

UNIVERSITY OF TARTU

Ankita Ghosal

Knowledge of Postpartum Mothers about Nutrition: A Scoping Review

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Master's Thesis

Supervisors:

Alastair Forbes, MD, FRCP

Liisi Mägi, Junior Research Fellow

Anni Anastasia Pilvar, Midwife

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This study did not require ethical approval as it is based on a scoping review of previously published literature and does not involve human participants or primary data collection. Ethical standards were maintained by accurately citing all sources and ensuring transparent reporting of findings.

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RESEARCH PERFORMERS :

1. Responsible Researcher Name: Professor Alastair Forbes

- **Scientific degree:** MD FRCP
- **Occupation:** Visiting Professor and Senior Doctor
- **Workplace:** Department of Internal Medicine, University of Tartu, Tartu, Estonia
- **Workplace address:** Puusepa tn 8, 50406 Tartu
- **Phone number:** +372 5883 0422
- **E-mail:** alastair.forbes@ut.ee

2. Associate Name: Ankita Ghosal

- **Scientific degree:** Bachelor of Science in Nursing
- **Occupation:** Master's student in Clinical Nutrition
- **Workplace:** Department of Internal Medicine, University of Tartu
- **Workplace address:** Puusepa tn 8, 50406 Tartu
- **Phone number:** +372 5399 7287
- **E-mail:** ankita@ut.ee

3. Associate Name: Liisi Mägi

- **Scientific degree:** Masters in Nursing Science
- **Occupation:** Junior Research Fellow
- **Workplace:** University Of Tartu
- **Workplace address:** Ülikooli tn 18, 50090 Tartu
- **Phone number:**
- **E-mail:** liisi.magi@ut.ee

4. Associate Name: Anni Anastasia Pilvar

- **Scientific degree:** Masters in Nursing Science
- **Occupation:** Midwife

- **Workplace:** University of Tartu Hospital
- **Workplace address:** Puusepa tn 8, 50406 Tartu
- **Phone number:** +372 5344 7085
- **E-mail:** AnniAnastasia.Pilvar@Kliinikum.ee

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1. Summary

Title of the Master's Thesis: Knowledge of Postpartum Mothers about Nutrition: A Scoping Review.

Abstract:

Background: The postpartum period, also known as the postnatal period, is defined as the first six weeks (42 days) following childbirth (World Health Organization, 2013). Adequate nutrition during this phase is essential for maternal recovery and long-term health. However, evidence suggests that maternal understanding of postpartum dietary needs varies across different populations and settings.

Objective: The aim of this scoping review is to examine the level of nutritional knowledge among postpartum mothers and identify common gaps in knowledge across different geographical contexts.

Methods: This review was conducted using the Arksey and O'Malley framework for scoping studies. A structured search was performed in PubMed, Scopus, Web of Science, and CINAHL. Studies published in English between 2011 and 2026 were included. A total of 635 records were identified, of which 19 studies met the inclusion criteria and were included in the final synthesis.

Results: The findings indicate that postpartum mothers generally demonstrate a moderate level of nutritional knowledge across different settings. However, knowledge was often limited in depth, particularly regarding micronutrient requirements, dietary diversity, and increased energy needs during the postpartum period. In addition, clear geographical and socio-economic variations were observed, with higher knowledge levels generally reported among women with better education and healthcare access. Across studies, a consistent gap was identified between general nutritional awareness and practical application of dietary knowledge in daily life.

Conclusion: This review highlights that although postpartum mothers have general awareness of nutrition, significant gaps remain in detailed and applied nutritional knowledge. These gaps are influenced by educational, cultural, and socio-economic factors and vary across different geographical contexts. The findings suggest the need for more targeted, practical, and context-specific nutrition education that supports women in translating knowledge into appropriate dietary practices during the postpartum period.

Keywords: Postpartum nutrition, maternal health, nutritional knowledge, scoping review, micronutrients

2. Introduction

2.1 Background of the Study

The postpartum period, commonly referred to as the “fourth trimester,” is a critical physiological and psychological transition phase for both the mother and the newborn (World Health Organization, 2016). During this transition phase, the maternal body undergoes a biological reorganization, shifting from the state of pregnancy to recovery of systemic homeostasis and the initiation of lactation, involving significant metabolic and hormonal changes (Black et al., 2013; Victora et al., 2016). This phase is characterized by intense metabolic demands, as nutritional requirements remain elevated due to tissue repair, recovery processes, and lactation needs (Victora et al., 2016).

Proper nutrition during the postpartum period is not only a matter of caloric intake but is essential for tissue repair, restoration of maternal nutrient stores depleted during pregnancy and childbirth, hormonal regulation, and overall maternal recovery (Strobel et al., 2023; Butte & King, 2005). In addition, maternal nutritional status has been shown to influence the composition and quality of breast milk, which may in turn affect neonatal growth patterns and neurodevelopmental outcomes (Bravi et al., 2016; Keikha et al., 2017; Valentine & Wagner, 2013; Victora et al., 2016).

Despite its importance, maternal nutrition is frequently underemphasized in postnatal care settings, where the clinical focus often prioritises infant health outcomes, while maternal nutritional literacy and recovery receive comparatively less attention (Bathula et al., 2023; Kavle et al., 2017). This gap highlights the need for more integrated postnatal care approaches that address both maternal recovery and infant wellbeing simultaneously.

2.2 Problem Statement

Despite the documented importance of postpartum nutrition, research regarding

maternal nutritional knowledge remains fragmented and localized. While global health initiatives have successfully increased awareness regarding breastfeeding, there is a significant deficit in mothers' understanding of their own dietary requirements, specifically regarding micronutrients like iron, calcium, and iodine (Paliwal et al., 2023). Current studies use inconsistent tools and focus on small, isolated groups, making it difficult to compare their results. This lack of a synthesized evidence base makes it difficult for healthcare providers to design effective, standardized nutritional education programs. Furthermore, there is a clear “knowledge–practice gap,” where cultural beliefs and socio-economic barriers may prevent mothers from applying the nutritional knowledge they possess (Pelto & Armar-Klemesu, 2011; Lassi et al., 2013). This scoping review aims to map existing evidence rather than directly compare or statistically synthesise results. The focus is on identifying patterns, gaps, and variations in maternal nutritional knowledge across different contexts.

2.3 Aim and Research Questions

Aim:

The aim of this scoping review is to map and analyse existing evidence on nutritional knowledge among postpartum mothers based on previously published studies.

Research Questions:

This review is guided by the following research questions:

RQ1: What is the level of nutritional knowledge among postpartum mothers reported across different geographical areas?

RQ2: What are the common gaps in postpartum mother's nutritional knowledge identified across different contexts?

2.4 Significance of the Study

This study also contributes to scientific knowledge by highlighting important gaps in research, especially the lack of studies from European and Western contexts.

This research is relevant for improving healthcare practice and patient outcomes. By identifying where maternal nutritional knowledge is lacking, this review can help in developing better and more focused educational materials.

Understanding the “knowledge–practice gap” can help midwives and family doctors provide more targeted and practical counselling during postnatal check-ups. Overall, this thesis supports a more “mother-centred” approach to care, where the mother’s recovery and nutritional well-being are given equal importance alongside the health of the infant.

3. Literature Review And Theoretical Framework

3.1 The Physiological Imperative of the Postpartum Period

The puerperium, or postpartum period, refers to the phase following childbirth in which the maternal body undergoes a process of physiological and hormonal recovery. According to the World Health Organisation, the postpartum period is defined as the first 42 days (6 weeks) after delivery, during which most maternal physiological changes related to pregnancy and childbirth gradually return to a non-pregnant state (World Health Organization, 2013). Immediately after placental delivery, there is a sharp decline in oestrogen and progesterone levels, which triggers uterine involution, metabolic adjustments, and other systemic changes. This period is also characterized by increased nutritional and energy demands, particularly to support lactation and tissue repair, as the body works to restore homeostasis and stabilize normal physiological functioning (Neville et al., 2012; Rasmussen & Yaktine, 2007).

3.1.1 Metabolic Demands and Lactogenesis

Lactation is recognized as one of the most energetically demanding physiological processes in humans, requiring considerable metabolic adaptations to support milk synthesis. The production of breast milk is associated with an increased energy requirement of approximately 330 kcal per day in early lactation and up to 500 kcal per day, depending on the stage of lactation (EFSA, 2017; National Academies, 2020). To meet these increased demands, an adequate intake of both macronutrients and micronutrients is essential. Maternal diet plays a critical role not only in sustaining the energy cost of lactation but also in influencing the nutritional composition of breast milk (Lindsay H. Allen 2005; Bravi et al., 2016) systematic review. Evidence suggests that the concentrations of several micronutrients in human milk, particularly water-soluble vitamins and certain fatty acids, are sensitive to maternal dietary intake and nutritional status (Bravi et al., 2016).

