

INTACT PERINEUM AND WOMEN'S POSTPARTUM HEALTH: SCOPING REVIEWO períneo íntegro na saúde da mulher no pós-parto: *scoping review*El periné íntegro en la salud de la mujer en el posparto: *scoping review*

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ABSTRACT

Background: perineal integrity is a recognized indicator of obstetric care quality and a determinant of women's postpartum health, with documented impact across multiple domains including perineal pain, urinary and fecal continence, sexual function, pelvic floor muscle function, and mental health. Available evidence remains scattered and lacks integrative mapping. **Objective:** to map the available evidence on health outcomes associated with perineal integrity in the postpartum period. **Methods:** a scoping review was conducted across CINAHL, Scopus, MEDLINE, Eric, MedicLatina, and the Cochrane Library, supplemented by grey literature search in RCAAAP. Thirty-two studies published between 1994 and 2024 were included. **Results:** included studies map five outcome domains: perineal pain (n=15), sexual function (n=13), urinary and anal incontinence (n=8), pelvic floor muscle function (n=7), and mental health (n=1). Studies stratifying findings by perineal condition consistently document an apparent tendency toward lower frequency and intensity of adverse outcomes in women with intact perineum, without allowing causal inference. **Conclusion:** mapped evidence supports the clinical relevance of perineal preservation, while acknowledging that methodological heterogeneity limits transferability of findings and warrants interpretive caution.

Keywords: parturition; perineum; women's health

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RESUMO

Enquadramento: a integridade perineal é um indicador da qualidade dos cuidados obstétricos e um determinante da saúde da mulher no pós-parto, com impacto em múltiplos domínios, incluindo a dor perineal, a continência urinária e fecal, a função sexual, a função muscular do pavimento pélvico e a saúde mental. A evidência disponível encontra-se dispersa e carece de mapeamento integrador. **Objetivo:** mapear a evidência disponível sobre os desfechos de saúde associados à integridade perineal no pós-parto. **Metodologia:** scoping review conduzida nas bases de dados CINAHL, Scopus, MEDLINE, Eric, MedicLatina e Cochrane Library, complementada por pesquisa de literatura cinzenta no RCAAAP. Foram incluídos 32 estudos publicados entre 1994 e 2024. **Resultados:** os estudos incluídos mapeiam cinco domínios de desfecho: dor perineal (n=15), função sexual (n=13), incontinência urinária e anal (n=8), função muscular do pavimento pélvico (n=7) e saúde mental (n=1). Os estudos estratificam os achados por condição perineal documentando uma tendência aparente de menor frequência e intensidade dos desfechos adversos em mulheres com períneo íntegro, todavia sem que seja possível estabelecer relações causais. **Conclusão:** a evidência mapeada sustenta a relevância clínica da preservação perineal, reconhecendo-se que a heterogeneidade metodológica do corpus limita a transferibilidade dos achados e impõe cautela interpretativa.

Palavras-chave: parto; períneo; saúde da mulher**RESUMEN**

Marco contextual: la integridad perineal es un indicador de la calidad de la atención obstétrica y un determinante de la salud de la mujer en el posparto, con impacto en múltiples dominios, incluidos el dolor perineal, la continencia urinaria y fecal, la función sexual, la función muscular del suelo pélvico y la salud mental. La evidencia disponible se encuentra dispersa y carece de mapeo integrador. **Objetivos:** mapear la evidencia disponible sobre los resultados de salud asociados a la integridad perineal en el posparto. **Metodología:** scoping review realizada en las bases de datos CINAHL, Scopus, MEDLINE, Eric, MedicLatina y Cochrane Library, complementada con búsqueda de literatura gris en RCAAAP. Se incluyeron 32 estudios publicados entre 1994 y 2024. **Resultados:** los estudios incluidos mapean cinco dominios de resultados: dolor perineal (n=15), función sexual (n=13), incontinencia urinaria y anal (n=8), función muscular del suelo pélvico (n=7) y salud mental (n=1). Los estudios que estratifican los hallazgos por condición perineal documentan una tendencia aparente de menor frecuencia e intensidad de los resultados adversos en mujeres con periné íntegro, sin que sea posible establecer relaciones causales. **Conclusión:** la evidencia mapeada sustenta la relevancia clínica de la preservación perineal; la heterogeneidad metodológica del corpus limita la transferibilidad de los hallazgos e impone cautela interpretativa.

Palabras clave: parto; perineo; salud de la mujer

INTRODUCTION

The postpartum period is a critical phase in a woman's life, marked by profound physical, emotional and social changes (Ordem dos Enfermeiros, 2021), with perineal integrity being a key indicator of the quality of obstetric care and a recognised determinant of pelvic floor health and quality of life in the postpartum period (World Health Organisation [WHO], 2018).

