



## Review Article

## Nurse and midwife interventions to protect, promote and support breastfeeding: An umbrella review

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## ABSTRACT

**Background:** Low breastfeeding rates continue to be a global concern among nurses and midwives, raising critical questions about knowledge and effectiveness in promoting breastfeeding. Summarising evidence on nursing and midwifery interventions to protect, promote, and support breastfeeding enables a deeper understanding of how these professionals can enhance breastfeeding practices, inform decision-makers, and improve care quality.

**Aim:** To synthesise nursing and midwifery interventions that protect, promote, and support breastfeeding.

**Methods:** The JBI methodology for umbrella reviews guided this study. Searches were conducted in databases aggregated by EBSCOhost, SCOPUS, and Web of Science, as well as relevant grey literature. Systematic reviews published in English, Portuguese, and Spanish from January 2018 to December 2023 were included. Two independent reviewers used a JBI critical appraisal tool and a specific data extraction instrument to synthesise findings.

**Findings:** A total of 29 studies met the inclusion criteria. Synthesised findings include: (1) the absence of nursing/midwifery interventions focused on breastfeeding protection; (2) five nursing/midwifery interventions aimed at breastfeeding promotion, with the primary intervention being prenatal education; and (3) twenty-four interventions of nurses/midwives on breastfeeding support, the most frequent being home visits, telephone technology and follow-up.

**Conclusion:** This umbrella review reveals limited involvement of nurses/midwives in breastfeeding protection, despite their expertise and potential influence on policy development to support breastfeeding. They are involved in breastfeeding promotion, but most of their intervention is focused on breastfeeding support. The diverse roles and settings of nursing and midwifery practice present challenges in evaluating intervention effectiveness. Further research specific to nursing and midwifery is needed to inform evidence-based practice and policy-making in breastfeeding care.

## Introduction

Breastfeeding rates are a significant concern for nurses and midwives involved in breastfeeding support worldwide. This concern raises important questions about the knowledge and skills required to effectively promote breastfeeding, underscoring the need for targeted interventions and decision-making abilities in breastfeeding protection, promotion, and support.

Systematic reviews (Haroon et al., 2013, Sinha et al., 2015, Balogun

et al., 2016, Dall'Oglio et al., 2020) and key reports (Force et al., 2016, World Health Organization 2021) affirm the effectiveness of breastfeeding interventions across various settings and perinatal periods. However, breastfeeding knowledge is inherently multidisciplinary, extensive, and often fragmented, complicating the assessment of existing evidence. Thus, there is value in synthesising this knowledge to delineate the scope of nursing and midwifery interventions in breastfeeding and to translate this evidence effectively into clinical practice. An umbrella review provides an aggregated summary of findings from

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systematic reviews, allowing for the evaluation of consistency or variation in outcomes, and is, therefore, suited to this study's objectives (Aromataris et al., 2024).

Nurses and midwives are in constant contact with pregnant, birthing, and postpartum women throughout the breastfeeding journey, highlighting the importance of accessible, high-quality evidence to enhance clinical practice. Consequently, this study seeks to explore nursing and midwifery interventions in breastfeeding protection, promotion, and support across hospital and community contexts, providing a summary of research syntheses. This umbrella review integrates evidence on nursing and midwifery breastfeeding interventions, summarising studies from the past six years and encapsulating research spanning the last three decades (Aromataris et al., 2024). By doing so, it offers a comprehensive analysis, supports the translation of research into clinical practice, identifies knowledge gaps, and outlines directions for future research in nursing and midwifery breastfeeding care.

The importance of this research lies in its contribution it makes to the breastfeeding literature. Through this umbrella review, it will be possible to find out which interventions are used in the clinical practice of nurses and midwives who work in breastfeeding. Additionally, by providing a synthesis of the available information, this review will contribute to the dissemination of research results and identify possible gaps in knowledge and the need for the future.

A preliminary search in PROSPERO, MEDLINE, The Cochrane Database of Systematic Reviews, and JBI Evidence Synthesis found no existing or ongoing umbrella review on this topic, underscoring the need for a comprehensive analysis of available data to inform clinical practice and research.

### Review question(s)

This umbrella review aims to synthesise nursing and midwifery interventions for the protection, promotion, and support of breastfeeding. Specifically, it seeks to answer the following question:

1. What interventions are implemented by nurses and midwives to protect, promote, and support breastfeeding?

### Methodology

This umbrella review was conducted in alignment with the Joanna Briggs Institute (JBI) methodology for umbrella reviews (Aromataris et al., 2024). The objectives, inclusion criteria, and methods were specified in an *a priori* protocol published in *The Practising Midwife* (Couto et al., 2023).

Deviations from the protocol

Some discrepancies between the *a priori* protocol (Couto et al., 2023) and the current review should be highlighted. First, the initial plan was to include studies published within five years, from 2018 to 2022. However, the need for an updated analysis led us to extend the data collection period to include studies published in 2023, effectively encompassing six years of literature. Second, initially, two research questions were planned. However, the additional reflection that the review process of this work required led to the elimination of the second question, as the first question completely answers the objective of this investigation. Still, it is important to clarify, that the characteristics of the interventions used by nurses and midwives to protect, promote, and support breastfeeding, will be presented to better understand of its breadth. Finally, adjustments were made to the data extraction tool as outlined in the *a priori* protocol (Couto et al., 2023). Specifically, extracted data now focus exclusively on identifying the author(s), date, country, title, aim, study design, number of included studies, participants, and outcomes.

### Research strategy

A comprehensive, three-step search strategy (Aromataris et al., 2024) was performed to identify systematic reviews relevant to this study's focus. As outlined in the published protocol (Couto et al., 2023), the search process comprised:

1. Initial Search: A preliminary, limited search was conducted in MEDLINE and CINAHL (via EBSCOhost) to identify keywords, text terms, and indexed terms (MeSH and DeCS descriptors) associated with nursing and midwifery interventions in breastfeeding.
2. Development of Full Search Strategy: Based on terms identified in the initial search, a comprehensive search strategy was formulated, incorporating all relevant keywords and indexed terms (see Appendix I for details). This strategy was customised for each database.
3. Comprehensive Database Search: A complete search was conducted across multiple databases to capture all relevant studies. Databases consulted included those accessible via EBSCOhost (OpenAIRE, CINAHL Complete, MEDLINE Complete, MEDLINE, Complementary Index, Academic Search Complete, Directory of Open Access Journals, Supplemental Index, ScienceDirect, OAlster, Gale Health and Wellness, RCAAP, MedicLatina, OpenDissertations, British Library EThoS, SwePub, RACO, TDX, SciELO, R2 Digital Library, Library, Information Science & Technology Abstracts, and Networked Digital Library of Theses & Dissertations), SCOPUS (including EMBASE, Scopus Database, and Cochrane Database), and Web of Science (Web of Science Core Collection, KCI – Korean Journal Database, SciELO Citation Index), including pertinent grey literature sources.

Two search rounds were conducted: the first on August 2, 2022, covering articles from January 1, 2018, and the second on July 30, 2024, to ensure updated results. The extended search period covered literature published up to December 31, 2023. Articles were limited to those in English, Portuguese, and Spanish.

Only secondary studies published between January 2018 and December 2023 were included, in accordance with *JBI Manual for Evidence Synthesis* (Aromataris et al., 2024), which support systematic reviews as summarising research from the preceding 30 years. Duplicate entries and studies without accessible full texts were excluded. Appendix II details the complete search strategy for all databases.

### Eligibility criteria

#### Inclusion

The PICOS/PICO<sup>7</sup> strategy was employed to establish specific inclusion criteria for the types of population/participants (P), intervention (I), comparison (C), outcome (O), context (Co), and study type (S) relevant to this umbrella review. The criteria are outlined as follows and resumed on Table 1.

**Participants:** This review included studies focusing on nurses and/or midwives, or teams comprising nurses and midwives, who are involved in the protection, promotion, and support of breastfeeding. These professionals could operate individually or within a multidisciplinary healthcare team (e.g., with medical doctors, nutritionists, psychologists), provided that their specific roles in the intervention were clearly identified.

Given the variability in professional titles and associated legislation across countries, this review adhered to internationally recognised definitions to ensure consistency:

**Nurse:** Following the International Council of Nurses (ICN) definition, a nurse is someone who has completed a programme of primary, generalised nursing education and is authorised by the appropriate regulatory authority to practice in their country. This education provides a foundation in behavioural, life, and nursing sciences, equipping nurses for general practice, leadership roles, and post-basic education in

**Table 1**  
Inclusion/exclusion criteria.

Inclusion / Exclusion Criteria	
<b>Inclusion</b>	<p><b>Participants</b> Nurses and/or midwives, or teams comprising nurses and midwives, who are involved in the protection, promotion, and support of breastfeeding, operating individually or within a multidisciplinary healthcare team, provided that their specific roles were clearly identified.</p> <p><b>Intervention/Phenomenon of interest</b> Nursing and midwifery interventions aimed at protecting, promoting, and supporting breastfeeding, as well as the types of interventions, their characteristics, and modes of implementation.</p> <p><b>Comparators</b> No restrictions were applied regarding the type of comparators.</p> <p><b>Outcomes</b> Related to the breastfeeding process and/or its protection, promotion, and support, including attitudes, behaviors, experiences, facilitators, and barriers; breastfeeding self-efficacy; changes in breastfeeding knowledge and capacity; perceptions of importance; care processes; economic impact; health outcomes; and relevant policies.</p> <p><b>Context</b> All breastfeeding care settings, encompassing diverse countries and sociocultural environments, without restriction to hospital or community-based settings.</p>
<b>Exclusion</b>	<p><b>Participants</b> Non-health professionals or other health professionals than nurses or midwives. Unhealthy populations (women and/or children), adolescent mothers or twin populations.</p> <p><b>Intervention/Phenomenon of interest</b> Interventions related to infant feeding methods other than breastfeeding.</p>

specialised or advanced nursing fields (*International Council of Nurses. Nursing Definitions 1987*).