In conditions of inadequate dietary intake, the maternal body adapts by mobilising endogenous nutrient stores to maintain breast milk production, thereby prioritising infant nutritional needs (Andres & Stuebe, 2022). While this adaptive mechanism supports infant growth and development, In conditions of inadequate dietary intake, maternal nutrient reserves may be used to support breast milk production, which over time can contribute to depletion if nutritional needs are not met (Andres & Stuebe, 2022; Butte & King, 2005).

Over time, insufficient dietary intake may negatively affect maternal nutritional status, particularly in cases of repeated pregnancies and prolonged lactation (Black et al., 2013; Pérez-Escamilla et al., 2021). These findings highlight the importance of adequate maternal nutrition during the postpartum period to support both maternal health and infant development.

3.1.2 The Nutritional-Mental Health Axis

Recent research indicates that postpartum nutrition may be closely linked to maternal mental health. Deficiencies in nutrients such as omega-3 fatty acids (DHA), vitamin B12, and vitamin D have been associated with an increased risk of postpartum depression (PPD) (Leung & Kaplan, 2021; Lassi et al., 2020). These nutrients play an important role in brain function and in regulating stress responses, including the HPA axis, which manages stress responses (Patrick & Ames, 2015; Firth et al., 2020). Therefore, nutrition can play an important role in supporting mental well-being during the postpartum period.

3.2 Micronutrient Requirements and Clinical Implications

Postpartum nutrition requires adequate intake of key micronutrients to support maternal recovery and infant development.

3.2.1 Iron and Hematological Restoration

Postpartum anaemia is a global concern affecting energy levels and cognitive function (WHO, 2021). Iron is not only required for haemoglobin synthesis but also acts as a cofactor for enzymes involved in DNA synthesis (Abbaspour et al., 2014). Limited

understanding of nutrient absorption, such as the difference between heme and non-heme iron, can negatively affect recovery even when food intake is adequate. Furthermore, the role of Vitamin C in enhancing iron absorption is a critical knowledge domain that is often absent in maternal literacy (Forh et al., 2022; Paliwal et al., 2023)

3.2.2 The Calcium-Vitamin D Synergism

Lactation is accompanied by well-regulated physiological adaptations that ensure sufficient calcium supply for breast milk production. One of the key mechanisms involves the temporary mobilization of calcium from maternal bone stores through increased bone resorption. This process is hormonally regulated, involving changes in oestrogen levels and increased activity of parathyroid hormone-related pathways, which collectively enhance skeletal calcium release during breastfeeding (Kalkwarf & Specker, 2002; Kovacs, 2016; Prentice, 2003). As a consequence, a transient decline in bone mineral density is commonly observed during lactation, particularly in trabecular bone sites that are metabolically active (Specker, 2004; Kovacs, 2016). Importantly, this reduction is widely recognized as a physiological and adaptive response rather than a pathological condition. In women with adequate nutritional intake, skeletal recovery typically occurs after weaning through compensatory increases in bone formation, resulting in restoration of bone mass over time (Prentice, 2003; Kovacs, 2016; Kalkwarf & Specker, 2002). Evidence from longitudinal studies further suggests that repeated pregnancies and lactation cycles do not necessarily lead to cumulative bone loss when nutritional status is sufficient (Gulson et al., 2004).

The extent of these skeletal adaptations is strongly influenced by maternal dietary intake, particularly calcium and vitamin D status. Vitamin D is essential for maintaining calcium balance because it facilitates intestinal absorption of calcium and supports normal bone turnover processes (Holick, 2007; Rosen, 2011). When vitamin D levels are inadequate, calcium absorption efficiency decreases, which can affect both maternal skeletal protection and the calcium content of breast milk (Holick, 2007). Similarly, insufficient dietary calcium intake may intensify the reliance on skeletal calcium mobilization during lactation, potentially affecting the completeness of bone recovery after breastfeeding ends (Kovacs, 2016; Prentice, 2003). Although lactation prioritises

infant calcium needs through physiological adaptation, inadequate maternal nutrition may limit full restoration of bone mineral density, particularly in women with repeated reproductive cycles or poor dietary quality (Kalkwarf & Specker, 2002; Kovacs, 2016). Therefore, sufficient intake of both calcium and vitamin D is essential not only for maintaining breast milk quality but also for ensuring optimal recovery of maternal bone health following lactation (Rosen, 2011; Prentice, 2003).

3.2.3 Iodine and Neonatal Neurodevelopment

Iodine is a critical micronutrient required for the synthesis of thyroid hormones, thyroxine (T4) and triiodothyronine (T3), which are essential for normal brain development, particularly during the early postnatal period. These hormones regulate neuronal migration, synaptogenesis, and myelination of the central nervous system, all of which are fundamental processes in infant neurodevelopment (Zimmermann, 2009; Pearce et al., 2013). In the neonatal stage, adequate thyroid hormone availability is especially important because the brain undergoes rapid growth and structural organisation, making it highly sensitive to iodine deficiency (Bath et al., 2013).

According to Gunnarsdóttir and Brantsæter (2023), insufficient iodine intake and inconsistent use of iodised salt remain public health concerns in several Nordic and Baltic countries, including Estonia. This suggests that postpartum and lactating women may also be vulnerable to inadequate iodine intake, which may affect both maternal thyroid function and infant development.

Breast milk is the primary source of iodine for exclusively breastfed infants; therefore, maternal iodine intake directly determines neonatal iodine status (Dold et al., 2016; Zimmermann, 2009). In regions where dietary iodine intake is insufficient or where iodized salt is not consistently used, breast milk iodine concentration may fall below recommended levels, increasing the risk of suboptimal thyroid hormone production in infants (Andersson et al., 2007; Pearce et al., 2013). Even mild iodine deficiency during infancy has been associated with impaired cognitive development, including reduced IQ scores, delayed language development, and subtle deficits in memory and attention (Bath et al., 2013; Zimmermann, 2009).

Maternal dietary practices, including the regular use of iodized salt and consumption of iodine-rich foods such as seafood and dairy products, play a crucial role in maintaining adequate iodine levels during lactation (Dold et al., 2016). As infants are fully dependent on breast milk for iodine intake in early life, maternal iodine sufficiency becomes a key determinant of early neurodevelopmental outcomes (Zimmermann, 2009; Pearce et al., 2013). Therefore, ensuring adequate maternal iodine intake during lactation is essential for supporting optimal thyroid function and preventing preventable neurodevelopmental impairments in infants.

3.3 Socio-Cultural and Economic Determinants

In practice, nutritional knowledge alone does not determine a mother's dietary behaviour. A mother's eating habits are influenced by both her knowledge and her social and economic circumstances.

3.3.1 Cultural Food Taboos and "Confinement"

In several cultural systems, postpartum dietary guidance is shaped by traditional concepts such as "hot" and "cold" classification of foods, which are used to restore perceived bodily balance after childbirth. In many traditional systems, childbirth is considered a "cold" state requiring "hot" foods such as soups, meat broths, and warming spices to restore body balance. Conversely, foods classified as "cold," including certain fruits, vegetables, or dairy products, may be restricted during the postpartum period because they are believed to impair recovery or breast milk production. Bathula et al. (2023) reported that several postpartum mothers avoided nutrient-rich foods such as fruits, curd, and certain vegetables because of cultural beliefs regarding "cold" foods after childbirth. These practices are often rooted in long-standing cultural knowledge systems and may provide emotional reassurance, social support, and structured postpartum care for new mothers. However, from a nutritional standpoint, unnecessary restriction of diverse food groups may reduce dietary variety and limit intake of essential micronutrients if not carefully balanced with modern dietary recommendations. Therefore, while cultural postpartum food practices can play an important supportive role, they should ideally be considered alongside evidence-based maternal nutrition guidelines to ensure adequate intake during lactation.

3.3.2 Economic Dimensions of Food Autonomy

Financial limitations often make it difficult to apply nutritional knowledge in daily life. The higher cost of nutrient-dense proteins and fresh vegetables often makes affordable, starch-based processed foods the more accessible choice for many families. Studies show that even with nutritional knowledge, economic constraints can limit the ability of mothers to follow recommended dietary practices (Forh et al., 2022).

3.4 Defining Nutritional Knowledge and Literacy

In this thesis, nutritional knowledge is understood in two main forms:

1. **Declarative knowledge:** understanding nutritional facts (for example, knowing that iron is found in foods such as meat and legumes).
2. **Procedural knowledge:** understanding how to apply that knowledge in daily life (for example, separating iron supplementation from tea or coffee intake to avoid reduced absorption).

Research in maternal and public health nutrition shows that many women have a basic awareness of key nutrients but struggle to translate this knowledge into consistent dietary practices (Sharma & Sharma, 2018; Worsley, 2002). This gap between knowledge and behaviour has been widely reported in nutrition behaviour studies, where awareness does not always lead to dietary change due to factors such as cultural habits, time limitations, food availability, and misconceptions about food interactions (Contento, 2016; Shepherd, 2002). In maternal populations specifically, similar patterns have been observed, where mothers may recognize the importance of nutrients like iron, calcium, and folate, but fail to implement appropriate dietary strategies in everyday routines (Sharma & Sharma, 2018; Devine et al., 2007). This explains why micronutrient deficiencies can persist even in populations with moderate or adequate nutritional awareness.