Indeed, perineal integrity is linked to a broad and interdependent set of postpartum maternal outcomes, which the literature has addressed from multiple angles, such as perineal pain, urinary and faecal continence, sexual function, pelvic floor function and mental health; and which, precisely because of their multidimensional nature, require an integrated approach.

Indeed, the available evidence is scattered across studies with heterogeneous methodological designs, covering distinct outcomes in populations with varying parities and obstetric profiles, assessed over time frames ranging from the first few hours after delivery to the twelve months that follow. Furthermore, there is a lack of conceptual standardisation in the core constructs and substantial diversity in the assessment tools used, which hinders direct comparison between studies and prevents a consolidated overview of the current state of knowledge.

It is precisely this landscape – characterised by heterogeneous study designs, diverse outcomes, conceptual variability and the absence of any prior comprehensive synthesis – that justifies the choice of a scoping review as the appropriate methodological approach (Campbell et al., 2023; Munn et al., 2018; Peters et al., 2020), an approach that enables us to map the extent and nature of the evidence, identify the

predominant study designs and persistent gaps, and guide future research. A preliminary search conducted in the MEDLINE and CINAHL databases, as well as in the Open Science Framework and the JBI Systematic Review Register, confirmed the absence of reviews that comprehensively integrate the multiple domains of maternal outcomes associated with perineal integrity in the postpartum period, reinforcing the relevance and originality of this review.

Accordingly, the overall aim of this scoping review is to map the available evidence on the impact of an intact perineum on women's health in the postpartum period, with the specific aim of identifying and thematically organising the outcome domains addressed in the literature, characterising the methodological designs, populations, time frames and assessment tools used, highlight the conceptual heterogeneity of the constructs employed, and identify existing gaps in order to guide future research within the field of specialised nursing care in maternal and obstetric health.

This review does not include studies focusing on interventions designed to promote perineal integrity during childbirth; this decision limits the scope to the mapping of outcomes rather than the assessment of the effectiveness of preventive measures.

METHODOLOGICAL REVIEW PROCEDURES

This scoping review was conducted in accordance with the framework proposed by the Joanna Briggs Institute (JBI) (Peters et al., 2020; Peters et al., 2021) and the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Page et al., 2021).

Research question

The research question guiding the review was formulated as follows: ‘What are the women’s health outcomes associated with perineal integrity in the

post-vaginal delivery period as reported in the scientific literature?’. To clarify the key elements of the scoping review, the PCC (Population, Concept and Context) table was drawn up as shown in Table 1.

Table 1
Population, concept and context

Element	Description
Population	Women in the post-vaginal delivery period – Women who had undergone vaginal delivery (eutocic and dystocic deliveries assisted by vacuum extraction or forceps) up to the late postpartum period. All women were included, regardless of parity, including both primiparous and multiparous women.
Concept	Intact perineum and postpartum maternal health outcomes. An intact perineum is defined as the absence of lacerations or episiotomy; and the associated postpartum health outcomes reported in the literature in connection with this condition.
Context	The post-vaginal delivery period, comprising three time frames: the immediate postpartum period (the first 24 hours), the early postpartum period (the first seven days up to six weeks) and the late postpartum period (from two to twelve months), as defined by the WHO (2022) and the American College of Obstetricians and Gynaecologists (ACOG, 2018), including different scenarios such as immediate hospital care, community-based care, and follow-up in postpartum rehabilitation programmes.

Eligibility criteria

The eligibility criteria were defined in accordance with the PCC strategy. With regard to the population, studies involving women in the post-vaginal delivery period, both primiparous and multiparous, were included, with no restrictions regarding the use of instruments. In terms of the concept, studies were considered that addressed perineal integrity – defined as an intact perineum as opposed to tears or episiotomy – and associated maternal health outcomes, with a focus on pelvic floor health, sexual function, perinatal mental health and perineal pain. With regard to context, studies were included where assessments were carried out between the first 24 hours and 12 months after delivery, in accordance with the concept of the comprehensive postnatal period (WHO, 2022) and ACOG Committee Opinion 736 (2018).

Quantitative studies (clinical trials, cohort studies, case-control studies), qualitative studies, systematic

reviews and meta-analyses were considered, with no restrictions on language or publication date. The simultaneous inclusion of primary studies and evidence syntheses followed the guidelines of Peters et al. (2020); to prevent duplication of evidence, primary studies already included in the reviews were explicitly identified and the results presented descriptively, without quantitative aggregation. Research protocols, studies not focused on the health of women following vaginal delivery, and those that did not allow outcomes to be distinguished according to perineal integrity were excluded.

