and ProQuest Dissertations and Thesis Global. The selection of articles will be performed by two independent reviewers by the Rayyan platform. Conflicts will be solved by a third reviewer. The extracted data will be presented in a descriptive way, through a dissertation and analytical synthesis, according to the objective and research question.

DESCRIPTORS: Pregnancy; Prenatal care; Exercise movement techniques; Pelvic floor; Complementary therapies.

RESUMEN

Objetivo: Mapear las publicaciones disponibles sobre el uso de ejercicios de movilidad pélvica materna para preparar a las mujeres embarazadas para el parto durante la atención prenatal. **Criterios de inclusión:** Se incluirán artículos científicos, editoriales, disertaciones, tesis y resúmenes ampliados publicados en eventos científicos, sin restricciones de idioma o año de publicación. **Métodos:** Se trata de un protocolo de revisión de alcance, estructurado según la metodología del Instituto Joanna Briggs y la guía PRISMA-ScR para el registro. Las búsquedas se realizarán en las siguientes bases de datos: Pubmed y Pubmed Central, BVS, CINAHL, Web of Science, Scopus, EMBASE, PEDro, SPORTDiscus y ProQuest Dissertations and Thesis Global. La selección de artículos será realizada por dos revisores independientes através de la plataforma Rayyan, siendo los conflictos resueltos por un tercer revisor. Los datos extraídos serán presentados de forma descriptiva, a través de una disertación y síntesis analítica, alineada con el objetivo y pregunta dela investigación.

DESCRIPTORES: Embarazo; Atención prenatal; Técnicas de ejercicio con movimientos; Diafragma pélvico; Terapias complementarias.

INTRODUCTION

Prenatal care consists of a period of opportunities to promote diagnostic actions, health education and preparation of pregnant women for labor and childbirth. These actions should be qualified, humanized and hierarchical according to the period and gestational risk⁽¹⁾. Health professionals have an important role of articulating technical knowledge with the practice of prenatal care in order to obtain satisfactory results in maternal-fetal care.

Prenatal education plays a key role in informing women about childbirth, possible complications and physical mobility strategies to favor labor and childbirth, reduce anxiety and provide better outcomes at birth, especially in contexts of socioeconomic vulnerability and high rates of unnecessary cesarean sections⁽²⁻³⁾. Educational approaches performed in prenatal care may include information and use of integrative practices with the application of pelvic mobility exercises for pregnant women⁽⁴⁾.

Different integrative practices are offered to pregnant women in prenatal care and labor.² Studies of joint manipulation, active-free movements, relaxation of soft or myofascial tissues of the pelvis showed positive effects in the preparation of pregnant women for childbirth through these exercises⁽⁵⁻⁶⁾. A meta-analysis of 29 studies, with 2,217 pregnant women, showed that yoga exercises reduced anxiety, labor time and increased the chances of vaginal childbirth⁽⁵⁾. Another study⁽⁶⁾, a clinical trial with 200 pregnant women, promoted a series of 30-minute yoga sessions at the 30th, 32nd, 34th, 36th, 37th, 38th and 39th weeks of pregnancy. When comparing the outcomes of childbirth, the group that received yoga sessions

had a higher number of vaginal childbirths (p < 0.037), shorter labor time (p < 0.0003) and higher pain tolerance (p < 0.001).

These integrative practices, with application of different positions and exercises of preparation for childbirth should be discussed and oriented to pregnant women and their families during prenatal care. In a preliminary search carried out in June 2023, in the PubMed and Cochrane Database of Systematic Reviews, no scope or integrative review was found, published or in preparation, about this subject. Considering the need to identify and analyze publications about the exercises of preparation of the pregnant woman to childbirth, this scope review is proposed, in order to map and characterize the publications available about the use of maternal pelvis mobility exercises in prenatal care.

INCLUSION CRITERIA

The research will include scientific articles, editorials and research notes, dissertations and theses, without language restriction or year of publication that address the mobility exercises of the maternal pelvis in prenatal care.

The studies will be listed from the mnemonic strategy PCC (Population, Concept and Context): P - (Population) Pregnant women; C - (Concept) Mobility exercises of the maternal pelvis indicated for strengthening the pelvic muscles and/or opening the hip; C - (Context) Prenatal care services, without limitations regarding the geographical, cultural or socioeconomic context.

METHODOLOGY

Study design

This literature review protocol will use the methodology proposed by the Joanna Briggs Institute (JBI)⁽⁷⁾ for scoping review and its writing will be guided by the Preferred Report Items Flow Chart for Systematic Reviews and Meta-analyses for Scope Reviews (PRISMA-ScR)⁽⁸⁾. The methodological structure of the scope review will be carried out in five steps: 1) identification of the research question; 2) identification of the relevant studies that enable the scope and purpose of the review; 3) selection of the studies, according to predefined criteria; 4) data mapping; 5) comparison, summary and report of results⁽⁷⁾. The protocol of this review was registered in the Open Science Framework (OSF) platform under the DOI: 10.17605/OSF.IO/KQJU9

Research question

What publications are available about the use of pelvic mobility exercises in pregnant women during prenatal care?