3.5 Digital Health Literacy and Social Media influence

In the context of an increasing “information vacuum” in formal postpartum education and limited structured nutritional counselling after childbirth, many mothers increasingly rely on digital platforms and social media to obtain guidance on postnatal care and nutrition (Percheski & Hargittai, 2011; Pérez-Escamilla et al., 2021). These platforms are often the most accessible and immediate source of information, especially when healthcare follow-up is inconsistent or time-limited. As a result, social media has become a major source of maternal health and dietary advice during the postpartum period (Chauhan & Kumar, 2022).

However, the quality and reliability of online health information vary widely. While digital platforms can provide peer support and shared lived experiences, they also expose users to misinformation and commercially driven wellness content that is not always evidence-based (Chou et al., 2018; Suárez-Lledó & Álvarez-Gálvez, 2021). In particular, “fad diets” promoted through social media trends often lack scientific validation and may encourage unnecessary dietary restrictions, nutrient imbalances, or unrealistic postpartum body expectations. Importantly, such practices may not only be unsupported by evidence but can also be potentially harmful during lactation, when nutritional requirements are increased and maternal energy demands are high (Pérez-Escamilla et al., 2021). Inadequate or restrictive dietary patterns during this period may compromise maternal nutrient intake and overall health status.

This situation highlights the importance of digital health literacy, defined as the ability to access, understand, critically evaluate, and apply online health information appropriately (Norman & Skinner, 2006). Strengthening these skills enables mothers to distinguish between credible, evidence-based nutritional guidance and misleading or commercialized wellness trends. Improving digital health literacy is therefore essential to ensure that online information supports, rather than compromising maternal nutrition and infant health outcomes.

3.6 Summary of Literature Gaps

Existing research on maternal nutrition during lactation is still limited and often fragmented. Most studies tend to focus on infant outcomes, such as growth and weight gain, rather than exploring maternal nutritional knowledge and how it influences daily feeding practices. In addition, there is less attention given to how knowledge is translated into actual behaviour during the postpartum period. Because of these gaps, this scoping review aims to bring together and organise the available evidence in a structured way, with a specific focus on maternal nutritional knowledge during the postpartum period and its practical application.

4. Methodology

4.1 Study Design

This study was conducted as a scoping review with the aim of systematically mapping and summarizing the existing body of research on the nutritional knowledge of postpartum mothers. A scoping review methodology was considered the most appropriate approach because the topic itself is broad and includes studies with different designs, populations, and outcome measures across diverse geographical settings. Unlike a systematic review, which typically focuses on answering a very specific and narrowly defined question, a scoping review allows for a wider exploration of available evidence and helps identify key concepts, knowledge gaps, and trends within the literature.

In this study, the objective was not only to examine what is already known but also to understand how nutritional knowledge is being assessed and where inconsistencies or limitations exist. Therefore, adopting a scoping review approach made it possible to include a variety of study types and perspectives without restricting the scope too much.

The methodological process was guided by the framework developed by Arksey and O'Malley (2005), along with later refinements suggested by Levac et al. (2010), which emphasize clarity, rigor, and iterative review. In addition, the reporting of this review followed the PRISMA-ScR guidelines (Tricco et al., 2018) to ensure transparency and completeness in documenting each stage of the review process.

The review was carried out through five main stages, which were revisited when necessary:

- Identifying the research questions
- Searching for relevant studies in selected databases
- Applying eligibility criteria to select studies
- Extracting and organising key data

- Summarizing and presenting the findings

This approach is widely used for mapping broad research topics and identifying gaps in the literature (Arksey & O'Malley, 2005; Levac et al., 2010).

4.2 Objectives and Review Questions

Aim:

The aim of this scoping review is to map and analyse existing evidence on nutritional knowledge among postpartum mothers based on previously published studies.

Research Questions:

This review is guided by the following research questions:

RQ1: What is the level of nutritional knowledge among postpartum mothers reported across different geographical areas?

RQ2: What are the common gaps in postpartum mother's nutritional knowledge identified across different contexts?

4.3 Eligibility Criteria (PCC Framework)

The inclusion and exclusion criteria were developed using the Population Concept Context (PCC) framework. The PCC framework is commonly recommended for structuring scoping reviews and ensuring clarity in study selection (Peters et al., 2015). This framework helped ensure that the selection process remained consistent and aligned with the study objectives.

4.3.1 Inclusion Criteria

Population:

The postpartum period is traditionally defined as the first six weeks (42 days) following childbirth. However, for the purpose of this review, the scope was extended to include mothers up to six months postpartum. This extension is supported by literature that considers the postpartum period as extending beyond the initial six weeks, with

continued physiological and behavioural adaptation during the first six months after childbirth (World Health Organization, 2016; Pérez-Escamilla et al., 2021). This extended timeframe was selected to capture the transitional phase beyond immediate recovery, during which mothers begin to establish more stable dietary habits and adapt to ongoing physiological and lifestyle changes.

Concept:

The central concept of interest was nutritional knowledge. This included studies that assessed mothers' understanding of dietary requirements, food groups, nutrient functions, and specific nutritional needs during the postpartum and lactation period. Both general awareness and more detailed knowledge (such as micronutrient roles) were considered relevant.

Context:

The studies included in this review represented postpartum mothers from various geographical and socio-economic contexts. This diversity enabled comparison of nutritional knowledge across different settings, without restricting the evidence to a single country or region.

Study Designs:

Only peer-reviewed original research articles were included. This covered quantitative, qualitative, and mixed-methods studies to ensure a wide range of evidence.

Language:

Only studies published in English were included to ensure accurate interpretation and analysis.

4.3.2 Exclusion Criteria

The following types of studies were excluded:

- Studies focusing only on pregnant women or the antenatal period
- Interventional studies that did not assess nutritional knowledge either before or after the intervention

- Non-empirical publications such as review articles, editorials, commentaries, conference abstracts, and study protocols
- Studies where full-text access was not available

These criteria helped maintain the relevance and quality of the included studies.

The detailed inclusion and exclusion criteria applied in this review are presented in Appendix B

4.4 Information Sources and Search Strategy

A systematic literature search was conducted across four major electronic databases: PubMed/MEDLINE, Scopus, Web of Science, and CINAHL. These databases were selected due to their comprehensive coverage of medical, nursing, and public health research relevant to maternal nutrition.

The search process was carried out between 5th March 2026 and 15th March 2026. Studies published between 2011 and 2026 were included to ensure that the review reflects current evidence and contemporary clinical practices.

The search strategy was developed using a combination of keywords and Boolean operators to capture relevant studies. The main search terms included variations of “postpartum,” “postnatal,” and “puerperium,” combined with terms such as “nutritional knowledge,” “dietary knowledge,” and “nutrition awareness,” along with “mothers” or “women.”

Truncation symbols and Boolean operators were applied to broaden the search while maintaining relevance. Filters were used to limit results to human studies and English-language publications.

In addition to database searching, the reference lists of included studies were manually screened to identify any additional relevant articles that may not have been captured in the initial search. A complete description of the search strategy, including keywords and Boolean operators, is provided in Appendix A.

4.5 Study Selection and Data Management

All retrieved records were imported into Zotero reference management software, where duplicate entries were identified and removed. The study selection process was conducted in two stages to ensure a systematic and transparent approach.

In the first stage, titles and abstracts were screened to exclude studies that did not meet the predefined inclusion criteria. This initial screening helped eliminate clearly irrelevant articles and refine the pool of studies for further assessment.

In the second stage, full-text articles were reviewed in detail to confirm eligibility. Studies were evaluated based on the Population–Concept–Context (PCC) framework and their relevance to the research questions.

The study selection process was carried out by the primary researcher and independently reviewed by a second supervisor to enhance consistency and minimise potential selection bias. Any uncertainties or disagreements regarding study eligibility were discussed and resolved through consensus. The entire selection process was documented using a PRISMA-ScR flow diagram, providing a transparent overview of study identification, screening, eligibility assessment, and inclusion. The study selection process followed PRISMA guidelines, and a detailed summary is provided in Appendix C.

4.6 Data Extraction (Charting)

Data from the selected studies were extracted using a structured charting form created in Microsoft Excel. This approach helped ensure consistency and made it easier to compare findings across studies with different designs.

For each study, the following information was recorded:

- Author(s), year of publication, and country
- Study design and methodology
- Participant characteristics and sample size

- Areas of nutritional knowledge assessed
- Type of assessment tools used
- Key findings related to knowledge levels and gaps

This structured approach allowed for systematic organisation of the data while still capturing important details from each study. The data extraction framework used in this study is presented in Appendix D.

4.7 Data Synthesis and Analysis

The extracted data were analysed using a descriptive and narrative approach. Since the purpose of a scoping review is to explore and map the available evidence rather than to combine results statistically, no meta-analysis was conducted. Narrative synthesis is commonly used in scoping reviews to summarise findings and identify patterns across studies (Arksey & O'Malley, 2005; Levac et al., 2010).