A pesquisa foi realizada nas bases de dados CINAHL, Scopus, MEDLINE, Eric, MedicLatina (via EBSCO) e Cochrane Library, complementada por literatura cinzenta através do RCAAP. A pesquisa decorreu em setembro de 2025.

Research strategy

The search strategy was developed in three stages, in accordance with Pollock et al. (2021). In the first stage,

a limited exploratory search was carried out in the MEDLINE and CINAHL databases, with the aim of identifying relevant articles and analysing the terms present in the titles, abstracts and indexed subject headings. In the second stage, and based on the terms identified, a comprehensive search strategy was constructed and adapted for each database, using controlled subject headings (MeSH in MEDLINE, CINAHL Subject Headings in CINAHL, DeCS/MeSH in the Ibero-Portuguese-speaking databases) and free-text keywords, linked using the Boolean operators AND and OR, adapted to the specific syntax of each interface. In a third stage, a search of grey literature was conducted and the reference lists of the included studies were analysed, with the aim of identifying additional potentially relevant publications.

The search terms used covered three conceptual areas: the anatomical phenomenon (intact perineum, perineal integrity, episiotomy, perineal lacerations); postpartum health outcomes (pelvic floor status, maternal health, postpartum health); and the temporal context (postpartum, puerperium), combined with one another and with generic linking terms. The decision to use English terms for internationally indexed databases is justified by the greater sensitivity of their indexing systems to English-language descriptors; at the same time, coverage of Iberian and Lusophone literature was ensured through MedicLatina and RCAAP, using equivalent descriptors in Portuguese (DeCS) and Spanish, in line with the recommendations of Nussbaumer-Streit et al. (2020) for reviews conducted in multilingual contexts.

Selection of studies

Reference management and the selection process were supported by the Rayyan software (Ouzzani et al., 2016). Prior to the formal start of the selection process, a pilot test was carried out using a subset of the identified studies, with the aim of assessing the clarity and consistency of the eligibility criteria and the suitability of the data extraction tool, in accordance with Peters et al. (2021); this process was conducted independently by two reviewers, followed by a discussion of any discrepancies and refinement of the criteria.

The selection of studies was carried out in two stages. In the first stage, two reviewers independently assessed the titles and abstracts of the identified studies, excluding those that clearly did not meet the eligibility criteria. In the second stage, the potentially eligible studies were assessed in full text by the same independent reviewers. Disagreements at both stages were resolved through reflective discussion between the two reviewers, with systematic reference to the predefined eligibility criteria and the decisions recorded during the pilot test, until documented consensus was reached in all identified cases; this procedure was supplemented by a deferred re-evaluation of studies where conceptual doubts persisted, which proved sufficient for the consensual resolution of all discrepancies. The flow of the selection process is illustrated in Figure 1, in accordance with the PRISMA-ScR model (Page et al., 2021).