Information Sources

Initially, a search was conducted in the databases of MEDLINE (Pubmed) and CINAHL, in June 2023, to identify articles related to the topic. Controlled descriptors in Health Sciences Descriptors (DeCS)

and Medical Subject Headings (MeSH) were selected, along with uncontrolled keywords (Chart 1).

DeCS/MeSH	Identified keywords
Pregnancy	Gestation; Pregnancies; Pregnant Women; Pregnant Woman; Woman, Pregnant;
	Women, Pregnant.
Prenatal Care	Care, Prenatal; Antenatal Care; Care, Antenatal; Prenatal.
Exercise	Movement Techniques, Exercise; Exercise Movement Techniques; Pilates-Based
Movement	Exercises; Exercises, Pilates-Based; Pilates Based Exercises; Pilates Training;
Techniques	Training, Pilates.
Exercise	Remedial Exercise; Exercise, Remedial; Exercises, Remedial; Remedial Exercises;
Therapy	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	Modality, Physical Therapy; Physical Therapy Modality; Physiotherapy (Techniques);
Therapy	Physiotherapies (Techniques); Physical Therapy Techniques; Physical Therapy
Modalities	Technique; Techniques, Physical Therapy; Group Physiotherapy; Group
	Physiotherapies; Physiotherapies, Group; Physiotherapy, Group; Physical Therapy;
	Physical Therapies; Therapy, Physical; Neurological Physiotherapy; Physiotherapy,
	Neurological; Neurophysiotherapy.
Patient	Patient Positionings; Positioning, Patient; Positionings, Patient.
Positioning	
Pelvic Floor	Floor, Pelvic; Pelvic Diaphragm; Diaphragm, Pelvic; Diaphragms, Pelvic; Pelvic
	Diaphragms.

Chart 1. Identification of descriptors and keywords

Source: Created by the authors.

Search strategy

The search strategy, including all descriptors and keywords, was adapted for each database (Chart 2), namely: Pubmed and Pubmed Central, VHL/Bireme, CINAHL, Web of Science, Scopus, EMBASE, PEDro and SPORTDiscus. The review will also cover unconventional literature (grey literature) from the ProQuest Dissertations and Thesis Global repository. The entire process of selecting the descriptors and search strategy was carried out with the help of a librarian.

Database	Search	arch strategy with descriptors and keywords according to eac Search Strategy	Date / N. of
Dalabase	Search	Search Strategy	articles
PUBMED	#1	(((Pregnancy[MeSH Terms]) OR (Pregnancy[Title/Abstract]	
FUDIVIED	#1		
		5 1 1	, ,
		Gestation[Title/Abstract])) OR (Prenatal[Title/Abstract] OR	
		Antenatal[Title/Abstract])) OR ((Pregnant Women[MeSH	
		Terms]) OR ("Pregnant Women"[Title/Abstract] OR	
		"Pregnant Woman"[Title/Abstract] OR "Woman,	
		Pregnant"[Title/Abstract] OR "Women,	
	<i>#</i> 0	Pregnant"[Title/Abstract]))) Sort by: Most Recent	00/00/0000
PUBMED	#2	((((((Exercise Movement Techniques[MeSH Terms])) OR	
		("Exercise Movement Techniques"[Title/Abstract] OR	548,904
		"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	
		Exercises [Title/Abstract] OR "Exercise,	
		Aerobic"[Title/Abstract] OR "Aerobic	
		Exercise"[Title/Abstract] OR "Aerobic	
		Exercises [Title/Abstract] OR "Exercises,	
	1	\Box	

Chart 2. Definition of the search strategy with descriptors and keywords according to each database

		As we bis WITH (Abother of)	1
		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 "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	
		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])) Sort by: Most Recent	00/00/0000
PUBMED	#3	(Pelvic Floor[MeSH Terms]) OR ("Pelvic	06/28/2023
		Floor"[Title/Abstract] OR "Floor, Pelvic"[Title/Abstract] OR	13,859
		"Pelvic Diaphragm"[Title/Abstract] OR "Diaphragm,	
		Pelvic"[Title/Abstract] OR "Diaphragms,	
		Pelvic"[Title/Abstract] OR "Pelvic	
		Diaphragms"[Title/Abstract]) Sort by: Most Recent	
PUBMED	#4	#1 AND #2 AND #3	07/12/2023
	<i>II</i> T		57
PUBMED	#5	#1 AND #2 AND #3	07/12/2023
-	#3		
CENTRAL			16
(PMC)			
BVS	#6	#1 AND #2 AND #3	07/12/2023
			475
CINAHAL	#7	#1 AND #2 AND #3	07/12/2023
			246
WEB OF	#8	#1 AND #2 AND #3	07/12/2023
SCIENCE	"0		567
	#0		
SCOPUS	#9	#1 AND #2 AND #3	07/12/2023
			636
EMBASE	#10	('pregnancy'/syn OR 'prenatal care'/syn OR	07/12/2023
		prenatal:ti,ab,kw OR antenatal:ti,ab,kw OR 'pregnant	550
		· ·	