The findings were grouped into themes based on the type of nutritional knowledge assessed and the patterns observed across studies. This thematic organisation made it easier to identify common trends, recurring gaps, and differences between populations.

Descriptive statistics for regional distribution and nutritional knowledge levels were calculated using participant-weighted percentages. This approach was used to better reflect the overall study population (N = 5,618) and to reduce the effect of differences in sample sizes across included studies.

Because the included studies used different questionnaires, assessment tools, and scoring methods, it was not possible to apply one standardized numerical classification system across all studies. Therefore, nutritional knowledge levels were interpreted descriptively based on the overall findings and conclusions reported in each study. Studies reporting generally good awareness and understanding of postpartum nutrition were classified as high knowledge, studies showing partial understanding or mixed findings were classified as moderate knowledge, and studies reporting poor awareness or major knowledge gaps were classified as low knowledge.

4.8 Ethical Considerations

As this study is based entirely on previously published research, ethical approval was not required. No primary data were collected, and there was no direct involvement of human participants.

However, ethical standards were maintained by accurately representing the findings of the original studies and properly acknowledging all sources. Care was taken to avoid misinterpretation or selective reporting of results.

4.8 Timeline of Research

Topic Selection and Planning: February 2026

Search Strategy Development: 01.03.2026 – 04.03.2026

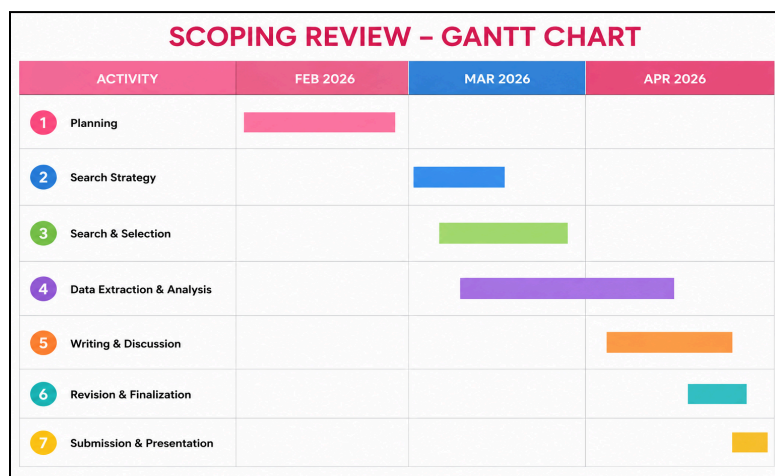
Literature Search and Study Selection: 05.03.2026 – 15.03.2026

Data Extraction and Analysis: 16.03.2026 – 04.04.2026

Report Writing and Discussion: 05.04.2026 – 20.04.2026

Revision and Finalization: 21.04.2026 – 28.04.2026

Final Submission and Presentation: 29.04.2026 – 30.04.2026



5. Results

5.1 Search Results and Study Selection

The initial search across PubMed, Scopus, Web of Science, and CINAHL brought up a total of 635 records. After taking out 188 duplicates, 447 unique records were left for the title and abstract screening. During this stage, 375 records were excluded because they didn't fit the Population Concept Context (PCC) framework mostly because they focused on pregnancy or didn't actually measure nutritional knowledge.

Out of the 72 full-text articles assessed for eligibility, 53 were excluded. The main reasons for this were a focus on clinical results instead of knowledge, studies without baseline data, or research that targeted healthcare staff rather than mothers. In the end, 19 studies met the criteria and were included in the review. A detailed summary of excluded studies and reasons for exclusion is provided in Appendix C.

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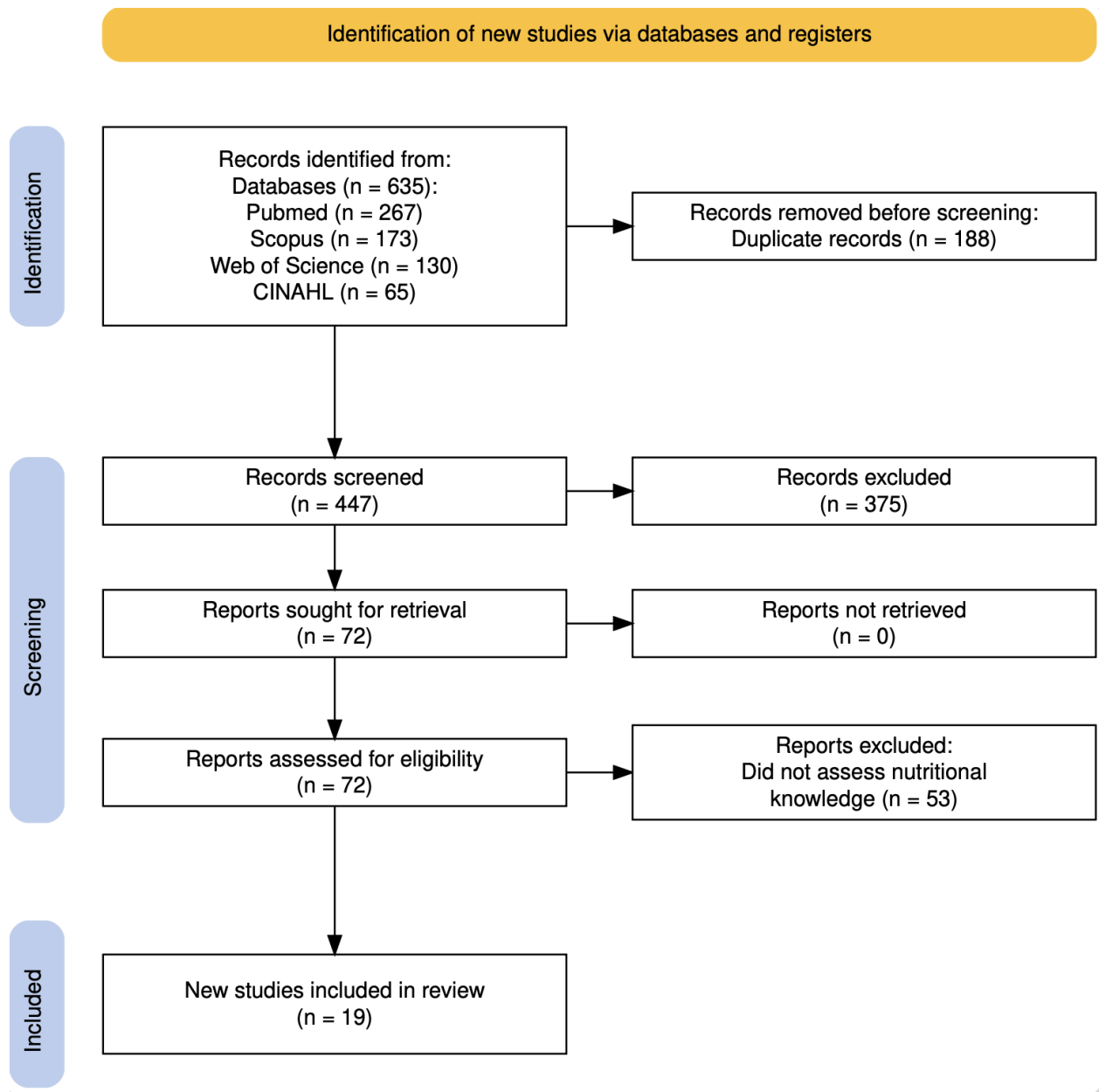


Figure 1: PRISMA flow diagram of study selection generated using the PRISMA flow diagram tool (https://estech.shinyapps.io/prisma_flowdiagram/)

5.2 General Characteristics of Included Studies

The 19 studies included in this review represent a wide range of geographical settings, with a substantial proportion conducted in South Asia (India and Bangladesh) and Africa (Ethiopia, Ghana, Nigeria, Eritrea, and Egypt). Additional representation from Southeast Asia was observed through studies conducted in Malaysia and Thailand. Higher-income country contexts were also included, with studies from Poland, South Korea, Türkiye, and Saudi Arabia.

In terms of study design, the majority of included studies employed a quantitative cross-sectional approach ($n = 13$), while only a small number used qualitative or longitudinal designs. Sample sizes varied considerably, ranging from 30 participants (Gomase & James, 2019) to 442 participants (Kim et al., 2019).

The included studies were published between 2014 and 2025, indicating continued research interest in maternal nutritional literacy over the past decade.

Most studies were classified according to their primary design to maintain consistency. Although some studies included elements of more than one methodology, categorising them based on their dominant approach allowed for clearer comparison across studies and simplified data interpretation.