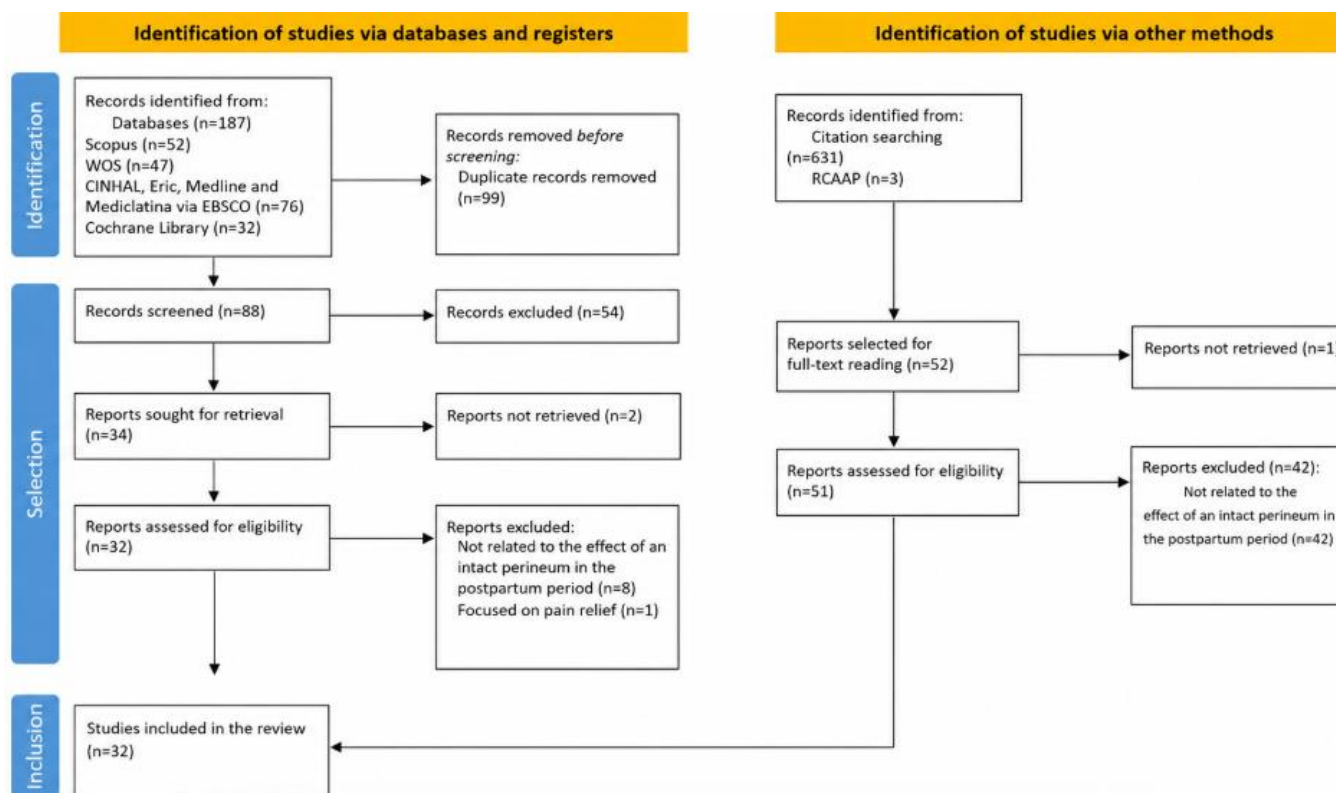


Figure 1
PRISMA-ScR flowchart (adapted from Page et al., 2021)

Data extraction

Data extraction was carried out using a checklist developed for this purpose, adapted from the JBI data extraction instrument (Peters et al., 2020) and tested in the initial pilot study. Data from the included studies were extracted using a data extraction table developed for this purpose. The information extracted included: bibliographic data (author, year, country of origin); participant characteristics (parity); study design and data collection strategy; variables under analysis (intact perineum versus perineal tears); outcomes measured; and main findings and conclusions. Data extraction was carried out by one reviewer and independently verified by a second reviewer; any discrepancies were resolved through discussion and, where necessary, with the assistance of a third reviewer.

Data analysis and synthesis

The data were organised narratively and thematically, in accordance with the JBI guidelines for scoping reviews (Campbell et al., 2023; Peters et al., 2020). The reported outcomes were systematically coded and grouped by conceptual similarity, in a process conducted by two reviewers, with disagreements resolved by consensus and by referring to the criteria defined in the pilot study. The resulting domains are presented in the Results section, accompanied by the conceptual and operational heterogeneity identified across the studies. Gaps in the literature were identified based on the least-explored domains, the variability of outcomes, and the methodological limitations acknowledged by the authors themselves; these are the subject of specific analysis in the Discussion section.

RESULTS

This review includes 32 studies published between 1994 and 2024, examining women’s postpartum health outcomes following vaginal delivery, as described in the literature in relation to perineal integrity. The scope lies within the broader field of postpartum maternal health, with a focus on pelvic

floor domains – where the greatest body of evidence is concentrated – whilst also incorporating, in a complementary manner, sexual and mental health outcomes. The distribution of studies across the different domains, and the overlap of studies spanning more than one domain, is presented in Table 2.

Table 2

Distribution of studies by identified postpartum health outcomes

Element	Description
Perineal pain	Andrews et al. (2008); Dannecker et al. (2004); Huber et al. (2021); Imarengiaye e Andet (2008); Klein et al. (1994); Leeman et al. (2007); Leeman et al. (2016); Macarthur e Macarthur (2004); Manresa et al. (2019); Manresa et al. (2020); Persico et al. (2013); Senol e Aslan (2018); Shahraki et al. (2011); Yamada et al. (2024)
Urinary and/or faecal incontinence	Bols et al. (2010); Franz et al. (1999); Huber et al. (2021); Klein et al. (1994, 2005); Rikard-Bell et al. (2014); Signorello et al. (2001); Williams et al. (2007)
Sexual function	Andrews et al. (2008); Barrett et al. (2000); Buhling et al. (2006); De Souza et al. (2015); Gommesen et al. (2019); Huber et al. (2021); Klein et al. (1994, 2005); Manresa et al. (2020); McDonald e Brown (2013); McDonald et al. (2015); Rodrigues et al. (2024); Rogers et al. (2009); Signorello et al. (2001); Williams et al. (2007)
Pelvic floor muscle function	Fleming et al. (2003); Klein et al. (1994); Leeman et al. (2007); Leeman et al. (2016); Rikard-Bell et al. (2014); Rodrigues et al. (2024)
Mental health (postnatal depression)	Khalaf et al. (2023)