Midwife: The term midwife aligns with the International Confederation of Midwives (ICM) definition, which describes a midwife as a person who has completed a midwifery education programme based on the ICM Essential Competencies for Basic Midwifery Practice and the ICM Global Standards for Midwifery Education. A midwife must possess the qualifications required to register or be legally licensed to practice midwifery and use the title midwife in their country. Furthermore, they must demonstrate competency in midwifery practice (*International Confederation of Midwives. International Definition of the Midwife 2017*).

**Intervention / Phenomenon of interest:** This umbrella review focuses on the breastfeeding process, defined as the act of feeding an infant with milk directly from the breast, a behaviour influenced by family, friends, and healthcare professionals (*Sardo, 2018*). This review includes studies examining the concept of breastfeeding and nursing and midwifery interventions aimed at protecting, promoting, and supporting breastfeeding, as well as the types of interventions, their characteristics, and modes of implementation.

The identification of these interventions is based on the protect, promote, and support framework (*World Health Organization 1981, Organization, 2003*) established by the World Health Organization (WHO), defined as follows:

*Protecting breastfeeding means developing and monitoring policies of maternity entitlements, supervising processed complementary foods, and ensuring the application of the International Code of Breast-Milk Substitutes. Promotion measures include all those interventions aimed at ensuring the dissemination of accurate and complete information about optimal Infant and Young Child Feeding Practices. Finally, healthcare systems should support breastfeeding by providing skilled counseling to mothers, training for health professionals, guaranteeing breastfeeding-supportive hospital routines, and developing peer-to-peer support networks in the community (Dall'Oglio et al., 2020).*

**Comparators:** No restrictions were applied regarding the type of comparators.

**Outcomes:** This review considered studies that assessed a broad range of outcomes related to the breastfeeding process and/or its

protection, promotion, and support. Outcomes included attitudes, behaviors, experiences, facilitators, and barriers; breastfeeding self-efficacy; changes in breastfeeding knowledge and capacity; perceptions of importance; care processes; economic impact; health outcomes; and relevant policies. Additionally, breastfeeding indicators defined by the WHO (*World Health Organization 2021*) were included, such as: breastfeeding initiation; early initiation of breastfeeding; exclusive breastfeeding within the first 48 h postpartum; exclusive breastfeeding up to six months; mixed feeding under six months; and continued breastfeeding at 12 to 23 months.

**Context:** This umbrella review included studies across all settings of breastfeeding care, encompassing diverse countries and sociocultural environments, without restriction to hospital or community-based settings.

#### Exclusion

**Participants:** Studies focusing on interventions conducted exclusively by health professionals other than nurses or midwives, or by non-health professionals, were excluded. Studies involving unhealthy populations (women and/or children) were not considered. Due to their specific characteristics, adolescent mothers and twin populations were also excluded from this review.

**Intervention/Phenomenon of Interest:** All studies exploring interventions related to infant feeding methods other than breastfeeding were excluded.

#### Study selection

This umbrella review considered only secondary studies, defined as any literature review that synthesizes evidence from empirical research, including primary studies of any research design. This encompassed systematic or scoping reviews - quantitative, with or without meta-analysis, and/or qualitative, with or without meta-synthesis or meta-summarization.

Following the search, all identified records were compiled and uploaded into EndNote20® (Clarivate Analytics, Philadelphia, United States of America) (*Team, 2013*) and Rayyan (Qatar Computing Research Institute, Doha, Qatar) (*Ouzzani et al., 2016*), and duplicate were removed.

At the outset, the research team met multiple times to ensure that all reviewers clearly understood the objectives, inclusion and exclusion criteria, and the overall methodology.

Two independent reviewers screened titles and abstracts to assess eligibility based on the predefined inclusion and exclusion criteria. Prior to the screening process, the team tested a random sample of titles and abstracts to calibrate their assessments.

Studies meeting the inclusion criteria were retrieved in full text for further evaluation. Any disagreements between reviewers at each stage of the selection process were resolved by consensus or by consulting a third reviewer. When necessary, primary studies were consulted to clarify data or obtain missing information.

#### Quality appraisal

A critical appraisal of the quality of each included study was conducted using the Joanna Briggs Institute's Critical Appraisal Checklist for Systematic Reviews and Research Syntheses (*Aromataris et al., 2024*). This tool assesses the validity of the methods used in each review, including inclusion criteria, search methods, and strategies to reduce bias.

Before the assessment, the two independent reviewers met to agree on the criteria for assigning a "met," "not met," "unclear," or "not applicable" response for each of the 11 items in the tool. One point was awarded for each question answered positively, with a maximum possible score of 11. Studies scoring 0 - 6 were considered "low quality," those scoring 7 - 8 "moderate quality," and those scoring 9 - 11 "high

quality". Disagreements were resolved by consensus; in some situations, it was necessary to consult a third reviewer.

This umbrella review did not employ a threshold for inclusion based on quality scores. Instead, the critical appraisal and quality scores were used to compare the quality among included studies. All studies were included, but results from studies of relatively lower quality were interpreted with caution. The quality assessment helped explain heterogeneity in findings and understand the limitations of the literature, informing recommendations for future research.

### Data synthesis

Data were independently extracted from the included articles by two reviewers using a data extraction tool aligned with the objectives and questions of this review. The extraction tool was designed according to the JBI template for source of evidence details, characteristics, and results extraction instrument (Aromataris et al., 2024). It was amended and revised as necessary during data extraction from the included studies, specifying details such as author(s), date, country, title, aim, study design, number of included studies, participants involved, and outcomes. To maximize consistency, the reviewers previously tested the use of this tool (Aromataris et al., 2024).

The categorization process involved the analysis of final included documents using the ATLAS.ti (World Health Organization 2023) tool. Initially, findings were extracted and assembled, including data such as themes related to the breastfeeding process and nursing and midwifery interventions related to its protection, promotion, and support - considered as the domains. Subsequently, categories were developed from the findings based on similarity in meaning. Finally, these categories were synthesized to produce a comprehensive set of synthesized findings.

All discrepancies between the two reviewers were resolved by consensus, and when necessary, a third reviewer was consulted to resolve uncertainties regarding the inclusion of specific studies. In one instance, it was necessary to contact the authors of an included study to clarify the participation of nurses or midwives in the intervention team described. The final synthesized findings were agreed upon by all authors.

## Results

### Study selection and quality assessment

The database searches identified a total of 821 publications. After removing 289 duplicates, 532 records remained for title and abstract screening, which resulted in the exclusion of 453 records. Full-text assessments were conducted on 79 studies, leading to the exclusion of an additional 50 records. Appendix III provides a list of studies deemed ineligible after full-text review and the reasons for their exclusion.

The majority of studies were excluded for the following reasons: improper intervention, not aimed at breastfeeding protection, promotion, or support (n=27); ineligible study type, as they were not systematic literature reviews (n=14); inaccurate participants, where the role of nurses or midwives in the intervention was not explicitly identified (n=8); and one study was excluded due to being in an ineligible language (n=1).

A total of 29 studies were included in this umbrella review (Guille et al., 2020, D'Haenens et al., 2019, Oriá et al., 2018, Wagg et al., 2018, Seddighi et al., 2022, Rodríguez-Gallego et al., 2021, Düzgün and Özer, 2020, Araya and Lopez-Alegria, 2022, Nuampa and Payakkarung, 2021, Kim et al., 2018, Wong et al., 2021, Sinclair et al., 2018, Orchard and Nicholls, 2020, Earle and Hadley, 2018, Yonemoto et al., 2021, Hadisyatmana et al., 2020, Santos et al., 2022, Brodrribb et al., 2019, Karaçam and Saglik, 2018, Zhao et al., 2023, Chua et al., 2023, Kahraman and Havlioglu, 2023, Pezley et al., 2022, Rojas-García et al., 2023, Khatib et al., 2023, Lira et al., 2023, Gavine et al., 2021, Moura et al.,

2023, Chang et al., 2022). The PRISMA flow diagram (Moher et al., 2009), represented in Fig. 1, illustrates the study selection process.

The methodological quality of the remaining 29 papers was assessed using the Joanna Briggs Institute's (JBI) Critical Appraisal Checklist for Systematic Reviews and Research Syntheses (Aromataris et al., 2024). According to the defined scoring criteria, only one study was classified as low quality (scoring 6 out of 11), three studies were considered moderate quality (two scoring 7/11 and one scoring 8/11), and the remaining 25 studies were classified as high quality (six scoring 11/11, thirteen scoring 10/11, and six scoring 9/11). Many papers did not address the likelihood of publication bias and did not clearly and explicitly state the review question (Table 2).

