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When analgesics are not enough: a scoping review of the non-pharmacological, conservative therapies in managing postpartum perineal pain

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 April 2024 and was last updated on 17 April 2024.

INTRODUCTION

Review question / Objective The study aimed to identify and map the existing evidence on the effects of non-pharmacological, conservative therapies such as electrophysical agents, complementary and alternative medicine, and physical therapy, on managing early postpartum perineal pain. This will fill the critical gap in the field of non-pharmacological, conservative approaches to postpartum pain management.

Background Postpartum perineal pain is a significant factor affecting women's postpartum functioning and nursing. Due to breastfeeding, the use of painkillers is relatively limited, and a considerable number of them are associated with side effects. Many alternative methods of pain management are not incorporated into treatment

regimens and the use of physical methods for postpartum perineal pain management could be considered as a complementary method due to the few adverse effects and often low costs. Applied preliminary research in Pubmed found reviews on groups of particular methods of relieving perineal pain after childbirth (for example, cold, warmth, and alternative methods such as essential oils, and music), but existing reviews fail to offer a comprehensive overview, as they are outdated. No review was found that addressed non-pharmacological methods with a focus on physical methods.

Rationale Postpartum perineal pain is a significant factor affecting women's postpartum functioning and nursing. Due to breastfeeding, the use of painkillers is relatively limited, and a considerable number of them are associated with side effects. Many non-pharmacological methods

of pain management are not included in treatment regimens, and the use of conservative therapies for postpartum perineal pain management could be considered a complementary method given the few adverse effects and often low cost.

Existing reviews fail to offer a comprehensive overview, as they are outdated. Although the topic of postpartum perineal pain management has been well-researched, new studies and approaches are published every year that shed light on various conservative treatments.

Even if the topic of managing postpartum perineal pain has been explored to date, new studies and approaches are being published every year that bring light to various alternative treatments. This study will fill the critical gap in the field of physical-based approaches in postpartum pain management.

METHODS

Strategy of data synthesis This scoping review followed the Joanna Briggs Institute (JBI) scoping review methodology and was reported according to PRISMA-ScR guidelines. The PCC (participant, concept, context) framework was used as recommended. Electronic databases: PubMed, EBSCO, CINAHL, Ovid, and Google Scholar were searched from May 2012 to December 2023. A total of 852 records from 2012-2024 were identified through the database search, and 5 additional studies were found through citations. After exclusion and screening of full-text articles, 29 publications on interventions in this setting were included in the final analysis: 23 randomized controlled trials (RCTs), 3 pilot RCT studies, 2 quasi-experimental studies - using a pre and post-test design, and 1 observational, case-control study. The studies were divided into 4 intervention groups: 1) electrotherapy (e.g., radiofrequency, transcutaneous electrical nerve stimulation – TENS), 2) light therapies (low-level laser therapy – LLLT, infrared light – IRF), 3) thermotherapy (warm pads and sitz baths, cold pads and cryo-gel), and 4) complementary methods (acupuncture and acupressure). We found no research about pelvic floor muscle training or manual therapy as a conservative method for postpartum pain relief.

Eligibility criteria Literature was included if it described the use of non-pharmacological methods for early postpartum pain management (up to 7 days after delivery) and investigated at least one of the following outcomes: pain, discomfort, healing process, edema, quality of life, and analgesics consumption. Conservative therapies of interest for this review were electrotherapy (e.g., transcutaneous electrical

nerve stimulation and radiofrequency), therapeutic ultrasound, exercise (e.g., pelvic floor muscle training), manual modalities (e.g., manual therapy, massage, drainage techniques), complementary methods (e.g., acupressure, acupuncture), light therapies (e.g., laser therapies, infrared light, red light), thermotherapy (warm or cold applications, water immersion).

Source of evidence screening and selection We used a search strategy aimed at locating published studies. An initial limited search of PubMed was undertaken to identify articles on the topic. The keywords in the titles and abstracts of relevant articles and the index terms used to describe the articles were used to develop a full search strategy. The strategy also included a combination of medical subject headings and free-text searches for terms related to the cited condition (postpartum perineal pain) and investigated interventions. Electronic databases: PubMed, EBSCO, CINAHL, Ovid, and Google Scholar were searched from May 2012 to December 2023. A total of 852 records from 2012-2024 were identified through the database search, and 5 additional studies were found through citations.

Three reviewers (J.S., Z.S. and M.E.G.) independently screened the titles and abstracts and identified relevant articles that met the inclusion criteria. Disagreements were resolved through discussion, and a fourth reviewer (M.S-P.) was included when needed. Titles and abstracts were screened by 2 independent reviewers (J.S. and Z.S.) for assessment against the inclusion criteria for the review. Reasons for exclusion were: Date of publication before 2012, use of pharmacological methods, use of approaches to relieve perineal pain in late postpartum (more than a week after delivery), the use of alternative methods like essential oils, music, hypnosis, eastern medicine (except acupuncture).

Keywords searched:

- perineal postpartum pain management
- perineal postpartum pain physiotherapy
- physiotherapeutic methods for relieving postpartum pain
- tecar postpartum perineal pain
- radiofrequency perineal pain
- laser postpartum perineal pain
- cold pads perineal pain
- cryo therapy postpartum perineal pain
- ultrasound therapy postpartum perineal pain
- TENS postpartum perineal pain
- warm pads perineal pain
- acupuncute, acupressure perineal pain postpartum

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- manual therapy perineal pain
 - pelvic floor muscle training perineal pain
 - physiotherapy postpartum perineal pain.

Data management Using a data extraction tool developed by the reviewers, 2 independent reviewers (J.S. and Z.S.) extracted relevant information from the full texts, including the study sample, subject, demographics, treatment details, data collection time points, outcome measures, dropouts, and results. Disagreements were resolved by consensus, and a third and fourth reviewers were involved when needed (M.E.G. and M. S-P). Effects on pain (e.g., pain intensity during intercourse), functional disability (e.g., sexual function), and participants' perceived improvement were analyzed. Additionally, adverse events (e.g., worsening of pain, skin burns) were assessed.

Reporting results / Analysis of the evidence A total of 852 records from 2012-2024 were identified through the database search, and 5 additional studies were found through citations. After exclusion and screening of full-text articles, 29 publications on interventions in this setting were included in the final analysis: 23 randomized controlled trials (RCTs), 3 pilot RCT studies, 2 quasi-experimental studies - using a pre and post-test design, and 1 observational, case-control study. The studies were divided into 4 intervention groups: 1) electrotherapy (e.g., radiofrequency, transcutaneous electrical nerve stimulation – TENS), 2) light therapies (low-level laser therapy – LLLT, infrared light – IRF), 3) thermotherapy (warm pads and sitz baths, cold pads and cryo-gel), and 4) complementary methods (acupuncture and acupressure). We found no research about pelvic floor muscle training or manual therapy as a conservative method for postpartum pain relief.

Presentation of the results The presentation of the results is planned in the form of a flowchart - as far as the selection of studies is concerned, and in the form of a table using the National Heart, Lung, and Blood Institute (NHLBI) Study Quality Assessment Tools (NIH quality assessment tools) for critical appraisal of individual studies.

Language restriction English language in searched articles.

Country(ies) involved Poland (Department of Gynecology, Obstetrics and Neonatology, Medical University of Gdańsk).

Keywords Postpartum, perineal pain, review, pain management, physical therapy, episiotomy.

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