Characteristics of the studies included in the review

From a methodological perspective, the corpus is predominantly based on observational approaches: 16 prospective cohort studies (Andrews et al., 2008; Barrett et al., 2000; De Souza et al., 2015; Franz et al., 1999; Gommesen et al., 2019; Huber et al., 2021; Klein et al., 2005; Leeman et al., 2007; Leeman et al., 2016; Macarthur & Macarthur, 2004; McDonald & Brown, 2013; McDonald et al., 2015; Persico et al., 2013; Rikard-Bell et al., 2014; Rogers et al., 2009; Signorello et al., 2001), two retrospective cohort studies (Khalaf et al., 2023; Signorello et al., 2001), five descriptive cross-sectional studies (Buhling et al., 2006; Manresa et al., 2020; Shahraki et al., 2011; Williams et al., 2007; Yamada et al., 2024) and three prospective studies of

unspecified design (Fleming et al., 2003; Imarengiaye & Andet, 2008; Senol & Aslan, 2018). In the experimental category, there is one randomised clinical trial (Dannecker et al., 2004) and two secondary analyses of randomised clinical trials (Klein et al., 1994; Rodrigues et al., 2024), in addition to which there are two systematic reviews, one involving a meta-analysis (Manresa et al., 2019) and the other a qualitative synthesis (Bols et al., 2010).

Regarding geographical distribution, the data is concentrated in high-income countries, predominantly in Europe (n=12: Germany, n=3; the United Kingdom, n=3; Spain, n=2; Denmark, Italy, the Netherlands and Sweden, n=1 each) and North America (n=10: the United States of America, n=6; Canada, n=4), followed

by Oceania (n=4, all from Australia), Asia (n=4: Iran, Japan, Oman and Turkey, n=1 each), South America (Brazil, n=1) and Africa (Nigeria, n=1), highlighting the under-representation of low- and middle-income contexts.

The study populations include primiparous women (n=14) and a group comprising both primiparous and multiparous women (n=18), with follow-up periods spread across four-time windows: the first 48 hours, the first week to the first month, three months, and six months to one year postpartum. The assessment is concentrated in the early time windows, whilst there is a scarcity of long-term follow-ups; this gap limits the characterisation of health trajectories in the late postpartum period.

Perineal pain

Perineal pain is the most frequently reported outcome in the corpus of this review, featuring in 15 of the 32 included studies, spanning multiple time periods during the postpartum period, ranging from the first 24 to 48 hours up to 12 months postpartum, and assessed using a variety of instruments, namely verbal scales, visual analogue scales and self-administered questionnaires, which represents significant methodological variability in the interpretation of findings across studies.

In the earliest postpartum period – specifically the first 48 hours and the first week – pain is described as a highly prevalent phenomenon; Andrews et al. (2008) report that 92% of women experienced perineal pain on the first day, with progressive resolution in 88% by two months. During this period, studies have examined the intensity, location and temporal pattern of pain, as well as the need for analgesia (Dannecker et al., 2004; Imarengiaye & Andet, 2008; Klein et al., 1994; Leeman

et al., 2007; Macarthur & Macarthur, 2004; Persico et al., 2013; Senol & Aslan, 2018; Shahraki et al., 2011).

In addition, the intermediate-to-late follow-up period, corresponding to three to twelve months postpartum, is addressed in fewer studies (Huber et al., 2021; Leeman et al., 2016; Yamada et al., 2024), in which a general reduction in the prevalence and intensity of pain is observed, although with more significant residual pain in women with more severe perineal injuries, particularly in the presence of anal sphincter injury (Huber et al., 2021). The synthesis presented in the systematic review with meta-analysis by Manresa et al. (2019), as well as the descriptive cross-sectional study by Manresa et al. (2020), map this temporal pattern, identifying perineal pain as a predominantly transient outcome, albeit one that is clinically relevant in a subgroup of women with moderate to severe perineal trauma.

In the included studies, women with an intact perineum or a first-degree tear are characterised by lower pain intensity, less use of analgesia and faster resolution, particularly in the first few hours and days following childbirth (Franz et al., 1999; Leeman et al., 2016; Macarthur & Macarthur, 2004; Persico et al., 2013; Shahraki et al., 2011), although these results are not consistent across all studies, and perineal pain has also been reported in women with no documented trauma.