### Characteristics of included studies

The systematic reviews that identified study designs, breastfeeding protection, promotion, and support interventions involving nurses and/or midwives, along with other relevant details, were analyzed. The extracted data, mapped using the data extraction instrument, are presented in Appendix IV, specifying the characteristics of the included studies.

### Year of publication, country of origin, and number of studies per country

All included studies were published between 2018 and 2023. The highest number of publications was in 2023 (n=7) (Zhao et al., 2023, Chua et al., 2023, Kahraman and Havlioglu, 2023, Rojas-García et al., 2023, Khatib et al., 2023, Lira et al., 2023, Moura et al., 2023), followed by 2018 (n=6) (Oriá et al., 2018, Wagg et al., 2018, Kim et al., 2018, Sinclair et al., 2018, Earle and Hadley, 2018, Karaçam and Saglik, 2018), 2021 (n=5) (Rodríguez-Gallego et al., 2021, Nuampa and Payakkarung, 2021, Wong et al., 2021, Yonemoto et al., 2021, Gavine et al., 2021), 2022 (n=5) (Seddighi et al., 2022, Araya and Lopez-Alegria, 2022, Santos et al., 2022, Pezley et al., 2022, Chang et al., 2022), 2020 (n=4) (Guille et al., 2020, Düzgün and Özer, 2020, Orchard and Nicholls, 2020, Hadisyatmana et al., 2020) and 2019 (n=2) (D'Haenens et al., 2019, Brodrribb et al., 2019).

The included studies were conducted across 17 countries. The majority were from the United Kingdom (n=7) (Wagg et al., 2018, Sinclair et al., 2018, Orchard and Nicholls, 2020, Earle and Hadley, 2018, Rojas-García et al., 2023, Gavine et al., 2021, Chang et al., 2022), followed by Brazil (n=4) (Oriá et al., 2018, Santos et al., 2022, Lira et al., 2023, Moura et al., 2023), Turkey (n=3) (Düzgün and Özer, 2020, Karaçam and Saglik, 2018, Kahraman and Havlioglu, 2023), and China (n=2) (Wong et al., 2021, Zhao et al., 2023). Single studies were conducted in Northern Ireland (Guille et al., 2020), Belgium (D'Haenens et al., 2019), Iran (Seddighi et al., 2022), Spain (Rodríguez-Gallego et al., 2021), Chile (Araya and Lopez-Alegria, 2022), Thailand (Nuampa and Payakkarung, 2021), South Korea (Kim et al., 2018), Japan (Yonemoto et al., 2021), Indonesia (Hadisyatmana et al., 2020), Australia (Brodrribb et al., 2019), Singapore (Chua et al., 2023), the United States of América (Pezley et al., 2022), and India (Khatib et al., 2023).

### Study design

Almost all of the included studies were published as systematic reviews (Guille et al., 2020, D'Haenens et al., 2019, Wagg et al., 2018, Seddighi et al., 2022, Rodríguez-Gallego et al., 2021, Araya and Lopez-Alegria, 2022, Nuampa and Payakkarung, 2021, Sinclair et al., 2018, Orchard and Nicholls, 2020, Earle and Hadley, 2018, Yonemoto et al., 2021, Brodrribb et al., 2019, Karaçam and Saglik, 2018, Chua et al., 2023, Kahraman and Havlioglu, 2023, Pezley et al., 2022, Rojas-García et al., 2023, Khatib et al., 2023, Lira et al., 2023, Chang et al., 2022), with six studies reporting meta-analyses (Düzgün and Özer, 2020, Wong et al., 2021, Zhao et al., 2023, Gavine et al., 2021) and two studies being systematic reviews including only randomized clinical trials results (Oriá et al., 2018, Kim et al., 2018). Three of the included studies were

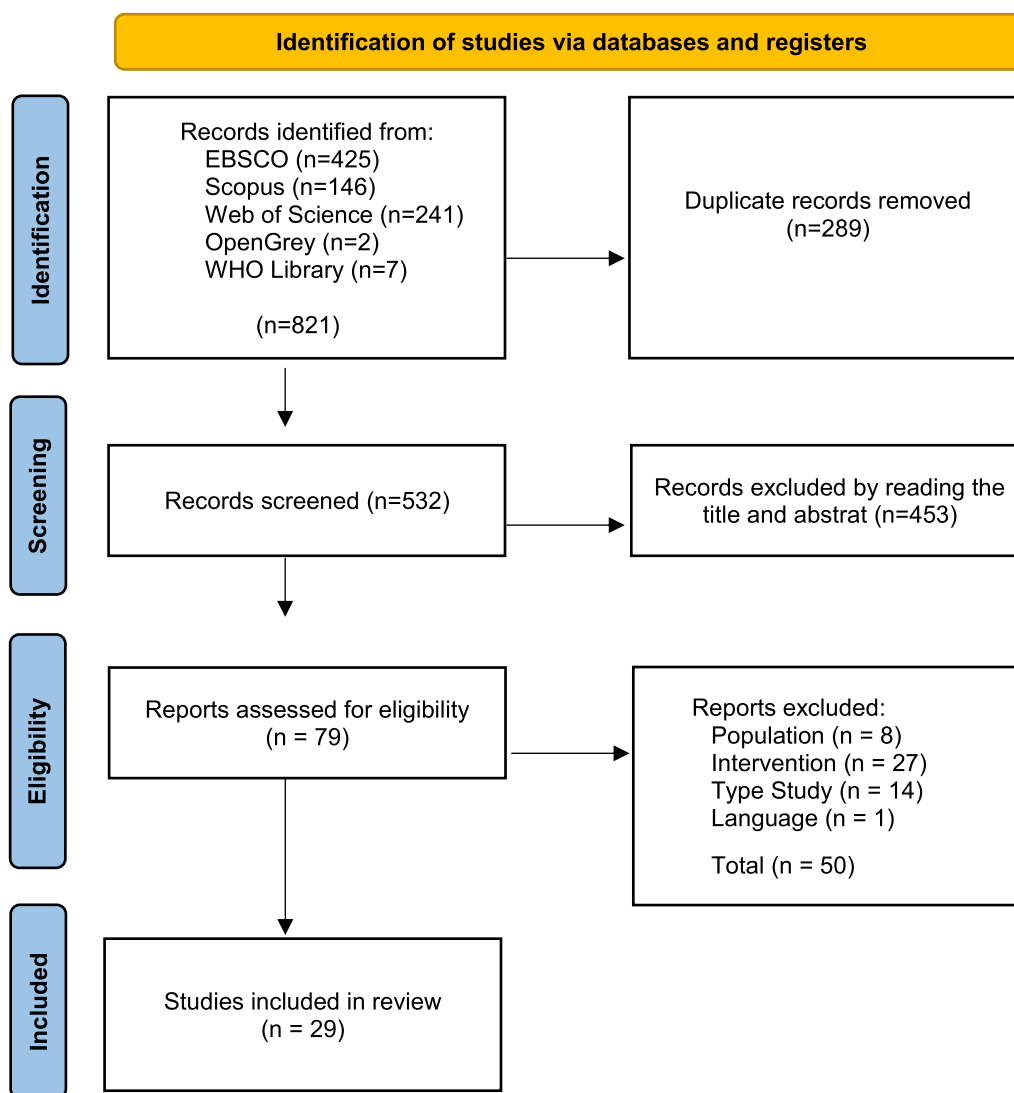


Fig. 1. Search results and study selection and inclusion process (MJ et al., 2021).

scoping reviews (Hadisyatmana et al., 2020, Santos et al., 2022, Moura et al., 2023).

#### Study sample

Data were extracted exclusively for pregnant and postpartum women, couples, and newborns, all relating to a healthy population. Only data relating to the participation of nurses and midwives were also extracted. Sample sizes varied considerably, from about 489 to 201,767 participants in systematic reviews; from about 554 to 11,470 participants in studies with meta-analyses and RCT results; and from about 4202 to 688,294 participants in scoping reviews.

#### Review findings

To address the review question - What interventions are implemented by nurses and midwives to protect, promote, and support breastfeeding? - the results are organized into three categories: 1) Breastfeeding protection interventions; 2) Breastfeeding promotion interventions; 3) Breastfeeding support interventions. Table 3 represents the data summary template for answering this question.

#### Breastfeeding protection interventions

No references were found in the literature regarding interventions carried out by nurses or midwives specifically aimed at protecting

breastfeeding.

#### Breastfeeding promotion interventions

In the context of breastfeeding promotion, the literature identifies five types of interventions conducted by nurses and midwives: Counselling (Seddighi et al., 2022), Peer Support (Sinclair et al., 2018), Prenatal Breastfeeding Education (D'Haenens et al., 2019, Seddighi et al., 2022, Kim et al., 2018, Wong et al., 2021, Karaçam and Saglik, 2018, Moura et al., 2023), Prenatal Multicomponent Intervention (Araya and Lopez-Alegria, 2022, Khatib et al., 2023) and Telephone Support (Seddighi et al., 2022).

