A scoping review protocol of factors influencing breastfeeding knowledge and attitudes among non-pregnant, nulliparous women of reproductive age

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ORIGINAL

Introduction

Breastfeeding is the best choice for feeding an infant and the benefits of breast milk are well established (World Health Organization (WHO) 2022, Muro-Valdez et al 2023). One of the most important strategies to reduce infant and childhood mortality, as well as the risk of noncommunicable diseases later in life, is breastfeeding (Prentice 2022, UNICEF 2023). The Global Breastfeeding Collective has set targets for 2030, aiming for 70 per cent exclusive breastfeeding prevalence among infants under six months of age. Additionally, the collective seeks to achieve a 70 per cent rate of newborns initiating breastfeeding within one hour of birth and an 80 per cent rate of infants still breastfeeding at one year of age (WHO 2022). This emphasises the key role of breastfeeding in maternal and child health (Levin et al 2017, Muro-Valdez et al 2023).

Breast milk contains various bioactive compounds, immune cells and molecules that help protect the immune system, develop organs, and control inflammation (Gura 2014). Breastfeeding reduces the incidence of common diseases such as otitis media, lower respiratory tract infections, gastroenteritis, bacteremia, bacterial meningitis, urinary tract infections, asthma, obesity and sudden infant death syndrome (Levin et al 2017, Muro-Valdez et al 2023). It also promotes maternal health and wellbeing, and reduces the risk of postpartum haemorrhage, cardiovascular outcomes, breast, ovarian, uterine and thyroid cancers, iron deficiency anaemia, lowered blood pressure, type 2 diabetes and even maternal death. Short-term health benefits of breastfeeding include reduced symptoms of infection, susceptibility to stress, blood pressure, weight loss, improved positive mood and fertility control (Salone et al 2013, Chowdhury et al 2015, Prentice 2022, Muro-Valdez et al 2023). Expanding breastfeeding to near universal coverage could prevent 20,000 deaths per year from breast cancer and 823,000 deaths in children under five (Victora et al 2016). Despite the numerous benefits of breast milk, breastfeeding rates have been reported to be as low as 48 per cent worldwide and it is no longer the norm (WHO 2024). Additionally, embarrassment associated with breastfeeding is commonly reported (McFadden & Toole 2006, Hackett et al 2015).

To enable women to breastfeed successfully, supportive interventions must address the multifaceted determinants of breastfeeding practices (Rollins et al 2016). Research indicates insufficient knowledge and suboptimal attitudes among women regarding breastfeeding. Some women incorrectly believe that exclusive breastfeeding allows for the inclusion of other liquids, such as water or cow's milk alongside breast milk and giving prenatal feeds such as water, honey, canned milk and fruit juice immediately after birth is still common in some societies (Hackett et al 2015). Research shows that positive attitudes and sufficient knowledge are key facilitators and critical factors for successful breastfeeding, serving as essential steps to improve breastfeeding rates (Kornides & Kitsantas 2013, Radzyminski & Callister 2016, Earle & Hadley 2018, Yang et al 2018, Abdulahi et al 2021, Aboul-Enein et al 2023, Ibrahim et al 2023).

Women are the main decision-makers when it comes to feeding babies (Earle & Hadley 2018). Addressing limited knowledge and influencing attitudes is more successful at a younger age, before pregnancy occurs, as individuals have more time to make informed decisions about future breastfeeding practices (Ho & Yu 2014, Jannesari et al 2020). This process becomes more challenging during pregnancy or after birth because of physical, emotional and lifestyle changes, as well as barriers to learning. This paper reports a protocol for a scoping review designed to map systematically and synthesise the available evidence on breastfeeding knowledge and attitudes, with a focus on identifying influencing factors among non-pregnant, nulliparous women of reproductive age.

Methods

This study will be conducted as a scoping review. Scoping reviews are used where the literature on a particular topic is uncertain. This approach allows for the identification of research gaps and clarification of key concepts, while providing a comprehensive overview of the current research landscape (Grant & Booth 2009, Munn et al 2018). Scoping reviews are particularly suited for this topic, as they enable the identification of various research methodologies employed in the field and highlight key characteristics or factors related to breastfeeding knowledge and attitudes. The proposed scoping review will be conducted in accordance with PRISMA-ScR (Chan & Whitfield 2020) and will follow five steps based on the Joanna Briggs Institute (JBI) methodology for scoping reviews (Ejie et al 2021):

a) Formulation of the review question
b) Identification of relevant studies
c) Selection of sources, evidence and studies
d) Data extraction and charting
e) Collation, summary and reporting of results.

The review process will adhere to the PRISMA-ScR and JBI scoping review checklists. The framework employed to develop the search question is the population, concept and context (PCC) approach.

Formulation of the review question

Question: what factors influence the knowledge and attitudes of non-pregnant, nulliparous women of reproductive age towards breastfeeding?

Scoping reviews often use the framework PCC rather than participants, interventions, comparators, outcomes (PICO) to formulate the search question (Peters et al 2022). For this scoping review the PCC is:

Population: non-pregnant, nulliparous women of reproductive age.

Concepts: knowledge and attitudes toward breastfeeding.

Context: all countries.

Inclusion and exclusion criteria

Studies will be considered for inclusion if they align with the following criteria.

Focus on a population of women who are:

1) Non-pregnant
2) Nulliparous
3) Of reproductive age (defined by the WHO as 15–49 years old).

Published in English: owing to limited resources, translating non-English papers is not feasible.