Table 1: Summary of characteristics and key findings of included studies (n=19)

Author (Year)	Country	Study Design	Participant Description	Sample Size	Aim of Study	Key Findings / Outcome
Vijayalaxmi et al. (2014)	India	Cross-sectional	Postnatal mothers	122	Assess breastfeeding knowledge, attitudes and practices	Knowledge present, but gaps in practical application

Hasan et al. (2016)	Bangladesh	Cross-sectional	Mothers in pregnancy/postnatal period	337	Assess KAP on pregnancy and postnatal nutrition	Poor status linked to inadequate KAP
Beraki et al. (2017)	Eritrea	Cross-sectional	Postpartum mothers at discharge	250	Assess knowledge of postnatal care	Moderate knowledge; influenced by residence and education
Sharma & Sharma (2018)	India	Cross-sectional	Postnatal mothers	100	Assess KAP regarding breastfeeding	Awareness >60%; age influenced scores
Gomase & James (2019)	India	Descriptive survey	Postnatal mothers	30	Assess knowledge of postpartum food practices	53% average knowledge; 46% good knowledge
Kim et al. (2019)	Korea/China	Cross-sectional	Korean and Chinese postpartum women	442	Compare nutritional knowledge and behaviour	Korean mothers had higher overall knowledge
Sebeta et al. (2020)	Ethiopia	Cross-sectional	Postpartum mothers	359	Assess nutritional status and associated factors	10.3% underweight; linked to dietary diversity
Choudhary (2021)	India	Cross-sectional	Postnatal mothers	100	Assess breastfeeding KAP	96% knew breast milk is best; 63% knew initiation timing

Kalita-Kurz ynska (2021)	Poland	Cross-sectional	Mothers during lactation	103	Assess nutrition knowledge during lactation	Moderate knowledge; gaps in specific nutrient roles
Forh et al. (2022)	Ghana	Cross-sectional	Mothers/ caregivers	226	Assess nutritional knowledge and practices	61.5% had average knowledge; high EBF (66%)
Muktamath et al. (2022)	India	Descriptive/ intervention	Postpartum mothers	200	Assess postnatal care knowledge and utilisation	Moderate to low knowledge; improved with education
Alhamed et al. (2023)	Saudi Arabia	Cross-sectional	Mothers attending hospital	334	Assess breastfeeding knowledge, attitudes and practices	High initiation (88%); low exclusive breastfeeding (39%)
Bathula et al. (2023)	India	Qualitative	Postpartum mothers	Not reported	Explore nutritional experiences after childbirth	Cultural beliefs and harmful myths influenced diet
Mahmoud et al. (2023)	Egypt	Cross-sectional	Women/ postpartum mothers	300	Assess knowledge about postpartum care	Only 8% had good knowledge
Paliwal et al. (2023)	India	Quantitative descriptive	Postpartum women	100	Assess awareness and practices regarding postpartum diet	87% had average/poor knowledge and practices

Ananta et al. (2023)	Thailand	Longitudinal	Postpartum mothers during COVID-19	195	Assess KAP changes over 24 weeks	Knowledge and practice improved over time
Jalil et al. (2024)	Malaysia	Quantitative	Mothers	200	Assess KAP toward breastfeeding and complementary feeding	Moderate KAP; associated with maternal factors
Sari et al. (2025)	Turkiye	Cross-sectional	Breastfeeding women	264	Assess factors affecting nutritional behaviour and knowledge	60% received no education; social pressure exists
Sabo et al. (2025)	Nigeria	Cross-sectional	Mothers	400	Assess KAP of exclusive breastfeeding	Moderate knowledge/attitude; low practice (26.8%)

(Abbreviations: KAP = Knowledge, Attitude, and Practice, EBF = Exclusive Breastfeeding)

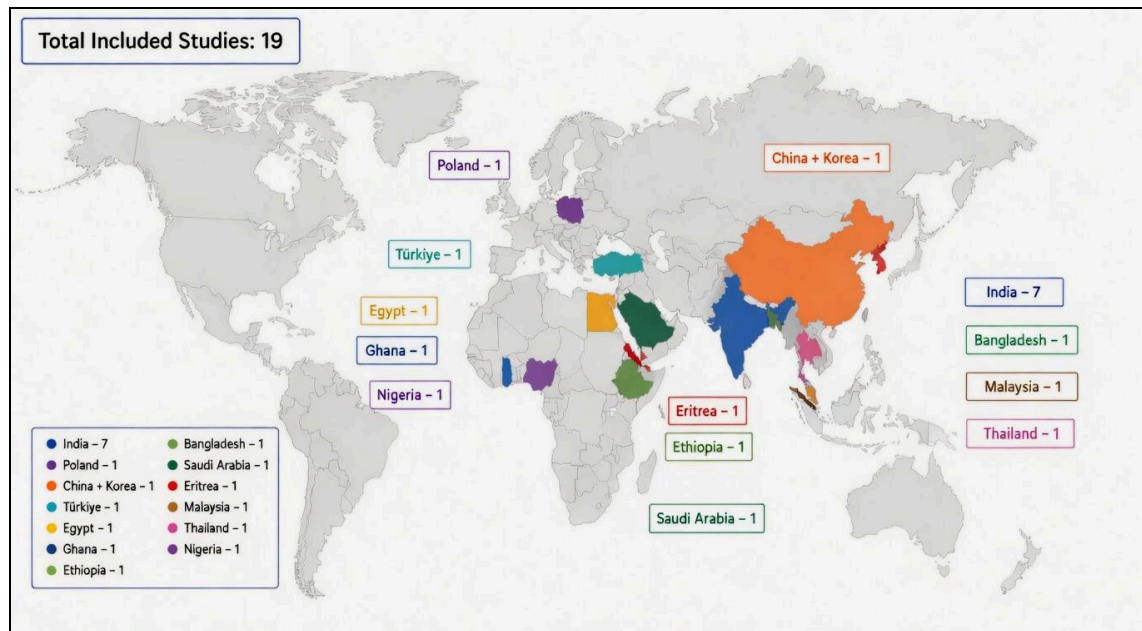


Figure 2: Geographic distribution of countries included in the paper selection

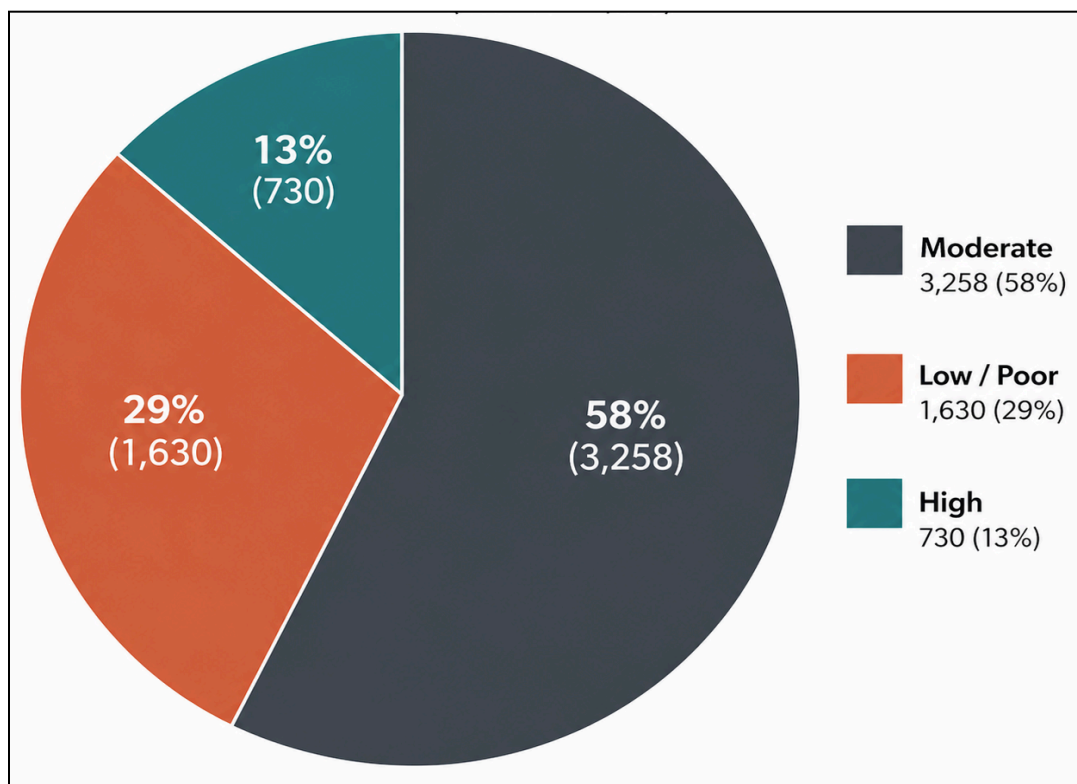


Figure 3: Distribution of maternal nutritional knowledge levels based on participant percentages (n = 5,618)