#### Breastfeeding support interventions

Regarding breastfeeding support, the literature references 24 types of interventions performed by nurses and midwives: BFHI (Baby-Friendly Hospital Initiative) Collaboration (Kim et al., 2018), Breastfeeding Coaching (D'Haenens et al., 2019, Wong et al., 2021), Breastfeeding Emotional Support (Kim et al., 2018), Caseload Care (D'Haenens et al., 2019), Co-parenting Promotion (Zhao et al., 2023), Combined Counselling Intervention (Wong et al., 2021, Brodribb et al., 2019), Combined Educational Intervention (Kim et al., 2018, Wong et al., 2021), Community-based Postnatal Care (Yonemoto et al., 2021, Brodribb et al., 2019, Pezley et al., 2022), Counseling (Guille et al., 2020, Wong et al., 2021, Karaçam and Saglik, 2018, Lira et al., 2023, Moura

**Table 2**  
Critical appraisal of the quality included results.

Critical appraisal results for included studies												
Author/Year	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Total
Guille et al. 2020 <sup>1</sup>	+	+	+	+	+	+	?	+	+	+	+	10/11
D'haenens et al. 2019 <sup>2</sup>	?	?	+	+	+	+	?	+	-	+	+	7/11
Oriá et al. 2018 <sup>3</sup>	+	+	+	+	+	+	+	+	?	+	+	10/11
Wagg et al. 2018 <sup>4</sup>	?	+	+	+	+	?	?	+	-	+	+	7/11
Seddighi et al. 2022 <sup>5</sup>	?	+	+	+	+	+	+	+	?	+	+	9/11
Rodríguez-Gallego et al. 2021 <sup>6</sup>	+	+	+	+	+	+	+	+	+	+	+	11/11
Duzgun and Ozer 2020 <sup>7</sup>	+	+	+	+	+	+	+	+	+	+	+	11/11
Araya and López-Alegria 2022 <sup>8</sup>	+	+	+	+	+	?	+	+	?	+	+	9/11
Nuampa and Payakkaraung 2021 <sup>9</sup>	+	+	+	+	+	+	+	+	-	+	+	10/11
Kim et al. 2018 <sup>10</sup>	?	+	+	+	+	+	+	+	+	+	+	10/11
Wong et al. 2021 <sup>11</sup>	?	+	+	+	+	+	+	+	+	+	+	10/11
Sinclair et al. 2018 <sup>12</sup>	+	+	+	+	+	+	+	+	+	+	+	11/11
Orchard and Nicholls 2020 <sup>13</sup>	+	+	+	+	+	+	+	+	+	+	+	11/11
Earle and Hadley 2018 <sup>14</sup>	?	+	+	+	+	+	+	+	?	+	+	9/11
Yonemoto et al. 2021 <sup>15</sup>	+	+	+	+	+	+	+	+	+	+	+	11/11
Hadisuyatmana et al. 2020 <sup>16</sup>	+	+	+	+	+	+	+	+	-	+	+	10/11
Santos et al. 2022 <sup>17</sup>	+	+	+	+	?	?	?	+	-	+	?	6/11
Brodribb et al. 2019 <sup>18</sup>	?	+	+	+	+	+	+	+	+	+	+	10/11
Karaçam and Saglik 2018 <sup>19</sup>	+	?	+	+	+	+	+	+	+	+	+	10/11
Zhao et al. 2023 <sup>20</sup>	?	+	+	+	+	+	+	+	+	+	+	10/11
Chua et al. 2023 <sup>21</sup>	?	+	+	+	+	+	+	+	-	+	+	9/11
Kahraman and Havlioglu 2023 <sup>22</sup>	+	+	+	+	+	+	+	+	?	+	+	10/11
Pezley et al. 2022 <sup>23</sup>	?	+	+	+	+	+	+	+	+	+	+	10/11
Rojas-Garcia et al. 2023 <sup>24</sup>	?	+	+	+	+	+	+	+	?	+	+	9/11
Khatib et al. 2023 <sup>25</sup>	?	+	+	+	+	+	+	+	?	+	+	9/11
Lira et al. 2023 <sup>26</sup>	+	+	+	+	+	+	+	+	+	+	+	11/11
Gavine et al. 2021 <sup>27</sup>	?	+	+	+	+	+	+	+	+	+	+	11/11
Moura et al. 2023 <sup>28</sup>	+	+	+	+	?	+	?	+	-	+	+	8/11
Chang et al. 2022 <sup>29</sup>	+	+	+	+	+	+	+	+	?	+	+	10/11

+ Yes; - No; ? Unclear.

**Table 3**  
Data analysis results.

Data analysis results		
Domain	Category Nurse/ Midwife Intervention	Authors
<b>Breastfeeding Protection</b> <b>Breastfeeding Promotion</b>	—	—
	Counselling	(Seddighi et al., 2022)
	Peer Support	(Sinclair et al., 2018)
	Prenatal Breastfeeding Education	(D’Haenens et al., 2019, Seddighi et al., 2022, Kim et al., 2018, Wong et al., 2021, Karaçam and Saglik, 2018, Moura et al., 2023)
	Prenatal Multicomponent Intervention	(Araya and Lopez-Alegria, 2022, Khatib et al., 2023)
	Telephone Support	(Seddighi et al., 2022)
<b>Breastfeeding Support</b>	BFHI (Baby-Friendly Hospital Initiative)	(Kim et al., 2018)
	Breastfeeding Coaching	(D’Haenens et al., 2019, Wong et al., 2021)
	Breastfeeding Emotional Support	(Kim et al., 2018)
	Caseload Care	(D’Haenens et al., 2019)
	Co-parenting Promotion	(Zhao et al., 2023)
	Combined Counselling Intervention	(Wong et al., 2021, Brodribb et al., 2019)
	Combined Educational Intervention	(Kim et al., 2018, Wong et al., 2021)
	Community-based Postnatal Care	(Yonemoto et al., 2021, Brodribb et al., 2019, Pezley et al., 2022)
	Counseling	(Guille et al., 2020, Wong et al., 2021, Karaçam and Saglik, 2018, Lira et al., 2023, Moura et al., 2023)
	Follow-up	(D’Haenens et al., 2019, Yonemoto et al., 2021, Brodribb et al., 2019, Pezley et al., 2022, Lira et al., 2023)
	Home Visit	(D’Haenens et al., 2019, Wong et al., 2021, Yonemoto et al., 2021, Brodribb et al., 2019, Karaçam and Saglik, 2018, Rojas-García et al., 2023, Lira et al., 2023)
	Massage Techniques	(Nuampa and Payakkaraung, 2021)
	Men’s/fathers Support	(Earle and Hadley, 2018)
	Midwifery Support in a Prison Context	(Santos et al., 2022)
	Midwifery-led Care	(D’Haenens et al., 2019)
Multifaceted Technology Breastfeeding Support	(Wagg et al., 2018)	
Musicotherapy	(Düzgün and Özer, 2020)	
Peer Support	(Orchard and Nicholls, 2020, Gavine et al., 2021, Chang et al., 2022)	
Postnatal Breastfeeding Education	(Kim et al., 2018)	

**Table 3 (continued)**

Data analysis results		
Domain	Category Nurse/ Midwife Intervention	Authors
	Postnatal Multicomponent Intervention	(Hadisyatmana et al., 2020, Pezley et al., 2022)
	Self-efficacy Promotion	(Wong et al., 2021, Lira et al., 2023)
	Support Groups	(Rodríguez-Gallego et al., 2021)
	Telephone Technology	(Oriá et al., 2018, Araya and Lopez-Alegria, 2022, Wong et al., 2021, Yonemoto et al., 2021, Chua et al., 2023, Gavine et al., 2021)
	Video Conferencing Support	(Wagg et al., 2018, Chua et al., 2023, Gavine et al., 2021)

et al., 2023), Follow-up (D’Haenens et al., 2019, Yonemoto et al., 2021, Brodribb et al., 2019, Pezley et al., 2022, Lira et al., 2023), Home Visit (D’Haenens et al., 2019, Wong et al., 2021, Yonemoto et al., 2021, Brodribb et al., 2019, Karaçam and Saglik, 2018, Rojas-García et al., 2023, Lira et al., 2023), Massage Techniques (Nuampa and Payakkaraung, 2021), Men’s/fathers Support (Earle and Hadley, 2018), Midwifery Support in a Prison Context (Santos et al., 2022), Midwifery-led Care (D’Haenens et al., 2019), Multifaceted Technology Breastfeeding Support (Wagg et al., 2018), Musicotherapy (Düzgün and Özer, 2020), Peer Support (Orchard and Nicholls, 2020, Gavine et al., 2021, Chang et al., 2022), Postnatal Breastfeeding Education (Kim et al., 2018), Postnatal Multicomponent Intervention (Hadisyatmana et al., 2020, Pezley et al., 2022), Self-efficacy Promotion (Wong et al., 2021, Lira et al., 2023), Support Groups (Rodríguez-Gallego et al., 2021), Telephone Technology (Oriá et al., 2018, Araya and Lopez-Alegria, 2022, Wong et al., 2021, Yonemoto et al., 2021, Chua et al., 2023, Gavine et al., 2021), Video Conferencing Support (Wagg et al., 2018, Chua et al., 2023, Gavine et al., 2021).

The review findings also included the characteristics of the interventions used by nurses and midwives to protect, promote, and support breastfeeding (e.g., type of intervention, theoretical foundation, individual and/or combined activities, duration, frequency, and number of sessions), as detailed in Appendix IV, which reports various specificities and concepts related to these interventions.