The review will exclude studies with the following criteria:

- Studies without clear data on the participants' demographic characteristics: sex and age
- Interventional and experimental studies that do not provide pre-intervention data on the level of knowledge and attitudes towards breastfeeding or influencing factors.

Included studies will focus on knowledge and attitudes toward breastfeeding. Studies examining breastfeeding rates, patterns, planning, initiation, practices and counselling skills will be excluded.

Identification of relevant studies

Search strategy

A comprehensive search strategy will be developed by first creating a concept map based on key terms. This approach helps establish an extensive list of synonyms and search terms. The process involves brainstorming related terms using main concepts and keywords, reviewing relevant papers and noting key terms, utilising thesaurus tools to find synonyms, employing database-specific features such as MeSH for PubMed and considering different word forms, using truncation symbols to capture variations. To enhance the quality and effectiveness of the search strategy, the expertise of a research librarian at the university will be sought.

The search terms will be as follows:

knowledge OR attitude* OR awareness OR Education OR Competence OR Literacy OR Perception* OR understanding* OR comprehension OR belief* OR stance* OR perspective* OR view* OR thought* OR opinion*

AND

Breastfeeding OR "Breast feeding" OR "Breast-feeding" OR "Breast Fed" OR Breastfed OR lactation OR infantfeeding OR "infant feeding" OR "breast milk" OR "human milk" OR "newborn feeding"

AND

Nulliparous OR Nonparous OR "non parous" OR "non-parous" OR Childless OR "Never given birth" OR "Zero-parity" OR nulligravida OR "never-pregnant" OR nonpregnant OR "non pregnant" OR non-pregnant OR student* OR "Non parous" OR "Non-parous" OR "before pregnancy" OR "prepregnancy" OR "pre-pregnancy" OR "Antecedent to pregnancy" OR "prior to pregnancy" OR nulliparity OR "pre gestation" OR "pre-gestation" OR "pregestation" OR pregestational

OR "pre gestational" OR pregestational OR "preconceptional" OR pre-conceptional OR pre conceptional OR preconception OR "pre conception" OR "pre-conception"

These search terms will be then adapted for use in different databases to accommodate database-specific features and optimise results.

Source of evidence

The search will be conducted using multiple electronic databases to ensure broad coverage of relevant research in the following databases: EBSCO, including CINAHL and MEDLINE, Scopus, PubMed, Web of Science, Cochrane Library and Ovid. A manual search will also be carried out in the bibliographic references of the selected articles.

Selection of evidence

All identified sources will be collated in a file using the EndNote bibliography library. After removing duplications, they will initially undergo first screening at the title and abstract level, separated by database. After screening all sources, the second stage will involve full-text checking. The screening and selection process often leads to finding new or relevant terms. When this happens, the search will be changed and expanded as needed. Any new articles found this way will be added to the EndNote file.

Two reviewers will examine selected sources to determine whether they meet the inclusion requirements. The number of studies included in the review will be reported following the PRISMA-ScR reporting guideline checklist, and a PRISMA-ScR flow diagram will be included that visually summarises the screening process, showing how many studies are identified, included and excluded at each stage of the review. After reviewing all full texts, excluded sources will be recorded and reported in a table with reasons for exclusion.

Data extraction and charting

A draft data extraction table aligned with the review questions has been created in Microsoft Excel (Figure 1).

Figure 1. Draft data extraction table

Study Details				Study Characteristics				Participants Characteristics				Study Results		
Year	Authors	Country	Title	Aims	Study Design	Assessed Factors	Assessment Tool	Participants	Age	Sample Size	Demographic and other variables	Level of Knowledge/Attitude	Influencing Factors Identified	Key Findings

Following recommendations (Tricco et al 2018, Peters et al 2022), information on various aspects will be collected: study details (including year, authors, country and title), study characteristics (covering aims, study design, assessed factors and assessment tool), participant characteristics (detailing participants, age, sample size, and demographic and other variables), and study results (presenting scores/level of knowledge/attitude, influencing factors identified and key findings).

Screening and data extraction procedures will be conducted by two reviewers. The results will be discussed through a collaborative review of the articles. Any disagreements between reviewers will be resolved through discussion.

Collation, summary and reporting of results

Quality assessment

The quality of included studies will be assessed in this scoping review. A critical appraisal of studies will be presented in a simple table of bias using a set of 10 aspects of study quality, including: clarity of study objectives; appropriateness of cross-sectional design; population definition; sampling method representativeness; sample size adequacy; validity and reliability of measures; suitability of statistical analysis; clarity of results presentation; discussion of study limitations; and ethical considerations. Each item will be rated as 'Yes', 'No' or 'Unclear' and quality scores will be simply visualised using symbols (+, ++, +++, -) based on the information provided in the study.

Data synthesis and presentation

To provide a comprehensive overview, the results will be presented through a combination of narrative summaries that highlight key findings, along with tables and graphs that summarise essential data. The information will be organised into logical categories based on knowledge and attitude concepts or scales. Studies will be classified according to population groups and further distinguished by study design and type. The findings will differentiate between studies using validated tools and those employing self-administered instruments. Levels of knowledge and attitude will be visualised using coloured circles, where different colours represent low, moderate and high levels of knowledge. Strength of attitudes will be expressed using symbols such as +, -, and ~ to indicate positive, negative and neutral attitudes, respectively.

For transparency, the protocol has been registered on the Open Science Framework: osf.io/mwty5

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For more information on this topic see MIC database Search Pack: PN4 The decision to breastfeed.

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