Indeed, the reviewed literature documents distinct patterns of postpartum perineal pain in terms of intensity, temporal pattern and analgesic use, which, in the included studies, were associated with the perineal condition at birth (Andrews et al., 2008; Huber et al., 2021; Leeman et al., 2007; Leeman et al., 2016; Macarthur & Macarthur, 2004; Manresa et al., 2019;

Manresa et al., 2020; Signorello et al., 2001; Yamada et al., 2024). However, the heterogeneity of the assessment tools, the timing of measurements and the operational definitions of 'intact perineum' themselves limits the direct transferability of findings between studies and warrants interpretative caution when extrapolating to the practice of specialised nursing care in maternal and obstetric health.

Urinary and bowel incontinence (faeces and flatulence)

Urinary incontinence and faecal incontinence, which involves the involuntary loss of faeces and flatus, emerge as two clinically distinct phenomena, although they are frequently assessed together in the included studies, as documented in 8 of the 32 studies in this review. The assessments span varying time frames, ranging from the immediate postpartum period to medium-term follow-ups (Franz et al., 1999; Huber et al., 2021; Klein et al., 2005; Rikard-Bell et al., 2014; Signorello et al., 2001), using a variety of instruments, ranging from self-report questionnaires and symptom severity scales to structured clinical records (Bols et al., 2010; Williams et al., 2007), which, similarly to what was identified in the other domains, limits the comparability of findings across studies.

With regard to urinary incontinence, the included studies examine this outcome over different time frames and in association with different perineal conditions (Franz et al., 1999; Huber et al., 2021; Klein et al., 1994; Klein et al., 2005; Rikard-Bell et al., 2014), linking it to concurrent domains, namely sexual function and pelvic floor muscle function, within an integrative understanding of the pelvic recovery trajectory in the postpartum period.

Anal incontinence is examined in greater detail in three of the eight studies in this field. Signorello et al. (2001) constitute the central reference, documenting findings on involuntary faecal and flatus leakage and identifying distinct profiles depending on the type of perineal trauma; Williams et al. (2007) add a perspective centred on women's lived experience, mapping the impact of this outcome across dimensions that go beyond quantitative clinical records; Bols et al. (2010), the only systematic review in this field, conducted an exclusively qualitative analysis since, in the authors' own words, sources of clinical and methodological heterogeneity made a meta-analysis unfeasible, which highlights the fragmented state of the available evidence.

The stratification of findings according to perineal condition at birth is a common feature across several of the included studies, with considerable variation in the operationalised categories and the criteria defining each perineal configuration. Signorello et al. (2001) document differences in anal incontinence profiles among women with an intact perineum, spontaneous lacerations and episiotomy; Huber et al. (2021), Klein et al. (1994, 2005) and Rikard-Bell et al. (2014) provide additional data on urinary and anal incontinence according to perineal condition at birth. The lack of uniform criteria for defining an 'intact perineum' and the variation in the classification of lacerations across the included studies limit the comparability of the findings attributed to each specific category.

Effectively, when mapping the distribution of urinary and faecal incontinence findings across the included studies, the literature documents the consistent presence of these outcomes in the postpartum period in association with the perineal condition at birth;

however, the diversity of assessment tools, classification criteria and follow-up timeframes limits the direct transferability of the findings; therefore, the results summarised here should be interpreted as a review of the current state of the available evidence and not as a prevalence estimate or evidence of a causal relationship. In this regard, studies that stratify findings by perineal condition consistently document an apparent trend towards a lower incidence of urinary and faecal incontinence in women with an intact perineum, compared with those with perineal trauma documented by spontaneous laceration or episiotomy (Bols et al., 2010; Franz et al., 1999; Huber et al., 2021; Klein et al., 1994, 2005; Rikard-Bell et al., 2014; Signorello et al., 2001). This trend, given its consistency across the body of research, warrants mention, although this does not imply any causal inference.

Sexual function

Sexual function is the second most widely examined domain in the corpus of this review, featuring in 13 of the 32 included studies. According to the relevant literature, female sexual function is a multidimensional construct that integrates physical, psychological and relational components that are often interdependent, which justifies its operationalisation as a broad category in this comprehensive review. The included studies report distinct dimensions, namely dyspareunia, sexual satisfaction, sexual desire and resumption of sexual activity, organised in this section according to the clinical specificity with which each is addressed in the corpus.