**Discussion**

This umbrella review aimed to synthesize the interventions conducted by nurses and midwives in protecting, promoting, and supporting breastfeeding. A total of 29 systematic studies were included, encompassing research with both quantitative and qualitative evidence. Various interventions implemented by nurses and midwives were identified, with most falling under the category of breastfeeding support.

The analysis highlighted that nurses and midwives play a crucial role in breastfeeding care, with their involvement differing across the included studies. The most common interventions were Education, Home Visits, Telephone Technology, and Follow-Up. These interventions were instrumental in enhancing breastfeeding practices and were employed with varying frequencies and modalities across different healthcare settings.

The reviewed studies demonstrated the implementation of multifaceted interventions, which were designed with diverse theoretical frameworks and practical components. These included single activities and combinations of strategies, and their duration, frequency, and number of sessions varied significantly. Such diversity in the characteristics and application of the interventions underscores the

adaptability and resourcefulness of nurses and midwives in addressing breastfeeding needs.

Measuring nursing and midwifery practice presents inherent challenges due to the multifaceted roles nurses and midwives play across diverse clinical settings and contexts, often working within multidisciplinary teams. Additionally, breastfeeding knowledge is inherently comprehensive and multidisciplinary, dispersed across various research focuses, with limited evidence specifically addressing nursing and midwifery practices - highlighting a significant research gap. This umbrella review of existing systematic reviews has identified a lack of comprehensive literature on nurse and midwife interventions for breastfeeding protection, promotion, and support, while providing an overview of current practices associated with breastfeeding care. However, further systematic reviews are necessary to rigorously assess the effectiveness of these interventions.

Given the critical importance of breastfeeding for the healthy development of children and its long-term positive effects, the WHO recommends initiating breastfeeding within the first hour of life and continuing it until at least two years of age (World Health Organization 2018). Over the past decades, the WHO has made substantial efforts to protect, promote, and support breastfeeding globally. Despite these initiatives, current global breastfeeding rates remain below the targets set by the WHO, highlighting the pressing need for enhanced professional support to promote breastfeeding.

Nurses and midwives, although part of a broader multidisciplinary approach to maternal and child health, have consistently prioritized breastfeeding care. They monitor and support breastfeeding throughout pregnancy, childbirth, and the postpartum period, often being available 24 h a day. While the literature mentions the role of nursing and midwifery in breastfeeding care, the documentation appears fragmented and insufficiently detailed. This points to the need for more structured, evidence-based studies focusing on nursing and midwifery contributions to breastfeeding, ensuring their interventions are effectively catalogued and assessed for best practice implementation.

#### *Breastfeeding protection intervention*

In the context of breastfeeding protection interventions, no references were found in the literature that explicitly detail the involvement of nurses and midwives. Breastfeeding protection encompasses activities such as the development of maternity entitlement policies, decision-making, and supervisory roles in breastfeeding management to strengthen this practice. Given that the primary focus of nursing and midwifery is direct patient care, coupled with often limited human resources, the minimal involvement of these professionals in political and policy-making activities is understandable. This limited engagement is reflected in the observed weak intervention in breastfeeding protection at a policy level. It suggests that nurses and midwives may have minimal participation in decision-making processes regarding breastfeeding policies. This is paradoxical, as these professionals are heavily involved in the entire breastfeeding process and possess substantial practical experience that could be invaluable for shaping effective breastfeeding policies and strategies.

This observation highlights a significant gap in the literature - understanding the underlying reasons for the limited participation of nurses and midwives in developing breastfeeding policies and protection initiatives. Addressing this gap is crucial, as leveraging their first-hand experience and clinical insights could play a pivotal role in advocating for and creating effective policies to support successful breastfeeding practices.

#### *Breastfeeding promotion intervention*

The included literature provided 20 references to interventions by nurses and midwives in the promotion of breastfeeding. Various types of interventions developed and implemented by these professionals have

been documented, including: Counselling (Seddighi et al., 2022), Peer Support (Sinclair et al., 2018), Prenatal Breastfeeding Education (D'Haenens et al., 2019, Seddighi et al., 2022, Kim et al., 2018, Wong et al., 2021, Karaçam and Saglik, 2018, Moura et al., 2023), Prenatal Multicomponent Intervention (Araya and Lopez-Alegria, 2022, Khatib et al., 2023) and Telephone Support (Seddighi et al., 2022). These documented interventions indicate the proactive role nurses and midwives play in breastfeeding promotion, showcasing their commitment to equipping mothers with the knowledge and support necessary for successful breastfeeding initiation and maintenance.

#### *Prenatal breastfeeding education*

The majority (n=14) of nurse and midwife-led breastfeeding promotion interventions focus on Prenatal Breastfeeding Education type (D'Haenens et al., 2019, Seddighi et al., 2022, Kim et al., 2018, Wong et al., 2021, Karaçam and Saglik, 2018, Moura et al., 2023). This type of intervention aims to equip expectant mothers with the necessary knowledge to facilitate breastfeeding. These interventions can be conducted using different approaches, primarily categorized into group-based and individual education methods.

**Group-Based Approaches:** Several studies report group educational sessions as an effective method. Examples include: Centering Pregnancy - Prenatal care delivered in a group format (D'Haenens et al., 2019); Group Educational Sessions - Sessions that focus on sharing knowledge and skills related to breastfeeding (Seddighi et al., 2022, Kim et al., 2018); Specific Breastfeeding Self-Efficacy Interventions - Conducted in group settings, such as one-hour weekly sessions at 35 - 37 weeks of gestation (Wong et al., 2021); Breastfeeding Workshops - four-week sessions that cover breastfeeding knowledge and self-efficacy from 34 - 37 weeks of gestation (Wong et al., 2021).

Only one study mentioned a single group educational intervention, given once during the prenatal period (Karaçam and Saglik, 2018).

**Individual Approaches:** Interventions can also be personalized, including: Explicit and Indirect Teaching by Midwives - Utilizing visual aids and detailed instruction (Seddighi et al., 2022); Educational Packages - with or without midwife instruction (Seddighi et al., 2022); and One-to-One Education Sessions - these sessions typically last 20 to 30 mins and are provided from 35 weeks of gestation (Wong et al., 2021).

The literature references the use of diverse didactic material to support nurse/midwives' breastfeeding education, such as: Information Booklets with Breastfeeding Images (Wong et al., 2021), Visual Aids (Seddighi et al., 2022) and Video/filming<sup>45</sup>.

The literature underscores the significant positive impact of face-to-face education on improving breastfeeding outcomes (Seddighi et al., 2022). This highlights the importance of integrating direct, personal contact into nursing and midwifery educational interventions to maximize their effectiveness.

Certain studies emphasize the particular importance of targeting educational interventions at primiparous women (Wong et al., 2021), who often require more support to build breastfeeding self-efficacy. This targeted approach can be seen as both a limitation and an effective solution for prioritizing resources, especially when human resource constraints prevent the broad reach of educational programs.

There are inconsistencies in the literature regarding the specifics of the interventions, their modes of implementation, and the detailed content of the educational programs. This indicates the need for more research to refine the specificity and assess the effectiveness of these interventions in nursing and midwifery practice.

The literature frequently points to a positive correlation between prenatal class attendance and successful breastfeeding outcomes (D'Haenens et al., 2019, Seddighi et al., 2022, Wong et al., 2021), highlighting the importance of prenatal care as an essential factor for successful breastfeeding.

One study (D'Haenens et al., 2019) found that the continuity of care since pregnancy had a statistically significant effect on breastfeeding initiation, hospitalization practices, and discharge outcomes. Although

differences in breastfeeding duration were not always significant, results often showed that women receiving continuity of care were more likely to be breastfeeding at one month postnatal. This underscores that continuous management, relational and informational care starting in the antenatal period have significant implications for postnatal breastfeeding success. This perspective is supported by other research advocating for breastfeeding counseling that incorporates client-centered techniques to establish prenatal rapport and positively influence breastfeeding decisions and rates (Efrat et al., 2015). Additionally, approaches that emphasize the relationship between breastfeeding attitude and behavior highlight the benefits of prenatal peer counseling in shaping positive breastfeeding attitudes and choices (Srinivas et al., 2015).

The included literature (Wong et al., 2021) further supports the idea that continuous support throughout the antenatal period, followed by postnatal education and telephone follow-up, can increase the rate of exclusive breastfeeding and enhance breastfeeding self-efficacy.

#### *Peer support and prenatal multicomponent intervention*

The literature also associates nurse and midwife-led breastfeeding promotion interventions with Peer Support and Prenatal Multicomponent Interventions.

Peer support interventions (Sinclair et al., 2018) (n=2) consist of creating networks where mothers who have breastfed share their experiences and knowledge with mothers who intend to breastfeed. The role of nurses and midwives in these interventions includes organizing and facilitating group discussions, mediating the exchange of information, and fostering an environment of shared learning. Specific examples from the included literature include: Antenatal Groups and/or One-to-One Breastfeeding Peer Support (Sinclair et al., 2018); Attending Groups to offer support and demonstrate breastfeeding skills (Sinclair et al., 2018), nurses and midwives participate to offer guidance and help mothers observe and learn breastfeeding practices.