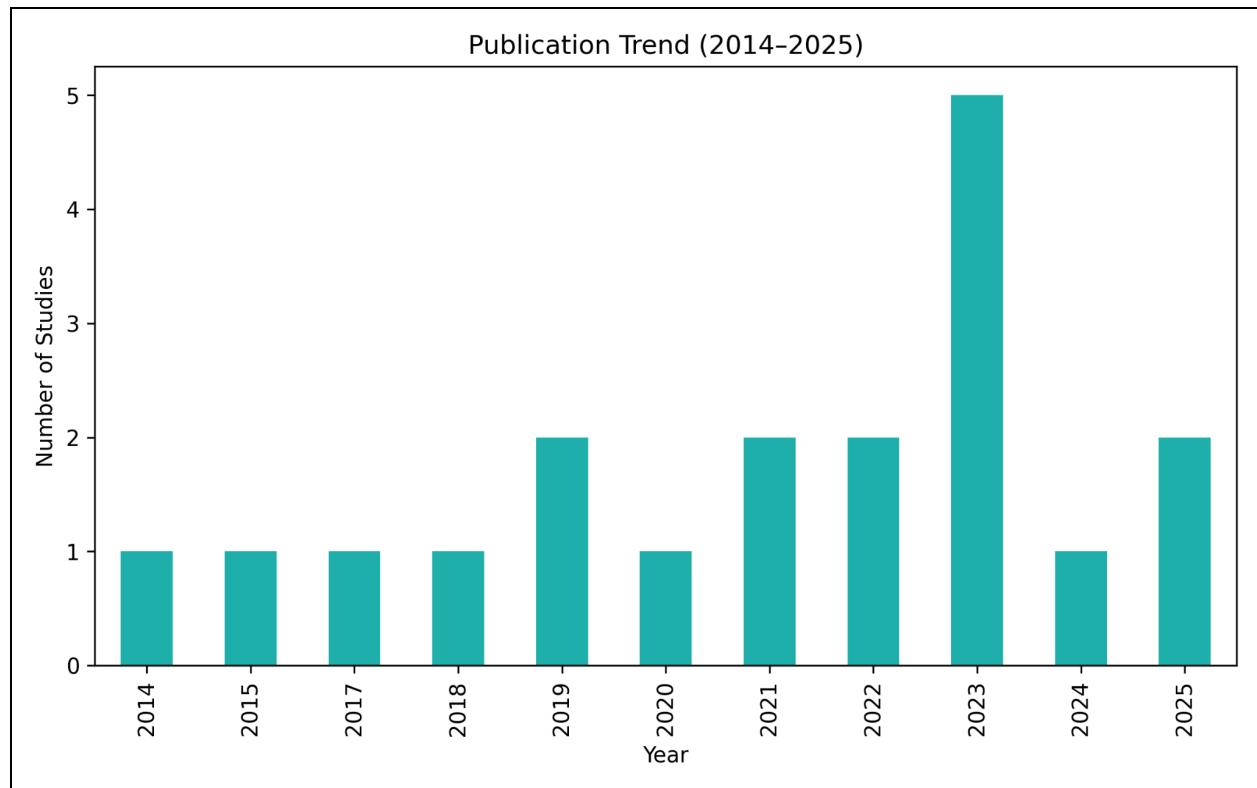


Figure 4: Publication trend of included studies (2014–2025)

5.3 Synthesised Findings: Domains of Nutritional Knowledge

The included studies identified three primary domains of postpartum nutritional knowledge: general postpartum nutrition, dietary practices and energy requirements, and micronutrient knowledge.

5.3.1 General Postpartum Nutritional Knowledge

Across studies, postpartum women generally demonstrated awareness that nutrition is important during the postnatal period. However, knowledge was predominantly broad and limited to general concepts of healthy eating rather than specific dietary recommendations (Choudhary, 2021; Beraki et al., 2017; Mahmoud et al., 2023).

Understanding of increased nutritional needs during postpartum recovery, including energy and macronutrient requirements, was inconsistent across settings (Paliwal et al.,

2023; Alhamedy et al., 2023). In addition, knowledge regarding practical dietary planning, such as structuring balanced meals during the postpartum period, was limited in several studies (Paliwal et al., 2023; Forh et al., 2022).

Geographical variation was evident, with differences in nutritional awareness observed across low-, middle-, and high-income settings, suggesting variation in health education access and delivery (Choudhary, 2021; Alhamedy et al., 2023).

5.3.2 Knowledge of Postpartum Dietary Practices and Energy Requirements

Findings indicated variability in maternal knowledge regarding dietary practices following childbirth. While most women were aware of the need to increase food intake during the postpartum period, specific knowledge regarding recommended dietary adjustments remained limited (Beraki et al., 2017; Paliwal et al., 2023; Forh et al., 2022).

Awareness of increased energy requirements, including lactation-related caloric needs, was inconsistently reported across studies (Paliwal et al., 2023; Forh et al., 2022).

Similarly, knowledge of appropriate meal frequency, portion size, and dietary diversity was limited in several contexts (Choudhary, 2021; Alhamedy et al., 2023; Paliwal et al., 2023).

5.3.3 Knowledge of Micronutrients and Health Outcomes

Across all included studies, the least understood domain was micronutrient knowledge. Awareness of key nutrients such as iron, calcium, and vitamin A was generally limited (Kalita-Kurzyńska, 2021; Paliwal et al., 2023; Hasan et al., 2016). Although some participants demonstrated general awareness of “healthy foods,” specific knowledge regarding nutrient sources and their role in maternal recovery was lacking (Beraki et al., 2017; Choudhary, 2021). This gap was consistent across multiple geographical settings.

Several studies specifically identified poor understanding of iron-rich foods, iron absorption, and the role of iron in preventing postpartum anaemia (Forh et al., 2022;

Paliwal et al., 2023). Limited awareness of calcium requirements during lactation and the relationship between calcium and maternal bone health was also reported (Kalita-Kurzyńska, 2021). In addition, knowledge regarding iodine and its importance for infant neurodevelopment was rarely addressed across studies, indicating a major gap in maternal nutritional education. Hasan et al. (2016) also observed inadequate nutritional knowledge associated with poor dietary practices among postpartum women. Overall, these findings suggest that postpartum nutritional knowledge is often limited to general dietary awareness rather than detailed micronutrient-specific understanding.

5.4 Levels of Nutritional Knowledge Among Postpartum Women

The findings show that although general awareness of nutrition exists among postpartum women, detailed and practical knowledge remains limited. This pattern was observed across different countries, suggesting that it is a common issue rather than something specific to one region. Based on the overall findings reported in the included studies ($n=19$), maternal nutritional knowledge was descriptively grouped into three levels: high, moderate, and low.

Because the included studies used different questionnaires, scoring systems, and assessment methods, there was no single standardized definition of “high,” “moderate,” or “low” nutritional knowledge across all studies. Therefore, the classification used in this review was based on descriptive interpretation of the findings reported by the original study authors. Studies were categorized as high knowledge when participants demonstrated generally accurate and comprehensive understanding of postpartum nutrition and dietary practices. Moderate knowledge referred to studies where women showed basic awareness of healthy eating and breastfeeding nutrition, but important gaps remained regarding micronutrients, balanced diets, or specific postpartum nutritional requirements. Low knowledge referred to studies reporting poor awareness, misconceptions, limited understanding of nutrient needs, or inadequate knowledge of healthy postpartum dietary practices. The classification was therefore based on the dominant patterns reported within each study rather than a standardized numerical scoring system.

Only a small number of studies were classified as showing high nutritional knowledge. These were mainly observed among women in South Korea/China (Kim et al., 2019), Saudi Arabia (Alhamedi et al., 2023), and Poland (Kalita-Kurzyńska, 2021), where participants often had higher education levels or better access to healthcare information. These studies were classified as high knowledge because participants demonstrated generally accurate understanding of healthy eating, breastfeeding nutrition, and dietary practices compared with other study populations. However, even in these studies, gaps remained regarding micronutrient requirements and dietary balance.

Most studies were classified as showing moderate nutritional knowledge. This was commonly observed in Malaysia (Jalil et al., 2024), Eritrea (Beraki et al., 2017), Ghana (Forh et al., 2022), and India (Muktamath et al., 2022). These studies were classified as moderate because women demonstrated basic awareness of breastfeeding and healthy eating practices, but important gaps remained regarding balanced diets, micronutrient needs, meal planning, and specific postpartum dietary requirements. This suggests that general awareness exists, but it is often not detailed enough to support appropriate dietary practices during the postpartum period.

Low levels of nutritional knowledge were mainly reported in settings with lower education levels or socioeconomic challenges, including Bangladesh (Hasan et al., 2016), India (Paliwal et al., 2023), and Ethiopia (Sebeta et al., 2020). These studies were classified as low knowledge because participants demonstrated limited understanding of postpartum nutritional requirements, poor awareness of nutrient-rich foods, and frequent misconceptions influenced by cultural beliefs and limited access to healthcare information. Such knowledge gaps may contribute to inadequate dietary practices and increased nutritional risk during the postpartum period.

When participant-level data were examined, most postpartum women demonstrated moderate nutritional knowledge (58%, $n=3,258$). Around 29% ($n=1,630$) had low knowledge, while only 13% ($n=730$) demonstrated high knowledge. This participant weighted approach provides a clearer understanding of the overall situation because it

reflects the total study population rather than only the number of included studies and reduces the influence of smaller studies on the overall findings.