Dyspareunia is the most widely represented subdomain in this corpus, documented in studies that stratify findings by type of perineal trauma at birth (Buhling et al., 2006; Signorello et al., 2001) and in

follow-up studies that incorporate multiple indicators of postpartum perineal and pelvic recovery (Klein et al., 1994, 2005; Manresa et al., 2020).

Sexual satisfaction, defined as the subjective perception of the quality of the sexual experience, has been examined in studies using a variety of measurement tools and time points, including cohorts with different perineal conditions (De Souza et al., 2015; Huber et al., 2021; Rogers et al., 2009), complemented by the qualitative perspective of Williams et al. (2007) on the impact of perineal symptoms on the experience of sexuality.

The resumption of sexual activity following childbirth is examined in studies that document the timing and factors associated, in the included studies, with the perineal condition at birth (Andrews et al., 2008; McDonald & Brown, 2013; McDonald et al., 2015); In addition, Rodrigues et al. (2024) contribute data on sexual function which, within the same study, are linked to the assessment of pelvic floor muscle function; they are therefore listed under both the 'sexual function' and 'pelvic floor muscle function' domains in Table 2 of this review.

The stratification of findings by perineal condition at birth cuts across the field, with documented differences in dyspareunia profiles amongst women with an intact perineum, those with spontaneous lacerations and those who have undergone an episiotomy (Buhling et al., 2006; Huber et al., 2021; Klein et al., 1994, 2005; Manresa et al., 2020; Signorello et al., 2001), with the interdependence between sexual function and pelvic floor muscle function highlighted by Rodrigues et al. (2024).

Actually, the literature reviewed documents the consistent presence of sexual function outcomes in the

postpartum period in association with the perineal condition at birth; however, the diversity of assessment tools, timing of measurements and operational definitions of sexual function categories limits the direct transferability of the findings; therefore, the results summarised here should be interpreted as a review of the current state of the available evidence rather than as evidence of a causal relationship. In this regard, studies that stratify findings by perineal condition consistently document an apparent trend towards better sexual function, a lower frequency of dyspareunia and an earlier resumption of sexual activity in women with an intact perineum (Buhling et al., 2006; Klein et al., 1994, 2005; Manresa et al., 2020; Rodrigues et al., 2024; Signorello et al., 2001). Given its consistency across the body of research, this trend warrants mention, without this implying any causal inference.

Muscle function of the pelvic floor

Pelvic floor muscle function is addressed in seven of the 32 studies included in this review and constitutes an area of assessment that utilises a variety of tools, including manual assessment using the Modified Oxford Scale, perineometry and electromyography, across time frames ranging from the immediate postpartum period to medium-term follow-ups. The heterogeneity of assessment methods and the criteria used to measure pelvic floor muscle strength and tone limits, in this area as in the previous ones, the comparability of findings across the included studies. The included studies document findings regarding pelvic floor muscle function in relation to the extent and depth of perineal trauma at birth. Leeman et al. (2016) present the study with the most significant quantitative findings in this area, reporting lower

muscle strength in women with trauma deeper than two centimetres compared with those with more superficial trauma (44.3% vs. 61.0%); these data are linked in the same study to indicators of perineal pain (15.5% vs. 6.2%), highlighting the clinical interdependence between these two outcomes. Klein et al. (1994) chart indicators of muscle function in follow-up studies incorporating multiple perineal and pelvic outcomes; Fleming et al. (2003) and Leeman et al. (2007) describe findings on muscle recovery in association with different perineal conditions; Rikard-Bell et al. (2014) link muscle function to urinary incontinence symptoms; Rodrigues et al. (2024) provide contemporary data linking muscle function to sexual function, with this domain being classified under both the muscle function and sexual function domains (Table 2).

The literature reviewed documents the consistent presence of pelvic floor muscle function outcomes in the postpartum period in association with the perineal condition at birth; however, the heterogeneity of assessment tools, criteria for classifying muscle function and follow-up timeframes limits the direct transferability of the findings; therefore, the results summarised here should be interpreted as a review of the current state of the evidence rather than as evidence of a causal relationship. In this regard, studies that stratify findings by perineal condition consistently document an apparent trend towards better pelvic floor muscle function in women with an intact perineum or with more superficial trauma, compared with those with trauma of greater extent or depth (Klein et al., 1994; Leeman et al., 2007, 2016; Rikard-Bell et al., 2014; Rodrigues et al., 2024). This trend, supported by the quantitative evidence provided by

Leeman et al. (2016), warrants noting, although this does not imply any causal inference.