These interventions can take place in group settings or individually, through in-person interactions or virtual meetings, such as private groups on social media platforms like WhatsApp.

Evidence from the literature points to the efficacy of Prenatal Multicomponent Intervention<sup>25,42</sup> (n=2), which include a combination of motivational, educational, and supportive elements. Examples include: Enhanced Motivational Intervention (Araya and Lopez-Alegria, 2022), and Community-Based Intervention Packages (Khatib et al., 2023), which are designed to improve breastfeeding practices during the antenatal period by incorporating educational and support services into community settings.

#### *Counseling and telephone support*

The included studies also highlighted Counseling (Seddighi et al., 2022) (n=1) and Telephone Support (Seddighi et al., 2022) (n=1) as interventions used by nurses and midwives for breastfeeding promotion.

Prenatal individual counselling was identified as an intervention aimed at providing expectant mothers with personalized guidance and support regarding Breastfeeding (Seddighi et al., 2022). This approach emphasizes direct communication between nurses/midwives and mothers to address concerns, enhance knowledge, and build confidence in breastfeeding practices.

Telephone support was noted as a component of prenatal breastfeeding education (Seddighi et al., 2022). This method allows continuous engagement between healthcare professionals and mothers, offering timely advice, emotional support, and follow-up, ensuring that mothers feel supported even beyond face-to-face encounters.

There is, however, a noticeable lack of consistency and detailed information in the literature regarding these types of interventions. The documentation of the specific roles nurses and midwives play in counselling and telephone support, as well as the effectiveness of these interventions, is limited. This inconsistency points to the need for more comprehensive research to better document and characterize the

involvement and impact of nurses and midwives in breastfeeding promotion at these levels. Future studies should aim to provide clearer insights into the structure, application, and outcomes of counselling and telephone support to strengthen the evidence base for these practices.

#### *Breastfeeding support intervention*

The literature reviewed makes 111 references to nurse and midwife interventions on breastfeeding support. Various types of interventions developed and implemented by these professionals were documented, illustrating the diversity and coverage of support strategies available. The types of breastfeeding support interventions identified include: BFHI (Baby-Friendly Hospital Initiative) Collaboration (Kim et al., 2018), Breastfeeding Coaching (D'Haenens et al., 2019, Wong et al., 2021), Breastfeeding Emotional Support (Kim et al., 2018), Caseload Care (D'Haenens et al., 2019), Co-parenting Promotion (Zhao et al., 2023), Combined Counselling Intervention (Wong et al., 2021, Brodribb et al., 2019), Combined Educational Intervention (Kim et al., 2018, Wong et al., 2021), Community-based Postnatal Care (Yonemoto et al., 2021, Brodribb et al., 2019, Pezley et al., 2022), Counseling (Guille et al., 2020, Wong et al., 2021, Karaçam and Saglik, 2018, Lira et al., 2023, Moura et al., 2023), Follow-up (D'Haenens et al., 2019, Yonemoto et al., 2021, Brodribb et al., 2019, Pezley et al., 2022, Lira et al., 2023), Home Visit (D'Haenens et al., 2019, Wong et al., 2021, Yonemoto et al., 2021, Brodribb et al., 2019, Karaçam and Saglik, 2018, Rojas-García et al., 2023, Lira et al., 2023), Massage Techniques (Nuampa and Payakkaraung, 2021), Men's/fathers Support (Earle and Hadley, 2018), Midwifery Support in a Prison Context (Santos et al., 2022), Midwifery-led Care (D'Haenens et al., 2019), Multifaceted Technology Breastfeeding Support (Wagg et al., 2018), Musicotherapy (Düzgün and Özer, 2020), Peer Support (Orchard and Nicholls, 2020, Gavine et al., 2021, Chang et al., 2022), Postnatal Breastfeeding Education (Kim et al., 2018), Postnatal Multicomponent Intervention (Hadiisyatmana et al., 2020, Pezley et al., 2022), Self-efficacy Promotion (Wong et al., 2021, Lira et al., 2023), Support Groups (Rodríguez-Gallego et al., 2021), Telephone Technology (Oriá et al., 2018, Araya and Lopez-Alegria, 2022, Wong et al., 2021, Yonemoto et al., 2021, Chua et al., 2023, Gavine et al., 2021), Video Conferencing Support (Wagg et al., 2018, Chua et al., 2023, Gavine et al., 2021).

These interventions highlight the comprehensive role that nurses and midwives play in breastfeeding support, utilizing a variety of strategies tailored to different needs and settings.

#### *Home visit*

The majority (n=24) of nurse/midwives breastfeeding support interventions is related with Home Visit (D'Haenens et al., 2019, Yonemoto et al., 2021, Brodribb et al., 2019, Kahraman and Havlioglu, 2023, Rojas-García et al., 2023, Lira et al., 2023). Home visits focused on maternal and infant care, aimed to support the mother's health and breastfeeding practices (Kahraman and Havlioglu, 2023).

The literature highlights numerous ways in which these professionals support breastfeeding through home visits, showcasing their adaptability and the tailored nature of their care. The documented interventions include a range of practices:

Maternal Early Childhood Sustained nurse Home (MECSH) visiting (D'Haenens et al., 2019); Early Discharge with Follow-Up Visits (Discharge at 12–24 h postpartum followed by 2–3 home visits during the first week) (D'Haenens et al., 2019); Visits offered to all postpartum women, not limited to those considered vulnerable (D'Haenens et al., 2019); Hospital stay and Postpartum Home Visiting program (D'Haenens et al., 2019); Telephone call post-discharge followed by 2 home visits within 10 days (Wong et al., 2021); Comprehensive Home Visit Programs, visits aimed to examine, follow up, educate, support, and counsel postpartum women (Yonemoto et al., 2021).

*Scheduled Visits:* Four postnatal visits on days 1, 3, 7, and 30<sup>32</sup>; Single postnatal home visit within 48 h after hospital discharge (Yonemoto

et al., 2021); Visit within 48 h of discharge (Yonemoto et al., 2021, Brodrribb et al., 2019); Postpartum care visits on 3–5 and 13–15 days after delivery (Yonemoto et al., 2021); Home visits on days 3,7,28, and 42 postpartum (Yonemoto et al., 2021).

Home visits offer opportunities for education, practical assistance, emotional support, and follow-up care, contributing significantly to the success of breastfeeding practices. The variation in timing, frequency, and duration of these visits highlights the adaptability of nursing and midwifery practices to meet the specific needs of mothers and infants in the postpartum period.

#### *Telephone technology*

The included literature indicates that nurses and midwives frequently use telephone technology as a strategy for breastfeeding support interventions (n=14) (Oriá et al., 2018, Araya and Lopez-Alegria, 2022, Wong et al., 2021, Yonemoto et al., 2021, Chua et al., 2023, Gavine et al., 2021). Documented strategies highlight the versatility of telephone-based interventions in clinical practice, showcasing a range of applications and approaches: Postpartum Diary Telephone calls (Oriá et al., 2018); Bi-monthly telephone counselling, until 6 months postpartum (Oriá et al., 2018); Extended telephone support, sessions of 20–30 mins provided weekly for 4 weeks postpartum or until breastfeeding cessation (Wong et al., 2021); General use of telephone technology for educational and supportive purposes (Araya and Lopez-Alegria, 2022, Wong et al., 2021); Telephone screening calls (Yonemoto et al., 2021); Mobile Phone Telelactation Apps, offering 24-hour, unlimited, on-demand lactation consultation (Chua et al., 2023); Bi-weekly SMS texts, twelve postnatal one-to-one bi-weekly texts sent over 6 weeks by nurse-led teams (Gavine et al., 2021); Postnatal telephone-delivered educational session within 48h of discharge, with nurses available by mobile phone for the first 30 days (Gavine et al., 2021).

In addition, it is also mentioned, the Combined phone counselling and text messages: Weekly phone counselling and daily text messaging by midwives from the third trimester to 6 months postpartum (Gavine et al., 2021); Weekly postnatal telephone calls, individual calls at least once a week during the first 6 weeks post-delivery (Gavine et al., 2021); Two-Way Personalized Text Messaging, twenty-four antenatal and postnatal weekly text messages tailored to each recipient (Gavine et al., 2021) and Comprehensive Support, combining home visits with telephone support every 2 weeks until 6 months postpartum (Oriá et al., 2018).

The literature reveals substantial heterogeneity in how telephone technology is utilized by nurses and midwives, ranging from simple check-in calls to comprehensive, app-based consultations and scheduled text messages. This versatility underscores the utility of telephone technology as a flexible and accessible tool for breastfeeding support. However, despite its apparent benefits and widespread use, there is a notable need for more research to rigorously assess the effectiveness of these interventions and optimize their application in nursing and midwifery practice.