Table 2: Categorization of postpartum nutritional knowledge levels and associated clinical implications (n=19)

Knowledge Level	Number of Studies	Basis for Classification	Main Findings and Implications
High	3	Studies reporting good awareness, higher knowledge scores, or generally adequate understanding of postpartum nutrition.	Reported in South Korea/China, Saudi Arabia, and Poland. Women generally had better education or healthcare access. However, gaps remained in micronutrient-specific knowledge and dietary balance.
Moderate	10	Studies reporting partial, average, or mixed understanding, where basic awareness existed but important gaps remained.	Most common category. Women often understood general healthy eating or breastfeeding nutrition, but had limited knowledge of balanced diets, energy needs, and micronutrients.
Low	6	Studies reporting poor awareness, inadequate understanding, or major misconceptions about postpartum nutrition.	Reported mainly in lower-resource or lower-education settings. Limited access to reliable information, cultural beliefs, and socioeconomic barriers may contribute to poor dietary practices.

This table presents findings at the study level. A participant-based distribution of

nutritional knowledge levels is already shown separately in Figure 3.

Additional methodological details, including search strategy, eligibility criteria, and data extraction tools, are provided in Appendices A–D.

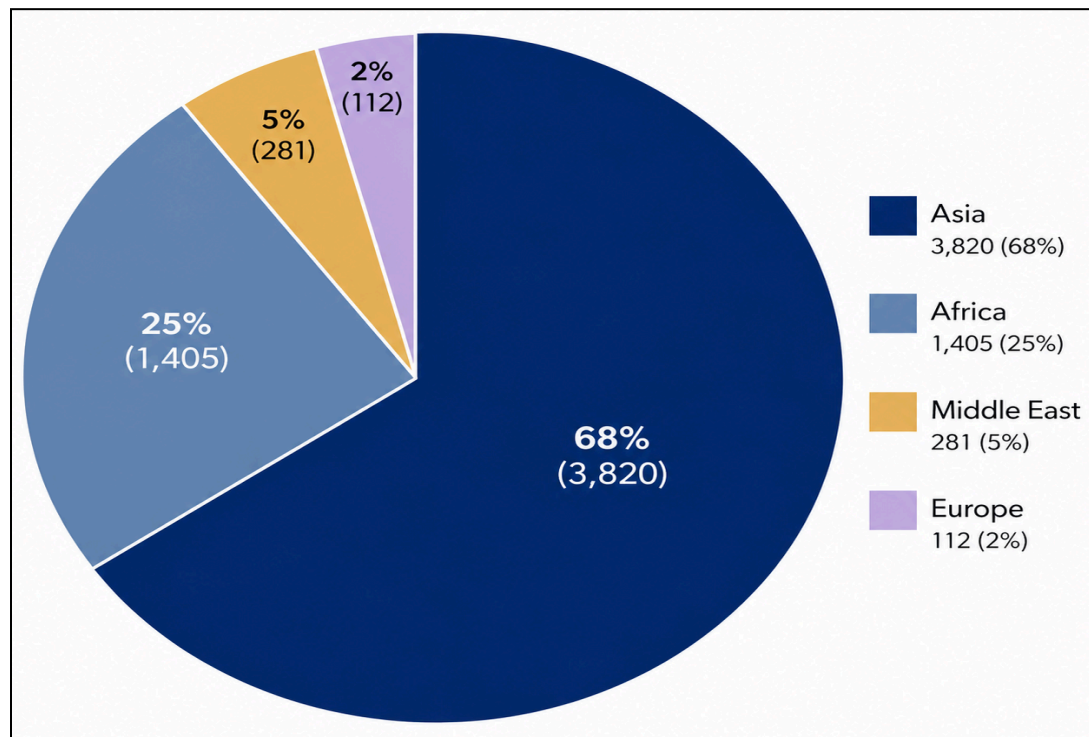


Figure 5: Regional distribution of participants across included studies (n = 5,618)

5.5 Differentiation Between General and Micronutrient Knowledge

Across the included studies, a clear distinction appeared between general nutritional awareness and more specific micronutrient-related knowledge. General nutritional knowledge typically refers to broad concepts such as the importance of an adequate diet during the postpartum period, awareness of food groups, and the need for increased dietary intake. This type of knowledge was relatively more common and was frequently reported as moderate across several studies (Jalil et al., 2024; Beraki et al., 2017; Forh et al., 2022).

In contrast, micronutrient-specific knowledge was assessed through more detailed indicators, including understanding of nutrients such as iron, calcium, and vitamin A, their dietary sources, and their role in maternal recovery and infant health. Studies that evaluated these aspects consistently reported lower levels of understanding compared to general nutritional awareness. For example, Kalita-Kurzyńska (2021) identified gaps in knowledge related to specific nutrient functions, while Paliwal et al. (2023) reported very low levels of comprehensive knowledge, with only a small proportion of participants demonstrating good understanding of postpartum care, including nutrition.

Similarly, Paliwal et al. (2023) found that although participants were generally aware of the importance of diet after childbirth, their knowledge of specific nutritional requirements and appropriate dietary practices remained limited. Choudhary (2021) also observed that while awareness of breastfeeding and general nutrition was relatively high, understanding of detailed nutritional recommendations was insufficient.

This distinction was further supported by studies highlighting a gap between knowledge and practice, where general awareness did not translate into appropriate dietary behaviour (Hasan et al., 2016; Muktamath et al., 2022). In many cases, participants were unable to identify specific nutrient sources or understand factors influencing nutrient absorption, particularly for micronutrients.

Overall, the findings indicate that while general nutritional awareness among postpartum women is relatively widespread, knowledge of micronutrient-specific requirements remains limited. This gap represents a critical area for improvement in maternal nutrition education across different settings.

6. Discussion

6.1 Analysis of Nutritional Knowledge Trends

The findings of this scoping review indicate a generally moderate level of postpartum nutritional knowledge across most geographical contexts, with clear variation between and within regions. Across the included studies, knowledge was primarily centred on general dietary awareness, while understanding of specific postpartum nutritional requirements such as nutrient adequacy, dietary diversity, and micronutrient intake remained limited (Beraki et al., 2017; Paliwal et al., 2023; Kalita-Kurzyńska, 2021).

As highlighted in Section 4.5, an important distinction was observed between general nutritional awareness and micronutrient-specific knowledge. While many women demonstrated awareness of the importance of a healthy diet during the postpartum period, fewer were able to identify specific nutrients, their dietary sources, or their role in maternal recovery and infant health. This suggests that the reported “moderate” knowledge levels in many studies may reflect general awareness rather than comprehensive nutritional literacy. In other words, women may know that nutrition is important, but they may not have enough practical knowledge to apply it in daily life.

Moderate knowledge levels were most commonly reported, suggesting that postpartum women are generally aware of the importance of nutrition but lack detailed, actionable understanding of dietary requirements during recovery (Jalil et al., 2024; Forh et al., 2022). Studies from India, Ghana, and Bangladesh consistently highlight this pattern, where basic awareness exists but does not translate into comprehensive nutritional literacy (Hasan et al., 2016; Muktamath et al., 2022; Forh et al., 2022).

A key finding across multiple settings is the presence of a knowledge–practice gap, where awareness does not necessarily lead to appropriate dietary behaviour (Sabo et al., 2025; Paliwal et al., 2023). This gap suggests that knowledge alone is insufficient to

ensure adequate postpartum nutrition, particularly in contexts where structural and socio-economic barriers exist.

Geographical comparisons further demonstrate disparities in nutritional knowledge. For example, studies from higher-income or urban settings such as Poland and Korea indicate relatively higher maternal nutritional awareness compared to lower-resource settings in parts of Africa and South Asia (Kalita-Kurzyńska, 2021; Kim et al., 2019). However, even in these higher-knowledge contexts, gaps in micronutrient-specific understanding persist, indicating that the issue is not solely resource-dependent but also linked to the depth and focus of nutrition education provided. An important observation is the limited number of studies from European and other Western countries. This is important because maternal nutrition challenges in these regions may be different, including issues such as overconsumption and ultra-processed foods, and this area remains under-researched.

6.2 Cultural, Socio-Economic and Structural Influences

The findings highlight that postpartum nutritional knowledge is strongly shaped by socio-cultural and economic factors across all settings. Cultural beliefs and traditional dietary practices continue to play a significant role in shaping maternal food choices, sometimes outweighing formal nutritional guidance (Bathula et al., 2023).

For example, Bathula et al. (2023) reported that postpartum mothers avoided nutrient-rich foods such as fruits, curd, and certain vegetables because these were perceived as “cold” foods after childbirth. This finding shows how cultural food classification can influence dietary choices and may reduce dietary diversity during the postpartum period. These findings suggest that nutritional knowledge is often filtered through culturally accepted frameworks, which can limit the uptake of evidence-based dietary practices.

Socio-economic status, education level, and place of residence were repeatedly identified as key determinants of nutritional knowledge (Beraki et al., 2017; Sebeta et al., 2020). Women with higher educational attainment and better healthcare access

demonstrated comparatively higher nutritional knowledge, whereas rural and lower-income populations showed persistent gaps in awareness (Hasan et al., 2016; Paliwal et al., 2023).