Postnatal depression

Postnatal mental health, as measured by the risk of postnatal depression, is the least represented domain in the corpus, featuring in only one of the 32 included studies. Khalaf et al. (2023), in a retrospective cohort study involving 262 Omani mothers, assessed postpartum depression using the Edinburgh Postnatal Depression Scale (EPDS), documenting significantly higher scores in the episiotomy group (10.4; SD=5.4) compared with the group with lacerations (8.1; SD=4.8) and the group with an intact perineum (9.4; SD=4.9) (p -value<0.05). However, when the comparison groups women with perineal trauma against those with an intact perineum, the mean difference of 1.24 points in the EPDS score did not reach statistical significance (p -value > 0.05), which calls for caution in interpretation and precludes the assertion of a consistent association between an intact perineum and a lower risk of postnatal depression based on this single study.

The fact that this area is represented by a single retrospective cohort study, conducted in a specific population of Omani mothers, substantially limits the generalisability of the findings; the data presented should be interpreted as an exploratory contribution, recognising that the evidence available in the body of this review is insufficient to support conclusions in this area and that further research with more diverse samples and more robust methodological designs appears necessary.

DISCUSSION

This scoping review mapped the available evidence on the impact of perineal integrity on women's postpartum health, identifying 32 studies covering five outcome domains: perineal pain, urinary and faecal incontinence, sexual function, pelvic floor muscle function and mental health. The distribution of studies across these domains is uneven: perineal pain and sexual function account for the highest concentration of evidence, with 15 and 13 studies respectively, whilst postpartum mental health is the least represented domain, with only one study included (Khalaf et al., 2023), reflecting a significant imbalance in the state of research on outcomes associated with perineal conditions following childbirth.

The predominance of observational designs in the corpus is a cross-cutting methodological feature that needs to be contextualised: these designs are suitable for identifying associations, but do not allow causal relationships to be established between perineal condition at birth and postpartum health outcomes. The heterogeneity of assessment tools, the variability in follow-up time frames and the inconsistency in the operational definitions of 'intact perineum' across the included studies further limit the comparability of the findings and preclude quantitative syntheses.

Nevertheless, studies that stratify findings by perineal condition consistently report an apparent trend towards a lower frequency and intensity of adverse outcomes in women with an intact perineum, compared with those with documented perineal trauma, in the areas of perineal pain (Andrews et al., 2008; Leeman et al., 2007, 2016), urinary and faecal incontinence (Klein et al., 1994, 2005; Signorello et al., 2001), sexual function (Buhling et al., 2006; Manresa et

al., 2020; Signorello et al., 2001) and pelvic floor muscle function (Leeman et al., 2016; Rodrigues et al., 2024). The consistency of this pattern does not permit causal conclusions, but it does provide evidence that warrants further research using more robust methodological designs.

Analysis of the corpus reveals several significant gaps: the predominance of observational studies, the lack of uniform criteria for defining an 'intact perineum', the under-representation of studies on postpartum mental health, the scarcity of follow-ups beyond twelve months, and the concentration of studies in high-income country settings. Accordingly, priorities for future research include the standardisation of operational definitions and assessment tools, the development of prospective studies with extended follow-up periods, investment in research on postpartum mental health in relation to perineal condition, and the conduct of studies in more diverse clinical and cultural contexts.

Notwithstanding the limitations inherent in the methodological heterogeneity of the corpus and the descriptive nature of a scoping review's remit, this study provides a systematic mapping of the available evidence on health outcomes associated with perineal integrity at birth. For specialist nurses in maternal and obstetric care, the findings support the clinical relevance of perineal preservation in the provision of care, whilst recognising that consolidating this evidence requires future research with greater methodological rigour.

CONCLUSION

This scoping review systematically mapped the available evidence on the impact of perineal integrity on women's postpartum health, identifying 32 studies published over more than two decades and categorised into five outcome domains: perineal pain, urinary and faecal incontinence, sexual function, pelvic floor muscle function and mental health. The included studies consistently document an apparent trend towards a lower frequency and intensity of adverse postpartum outcomes in women with an intact postpartum perineum, which, in the studies reviewed, was associated with the absence of perineal trauma; however, the predominance of observational designs, the heterogeneity of assessment tools and the variability in the operational definitions of 'intact perineum' across the included studies prevent the drawing of causal conclusions and limit the direct transferability of the findings.

For nurses specialising in maternal and obstetric nursing, the findings identified reinforce the clinical relevance of perineal preservation as an intentional component of care provision during labour and delivery, supporting the need for evidence-informed practices in this field. Consolidating this evidence base therefore requires future research with more robust methodological designs, standardised operational definitions and extended longitudinal follow-ups, which will enable a more precise characterisation of the association between perineal condition at birth and women's postpartum health outcomes.

CONFLICT OF INTEREST

The authors declare that there are no conflict of interest.

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