#### *Videoconferencing support*

Associated with the use of technology, the use of videoconferencing support by nurses and midwives for breastfeeding support is highlighted in six references (Wagg et al., 2018, Chua et al., 2023, Gavine et al., 2021). This approach integrates modern technology to provide accessible, real-time breastfeeding assistance to new mothers. Documented examples include: Linking Families to Hospital-Based Midwife Support (Wagg et al., 2018); Teleconsultation and Hotline services, midwives provide postpartum and breastfeeding support via Skype from 8 am to 8 pm (Chua et al., 2023); 24-Hour On-Demand Access, video consultations using a camera in a portable monitor allow mothers to connect with midwives after early discharge for immediate support (Chua et al., 2023); Scheduled video consultations, conducted 2 to 3 times a week, supplemented by the continuous use of an application to ensure

consistent communication (Gavine et al., 2021) and postnatal video conferences and consultations, Ongoing video-based support from the day of discharge up to 6 weeks postpartum through platforms such as Skype (Gavine et al., 2021).

These interventions highlight the growing role of videoconferencing as a flexible, effective tool for delivering breastfeeding support, enabling continuous, personalized care in the comfort of the mother's home.

#### *Multifaceted technology breastfeeding support*

Multifaceted technology breastfeeding support is less frequently mentioned (n=2) (Wagg et al., 2018), but it represents an innovative and integrated approach where nurses and midwives employ various digital tools to enhance postpartum care. Documented interventions include: Apps designed to assist with postpartum care, offering educational content and interactive support for breastfeeding (Wagg et al., 2018); Email Interventions (Wagg et al., 2018); N Social Support Groups (Wagg et al., 2018).

#### *Follow-up*

Follow-up is another significant breastfeeding support intervention highlighted in the literature (n=9) (D'Haenens et al., 2019, Yonemoto et al., 2021, Brodrribb et al., 2019, Pezley et al., 2022, Lira et al., 2023), showcasing how nurses and midwives develop continuous care strategies through various approaches: Follow-up by the community, hospital, or ambulatory service centre's nurse (D'Haenens et al., 2019); Postpartum Clinic Follow-Up after Discharge (D'Haenens et al., 2019); Combined community follow-Up (Yonemoto et al., 2021); Comprehensive follow-up plan post-early discharge (Brodrribb et al., 2019); Home visit anchored in group-based hospital follow-Up (Pezley et al., 2022); Standard Individual Postpartum Clinic Follow-Up (Pezley et al., 2022).

These follow-up interventions demonstrate how nurses and midwives extend care beyond the initial postpartum period, providing structured, ongoing support to ensure the well-being of both mother and infant. This approach facilitates continuous monitoring, timely intervention, and sustained breastfeeding support, which are crucial for successful breastfeeding practices.

#### *Co-parenting*

To enhance breastfeeding support, nurse-midwives implement various co-parenting interventions (n=8) (Zhao et al., 2023), which have shown to positively influence breastfeeding rates. These include: Face-to-face education and counselling delivered during the immediate postpartum period, comprising two sessions of 40 mins each, spaced one week apart, beginning 2–3 days post-delivery (Zhao et al., 2023); Prenatal group sessions, exemplified by the "Fathers Club," conducted over a 10-month period starting between the 12th and 27th weeks of gestation (Zhao et al., 2023); Educational interventions, such as the "Father Support Model," which include lectures, practical skills training, group discussions, and feedback sessions, initiated around the 39th week of gestation and lasting approximately 60–90 mins per session (Zhao et al., 2023); Daily breastfeeding education for fathers during visiting hours, involving 20 min instruction sessions accompanied by a training booklet and hands-on demonstrations using a breast pump, milk collection bags, feeding cups, chairs, stools, pillows, and massage oil (Zhao et al., 2023); Multidisciplinary partnership interventions, which involve antenatal training sessions of 330 mins, typically conducted around the 24th week of pregnancy (Zhao et al., 2023); Breastfeeding incentive program expectant couple (5 sessions, 2h breastfeeding class) (Zhao et al., 2023).

#### *Peer support*

In contemporary clinical practice, there is a marked and increasing emphasis on the value of shared experiences between individuals who have previously undergone a particular experience and those who are preparing for it. This peer support approach has demonstrated substantial positive outcomes for both groups involved. Within the context of breastfeeding support interventions, the current evidence highlights

the role of nurses and midwives in facilitating peer support mechanisms (n=7) (Orchard and Nicholls, 2020, Gavine et al., 2021, Chang et al., 2022), with the following examples: Facebook-based breastfeeding peer-support groups managed by midwives to create a safe, supportive space for sharing experiences and advice (Orchard and Nicholls, 2020); Postnatal internet-based peer support, facilitated through closed Facebook groups, where a midwife is accessible to respond to participants' questions and provide professional guidance (Gavine et al., 2021); Peer support programmes designed to offer additional motivation and encouragement to mothers, enhancing their breastfeeding experience and confidence (Chang et al., 2022); and Integration of volunteer peer supporters working collaboratively with community midwives as part of structured peer-support projects, ensuring continuous and accessible support for new mothers (Chang et al., 2022).

#### *Combined educational intervention, community-based postnatal care and counseling*

Nurse-midwifery practice encompasses various breastfeeding support interventions, notably combined educational interventions (Kim et al., 2018, Wong et al., 2021), community-based postnatal care (Yonemoto et al., 2021, Brodribb et al., 2019, Pezley et al., 2022) (n=5), and counseling (Guille et al., 2020, Wong et al., 2021, Karaçam and Saglik, 2018, Lira et al., 2023, Moura et al., 2023) (n=5), each playing a significant role in enhancing breastfeeding outcomes (n=5 for each type of intervention). Combined Educational Intervention refers to the integration of multiple forms of educational activities conducted by nurse-midwives. These include: Prenatal and postnatal breastfeeding education and knowledge-sharing practices supplemented with empowerment strategies (Kim et al., 2018); One-to-one prenatal educational sessions (Sinclair et al., 2018); A 35 min videotaped educational session paired with a six-week use of a Daily Breastfeeding Log, reinforced by weekly phone reminders (Wong et al., 2021); Two 45 min antenatal sessions conducted at 36–37 weeks of gestation, coupled with immediate postnatal support on days 1, 2, and 3<sup>28</sup>.

Community-based Postnatal Care focuses on extending midwifery support into the community setting through: Home visits and final discharge consultations conducted by midwives, ensuring a seamless transition from hospital to home care (Yonemoto et al., 2021); Postnatal home care administered by community midwives (Yonemoto et al., 2021), with structured visits scheduled as needed; Two scheduled home visits, with the first visit planned via phone for the first working day post-discharge and the second within the first 10 days, including referrals to other healthcare services when necessary (Brodribb et al., 2019); Postpartum care with up to 10 home visits from a support worker, each lasting up to 3 h per day, within the first 28 days postpartum (Pezley et al., 2022); Home-based postpartum care provided by a midwife after an abbreviated hospital stay of 24–48 h (Pezley et al., 2022).

Counseling in breastfeeding support, as described in the literature, includes: 30 min sessions on breastfeeding techniques conducted by two trained nurses (Guille et al., 2020); Individualized counseling sessions characterized by a "hands-off" approach, empowering mothers to handle breastfeeding independently (Wong et al., 2021); Counseling that addresses breastfeeding challenges combined with educational and supportive measures (Karaçam and Saglik, 2018); Verbal-only counseling protocols focused on positioning and latch, delivered by skilled midwives (Lira et al., 2023); Daily smartphone-based feedback and access to a counselling platform, connecting postpartum women with a multidisciplinary team (including nurses), to provide continuous lactation support and advice (Moura et al., 2023).

#### *Postnatal breastfeeding education and postnatal multicomponent intervention*

Similar to the prenatal period there are also findings in the included evidence mentioning to Postnatal Breastfeeding Education (Kim et al., 2018) (n=4) and Postnatal Multicomponent Intervention (Araya and

Lopez-Alegria, 2022, Hadisuyatmana et al., 2020, Pezley et al., 2022) (n=4). The nurse/midwife intervention on Postnatal Breastfeeding Education involves Extend midwifery support program (Kim et al., 2018); Health education & counselling (Kim et al., 2018); Postnatal breastfeeding education/support<sup>27</sup>; Early postnatal breastfeeding support and education (Kim et al., 2018).

The Postnatal Multicomponent Intervention includes an nurse/midwife Enhanced motivational intervention on postnatal educational support and lactation consultancy (Araya and Lopez-Alegria, 2022); Education during intrapartum period - Positive nurse attitude with encouragement to skin-to-skin contact, and to initiate breastfeeding instantly after giving birth (Hadisuyatmana et al., 2020); Single brief motivational interviewing session immediate postpartum to promote breastfeeding and telephone booster session at 1 month postpartum (Pezley et al., 2022).

#### *Men's/father's support*

Another interesting finding is related with the Men's/fathers support (Earle and Hadley, 2018) (n=3), in the context of breastfeeding. This aspect involves the active role of nurse-midwives in promoting and facilitating men's engagement in breastfeeding practices. The literature acknowledges professional breastfeeding support directed at men/fathers as an essential, though underexplored, component of comprehensive breastfeeding care (Earle and Hadley, 2018).

The study (Earle and Hadley, 2018) findings highlighted a brief mention of midwives' involvement with fathers, indicating that men often feel excluded from health promotion efforts related to infant feeding. This limited engagement suggests that midwifery practices have yet to fully integrate strategies that include fathers as active participants in breastfeeding support. Furthermore, the data reveals a significant lack of discussion and research concerning the role of midwives in fostering men's involvement in infant feeding, signifying a crucial research gap in midwifery-led breastfeeding care.