		woman'/syn) AND ('kinesiotherapy'/syn OR 'exercise'/syn OR physiotherapy:ti,ab,kw OR 'patient positioning'/syn) AND 'pelvic floor'/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)))	
PROQUEST Dissertations and Thesis Global	#11	#1 AND #2 AND #3	07/12/2023 09
Global PEDro	#12	Pregnancy "Exercise Movement Techniques" "Pelvic Floor" (0) Pregnancy "Exercise Therapy" "Pelvic Floor" (02) Pregnancy Exercises "Pelvic Floor" (33) Pregnancy "Physical Therapy Modalities" "Pelvic Floor" (0) Pregnancy "Patient Positioning" "Pelvic Floor" (0) "Prenatal Care" "Exercise Movement Techniques" "Pelvic Floor" (0) "Prenatal Care" "Exercise Therapy" "Pelvic Floor"(0) "Prenatal Care" "Exercises "Pelvic Floor" (02) "Prenatal Care" "Physical Therapy Modalities" "Pelvic Floor"(0) "Prenatal Care" "Physical Therapy Modalities" "Pelvic Floor"(0) "Prenatal Care" "Patient Positioning" "Pelvic Floor"(0) Prenatal "Exercise Movement Techniques" "Pelvic Floor"(0) Prenatal "Exercise Therapy" "Pelvic Floor"(0) Prenatal "Exercise Therapy Modalities" "Pelvic Floor"(0) Prenatal "Exercise Therapy Modalities" "Pelvic Floor"(0) Antenatal "Exercise Movement Techniques" "Pelvic Floor"(0) Antenatal "Exercise Movement Techniques" "Pelvic Floor"(0) Prenatal "Physical Therapy Modalities" "Pelvic Floor"(0) Antenatal "Exercise Therapy" "Pelvic Floor"(0) Antenatal "Exercise Therapy Modalities" "Pelvic Floor"(0) Antenatal "Physical Therapy Modalities" "Pelvic Floor"(0)	10/25/2023
		"Pregnant Women" "Exercise Movement Techniques" "Pelvic Floor"(0) "Pregnant Women" "Exercise Therapy" "Pelvic Floor"(0)	
		"Pregnant Women" Exercises "Pelvic Floor"(19) "Pregnant Women" "Physical Therapy Modalities" "Pelvic Floor"(0) "Pregnant Women" "Patient Positioning" "Pelvic Floor"(0)	
SPORTDiscus	#13	#1 AND #2 AND #3	10/25/2023 58

Source: Created by the authors

Selection of the studies

After searching the databases, all the found documents will be gathered and inserted into the Rayyan web application (https://www.rayyan.ai/), in which duplications will be removed. Blinding in the Rayyan application will be activated and two reviewers will independently analyze and select the titles and abstracts, considering the inclusion criteria. At the end of this stage, there will be a third reviewer to mediate the possible divergences between the reviewers, when the blinding of the selection will be removed.

All studies selected by both reviewers will proceed to a second screening stage and undergo full text review, in relation to the eligibility criteria, also independently by the reviewers. After reading the full texts, the disagreements will be resolved through discussion and consent between the three reviewers. The reasons for inclusion and exclusion of the studies will be recorded and reported in the scope review.

Data extraction

Researchers will develop a data extraction instrument, composed of ten variables (Chart 3) and aligned with the objective of the review, in spreadsheet format in Microsoft Excel 2019. Authors of the included studies will be contacted to request missing or additional data when necessary.

Onart o. Bata oxtraotion					
Variable	Standardization				
Code	Text number – Database				
Publication type	Scientific articles, editorials and research notes, dissertations and theses				
Year of Publication	Year the study was published				
Authors	Study authors				
Objective	Detail the objective of the study				
Method	Method as described by the author				
Local	Service or space for carrying out the study (geographical location)				
Population and	Description of pregnant women, associated comorbidities, gestational age				
sample					
Concept (Theme) and	Maternal pelvic mobility exercises applied in prenatal care and/or gestational				
Context	period (1 st , 2 nd or 3 rd trimester)				
Results	Detail the results found: description of the exercises, form and period of				
	application, outcomes				
Decision regarding	Description of the decision on inclusion in the final review sample, categorized				
inclusion	as yes or no. Description of the justification for non-inclusion.				
0 0 1 1 1					

Chart 3. Data extraction instrument

Source: Created by the authors

Presentation and analysis of data

The findings will be organized in tables and synthesized in narrative form, in order to cover the description of mobility exercises of the maternal pelvis, in the form of application, context and outcomes for pregnancy and childbirth. The evidence will be analyzed through thematic analysis and descriptive statistics, expressed by absolute and relative frequencies.

FUNDING

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