#### *Breastfeeding coaching / combined counselling intervention / self-efficacy promotion / support groups*

There was found little references to Breastfeeding coaching (D'Haenens et al., 2019, Wong et al., 2021) (n=2), meaning individual time and personalized attention with a midwife in parenting room (D'Haenens et al., 2019); and three one-to-one hospital breastfeeding support sessions of 30–45 mins regarding breastfeeding knowledge in first 48h postpartum (Wong et al., 2021).

There was reference to Combined counselling intervention (Wong et al., 2021, Brodribb et al., 2019) (n=2) through Breastfeeding workshop at 28–38 weeks of gestation and 30 to 60 min telephone counseling at two weeks postpartum (Wong et al., 2021); and Telephone call at 48h and home visits lasting 1h at day 3–4<sup>35</sup>.

There was also reference to Self-efficacy promotion (Wong et al., 2021, Lira et al., 2023) (n=2) in which the nurse/midwives develop 3-individualized (2 in hospital and 1 by telephone) self-efficacy enhancing sessions (Wong et al., 2021); and Nursing intervention protocol to increase mothers' self-efficacy in breastfeeding (3-individualized self-efficacy sessions - 2 in the hospital and 1 over the phone) (Lira et al., 2023).

Findings also revealed the Support groups (Rodríguez-Gallego et al., 2021) (n=2), consisting on Community support groups (Rodríguez-Gallego et al., 2021) and Online Self-Help Support Group (Rodríguez-Gallego et al., 2021), promoted by nurse/midwife.

#### *Other interventions*

In the literature reviewed, only a single reference was found for several unique breastfeeding support interventions involving nurse-midwifery practice. These interventions encompass:

Baby-friendly Hospital Initiative (BFHI) intervention (Kim et al., 2018) - nurse/midwife participation was noted in implementing the BFHI during the postnatal period. This included involvement in the

Promotion of Breastfeeding Intervention Trial (PROBIT), the expansion of BFHI Step 10, and lactation management training as part of the initiative;

Breastfeeding Emotional Support (Kim et al., 2018) - this intervention involved comprehensive emotional support and counselling, Practical and emotional support, and Counselor-initiated lactation counseling intervention;

Caseload care (D'Haenens et al., 2019) - consists of an intervention based on continuity of care, which refers to the number of cases or clients for the same, known midwife provider is responsible, offering antenatal, intrapartum and postnatal care.

Massage techniques (Nuampa and Payakkaraung, 2021) - consists of training nurses in massage techniques, knowledge, and skills, as this may be a low-risk, effective, and less expensive alternative method for increasing milk transfer and production during early postpartum period and for sustaining breastfeeding duration. The authors propose different types of massage techniques, such as Back Massage, Full-body Massage, Oketani Breast Massage, Woolwich Massage, Marmet Massage, and Oxytocin Massage.

Midwifery support in a prison context (Santos et al., 2022) - consists of breastfeeding support intervention by midwives for women prisoners who, due to a lack of legislation protecting breastfeeding, are often deprived of their right to breastfeed their babies.

Midwifery-led care (D'Haenens et al., 2019) - consists of an intervention in which the same midwife (or a team of midwives) provides antenatal, intrapartum, and postpartum care in midwifery clinics, referring to an obstetrician when needed and providing specific advice to support women's well-being.

Music therapy (Düzgün and Özer, 2020) - consists of nurses counselling to breastfeeding mothers which can use music intervention to increase breast milk production.

#### *Strengths and limitations*

This review is composed of studies of good methodological quality that allow us to establish important recommendations for clinical practice and provide updated information on the intervention of nurses/midwives in breastfeeding care. There was high heterogeneity between the identified studies regarding the moments of evaluation of the interventions carried out and outcomes measured, which made comparisons between them difficult. This umbrella review found that the description of the interventions of nurses/midwives use to promote and support breastfeeding varies in quality and thoroughness. Some descriptions lack or only briefly mention its components, making it difficult to compare and replicate the interventions, and foregoing the opportunity to assess their effectiveness and enhance them.

#### **Conclusions**

Considering the objective of this study, the review did not identify specific interventions by nurses or midwives explicitly designed for breastfeeding protection. This finding underscores the limited engagement of nurses and midwives in this critical area, despite their extensive expertise, which could significantly contribute to informed decision-making for developing effective breastfeeding protection policies. However, evidence points to their involvement in breastfeeding promotion, with notable references to their roles in counselling, peer support, prenatal breastfeeding education, prenatal multicomponent interventions, and telephone support.

The predominant focus of nurse/midwife interventions appears to be on breastfeeding support. This support encompasses a wide range of interventions, such as collaboration in the Baby-Friendly Hospital Initiative, breastfeeding coaching, breastfeeding emotional support, caseload care, co-parenting promotion, combined counselling and educational interventions, community-based postnatal care, counselling, follow-up services, home visits, massage techniques, men's/

fathers' support, midwifery support in prison settings, midwifery-led care, multifaceted technological breastfeeding support, music therapy, peer support, postnatal breastfeeding education, postnatal multicomponent interventions, self-efficacy promotion, support groups, and technological approaches such as telephone and video conferencing support.

#### *Implications for research*

The reviewed literature shows us the need to develop more research to understand the nurse/midwife's professional intervention facing the challenges of breastfeeding. The interventions described in the included studies were very heterogeneous concerning the characteristics of the groups and the periodicity of the meetings, reason why more studies are needed. In particular, researchers should develop, test, and disseminate nurse and midwifery interventions to protect, promote and support breastfeeding. Future studies require randomized, larger samples with similar characteristics, and multiple and long follow-ups focused on specific interventions by nurses and midwives, which allow for better data comparison.

Moreover, systematic reviews should be conducted to assess the effectiveness of nurses/midwives' interventions on breastfeeding protection, promotion, and support. Also, additional research should perform a cost-effectiveness analysis of these intervention's impact on the healthcare system. By exploring the specific interventions of nurses/midwives' protection, promotion, and support, it will be possible to develop more appropriate responses to women's needs and contribute to increasing breastfeeding rates.

Furthermore, it would be important to develop studies that explore the concept of nurse/midwife professional intervention, their autonomous dimension, their competencies, and knowledge, as well as their decision-making process in breastfeeding. Finally, a nurse/midwife decision-making support model should be developed to sponsor their autonomous practice and increase the quality and security of breastfeeding care.

#### *Implications for practice*

This umbrella review offers a comprehensive synthesis of nurse/midwife interventions in breastfeeding protection, promotion, and support as described in the literature. Translating evidence into practice remains a significant challenge; however, the findings of this review can enhance awareness of the professional roles that nurses and midwives play in breastfeeding contexts and may provide insights that lead to improvements capable of enhancing the quality and safety of breastfeeding care.

While some results reaffirm existing practices, emerging evidence underscores the potential for integrating new technologies and innovative interventions. These advancements could enrich the current scope of professional breastfeeding support, protection, and promotion. By incorporating novel strategies into practice, nurses and midwives can aim for more dynamic and effective breastfeeding care services, with effective social utility, contributing to health gains and the goals of the United Nations 2030 Agenda for Sustainable Development mainly Goal 3 - which outlines approaches to ensure healthy lives and promote well-being for all at all ages (Nations, 2025).

Moreover, the review holds implications for health policymakers, highlighting the critical role that nurses and midwives have in the breastfeeding process. Recognizing their contributions can pave the way for policies that not only involve but leverage the expertise of these professionals, thereby influencing breastfeeding rates and overall care quality. Enhanced policy support and professional integration are essential for fostering environments that prioritize comprehensive breastfeeding care and promote sustained breastfeeding practices.

The multifaceted nature of nursing and midwifery practice complicates the measurement of their impact due to the diverse roles they play

across various care contexts. Moreover, the domain of breastfeeding knowledge is inherently multidisciplinary and requires more targeted research focusing on the specific contributions of nursing and midwifery care. Addressing these research gaps will be crucial for developing evidence-based practices that enhance the protective, promotive, and supportive aspects of breastfeeding care delivered by nurses and midwives.

### Statement of significance

Significance Statement	
<b>Problem or Issue</b>	What interventions are implemented by nurses and midwives to protect, promote, and support breastfeeding?
<b>What is Already Known?</b>	Currently, literature affirm the effectiveness of breastfeeding interventions across various settings and perinatal periods. However, breastfeeding knowledge is inherently multidisciplinary, extensive, and often fragmented, complicating the assessment of existing evidence. In that regard, breastfeeding rates concerns of nurses and midwives involved in breastfeeding care, raising questions about the knowledge and ability to promote it effectively.
<b>What this Paper Adds?</b>	This umbrella review makes it relevant to understand the nursing and midwifery intervention in the breastfeeding process. It will provide a synthesis of the results of high-quality research, that can facilitate the use of the best available evidence by decision-makers and clinical practitioners to enhance the quality of breastfeeding care, by improving the nurse and midwifery results. Samely, this review will contribute to the dissemination of research results and identify possible gaps in knowledge and your needs for the future.

### CRedit authorship contribution statement

**Cristina Couto:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Ana Paula Prata:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Sandra Patrícia Souto:** Writing – review & editing. **Joana Machado:** Validation, Resources, Methodology, Investigation, Formal analysis, Data curation. **Clara Roquete Viana:** Writing – review & editing, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Supplementary materials

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