A particularly important finding is the presence of a “double burden” of malnutrition, where inadequate maternal nutrition coexists with increasing exposure to nutrition-related health risks across different settings. Studies from Ethiopia and Ghana highlight how limited dietary diversity and economic constraints contribute to this “dual burden” among postpartum women (Sebeta et al., 2020; Forh et al., 2022; Black et al., 2013)

In addition, structural barriers such as limited access to nutrition education services and healthcare information further exacerbate these inequalities. Even when some level of knowledge exists, financial constraints and food insecurity often prevent its practical application in daily dietary choices.

6.3 Methodological Heterogeneity and Evidence Limitations

A key methodological challenge identified across the included studies is the lack of standardisation in measuring postpartum nutritional knowledge. Most of the studies used cross-sectional designs with different questionnaires and scoring systems, which makes direct comparison difficult (Jalil et al., 2024; Beraki et al., 2017; Mahmoud et al., 2023). In addition, there were no consistently used validated tools across studies, making it difficult to compare the level of knowledge between different populations in a meaningful and standardised way.

Definitions of “moderate” or “good” knowledge also varied between studies, which further limits the ability to compare results across different settings. This variation reduces the overall comparability of findings and shows the need for more consistent and validated tools to assess maternal nutritional knowledge.

Despite these limitations, similar patterns were observed across different studies. The consistent findings related to gaps in micronutrient knowledge, dietary adequacy, and overall awareness suggest that these issues are common across different contexts

rather than limited to specific regions (Kalita-Kurzyńska, 2021; Paliwal et al., 2023; Forh et al., 2022).

6.4 Strengths and Limitations of the Review

Strengths :

This scoping review has several strengths. It includes studies from a range of geographical regions, which allows a broad overview of postpartum nutritional knowledge across different socio-economic and cultural contexts. The review includes studies from multiple regions; however, representation is uneven, with a strong concentration in Asia and limited data from Europe. The inclusion of 19 studies increases the amount of evidence and helps identify common patterns. Studies published within the last 15 years were included to ensure that the findings reflect relatively current knowledge and healthcare practices. The review followed a clear and structured method, which improved transparency and consistency in study selection and synthesis. This strengthens the reliability of the findings and helps in clearly identifying knowledge levels and gaps.

In addition, including both qualitative and quantitative studies allowed for a more complete understanding of maternal nutritional knowledge from different perspectives. Another strength is the inclusion of studies from both low- and high-income countries, which improves the overall relevance of the findings.

Limitations:

However, some limitations should be considered. Only English-language studies were included, so relevant research in other languages may have been missed, which could affect geographical representation. Most of the included studies were cross-sectional, which makes it difficult to understand relationships between knowledge and dietary behaviour. There were also differences in how nutritional knowledge was measured across studies, which made comparisons more difficult. In addition, a large proportion of participants came from Asia, while regions such as Europe and other Western countries were underrepresented, which may limit how widely the findings can be applied.

Despite these limitations, the overall findings remain consistent across different settings. Future research should focus on developing more consistent tools to assess maternal nutritional knowledge and include more studies from underrepresented regions such as Europe and other Western contexts.

7. Conclusion

7.1 Summary of Contributions

This scoping review provides a comprehensive synthesis of postpartum maternal nutritional knowledge across diverse geographical, socio-economic, and cultural settings. The overall findings indicate that postpartum women generally demonstrate a moderate level of nutritional awareness, but this knowledge is uneven and strongly influenced by education level, healthcare access, and socio-cultural context (Beraki et al., 2017; Sebeta et al., 2020; Forh et al., 2022).

A key contribution of this review is the identification of a consistent pattern of limited detailed nutritional knowledge, despite the presence of general awareness. While many women are aware that nutrition is important after childbirth, their understanding of specific requirements such as energy needs, dietary diversity, and micronutrient intake remains insufficient across most settings (Kalita-Kurzyńska, 2021; Paliwal et al., 2023).

The review also highlights a clear geographical variation in knowledge levels, with relatively higher awareness observed in some urban and higher-income contexts compared to rural and lower-resource settings (Kim et al., 2019; Forh et al., 2022). However, even in higher-knowledge populations, gaps in detailed maternal nutrition understanding persist, suggesting that the issue is not only resource-dependent but also linked to the content and delivery of health education.

Another important finding is the presence of a persistent gap in micronutrient-related knowledge, particularly regarding iron-rich foods, calcium requirements during lactation, and the role of vitamin A in maternal recovery and infant health (Kalita-Kurzyńska, 2021; Paliwal et al., 2023; Forh et al., 2022). This indicates that nutrition education often remains general and does not adequately

translate scientific recommendations into practical dietary guidance for postpartum women.

Overall, this review contributes to the evidence base by mapping global patterns of maternal nutritional knowledge and identifying consistent gaps that need to be addressed through targeted interventions.

7.2 Recommendations for Practice and Policy

Based on the findings of this review, several key recommendations can be made to improve postpartum maternal nutritional knowledge and its application in practice.

Strengthening Integrated Postnatal Nutrition Counselling

Postnatal care services may adopt a more structured and integrated approach that places maternal nutrition as a core component of postnatal care. The findings show that while general nutrition awareness exists, detailed knowledge of postpartum dietary requirements remains limited (Beraki et al., 2017; Paliwal et al., 2023). Therefore, healthcare providers should deliver clear, consistent, and practical guidance on energy needs, dietary diversity, and recovery-focused nutrition.

Maternal nutrition should be treated as a priority area within routine postnatal services rather than being delivered as general advice.

Improving Micronutrient-Focused Education

A major gap identified is the limited understanding of essential micronutrients such as iron, calcium, and vitamin A (Kalita-Kurzyńska, 2021; Paliwal et al., 2023). Education should therefore move beyond general dietary messages and focus on practical understanding of iron-rich foods, calcium requirements during lactation, micronutrient functions, and locally available nutrient sources.

This approach is particularly important for preventing postpartum nutritional deficiencies and supporting maternal recovery (Black et al., 2013). Nutrition counselling should be simplified, practical, and culturally appropriate so that it is accessible across different

education levels.

Community-Based Nutrition Education

Cultural beliefs and socio-economic conditions strongly influence maternal dietary behaviours (Bathula et al., 2023; Sebeta et al., 2020). Therefore, community-based education is essential to reinforce knowledge provided in healthcare settings.

Community health workers can play a key role in delivering consistent, home-based, and culturally sensitive nutrition education. This is particularly important in rural and low-resource settings where access to formal healthcare services may be limited.

Use of Digital Health Interventions

Digital health tools such as mobile messaging, short educational content, and mobile applications can improve access to nutritional information, especially in underserved populations (Pérez-Escamilla et al., 2016; Lassi et al., 2020; Feroz et al., 2017). These tools can support continuous learning beyond clinical visits.

However, such interventions should be adapted to local literacy levels, digital access, and cultural context. A combined approach involving both digital and community-based strategies may be most effective.

Policy-Level Improvements

Maternal nutrition should be more openly integrated into national postnatal care guidelines. While child health and infant feeding interventions often receive stronger policy attention, maternal nutritional recovery is still not consistently or systematically addressed across many health systems (WHO, 2013; Tougri et al., 2022). Evidence from multiple country-level policy analyses shows that nutrition components are often less detailed or less integrated compared to other maternal and child health services, leading to gaps in implementation at the service delivery level (WHO, 2013; Tougri et al., 2022). Strengthening policy focus on maternal nutrition would therefore improve

resource allocation, ensure more standardized counselling, and support better training of healthcare providers to address postpartum dietary needs effectively.

7.3 Final Conclusion

This scoping review highlights that maternal nutritional knowledge during the postpartum period is generally moderate but lacks depth and consistency across different populations. While awareness of healthy eating is widespread, detailed understanding of postpartum nutritional requirements including energy intake, dietary diversity, and micronutrient needs remains limited across global settings (Black et al., 2013; Paliwal et al., 2023; Kalita-Kurzyńska, 2021)

The findings also show that nutritional knowledge is shaped by a complex interaction of cultural, socio-economic, and healthcare-related factors. This means that even when knowledge exists, its translation into practice is often constrained by affordability, food availability, education level, and access to healthcare services (Sebeta et al., 2020; Kalita-Kurzyńska, 2021).

Importantly, cultural practices should not be viewed as barriers that must be eliminated. Instead, they should be respected and gradually integrated with evidence-based nutritional guidance in a way that is acceptable and realistic for mothers. In my opinion, the most effective approach is not to replace cultural practices entirely, but to adapt nutrition education so that it aligns with local beliefs while still promoting scientifically sound dietary recommendations (Bathula et al., 2023; Kavle et al., 2017).

Finally, improving maternal nutrition requires a multidimensional approach that goes beyond knowledge alone. Future interventions should combine education with structural support, including improved healthcare access, food security, and community-based reinforcement systems (Pérez-Escamilla et al., 2016; Lassi et al., 2020). In addition, the development of standardized and validated tools for assessing maternal nutritional knowledge is essential to improve comparability across studies and strengthen future research (FAO, 2018; Peters et al., 2015).

Overall, enhancing postpartum maternal nutritional knowledge requires a culturally sensitive, context-specific, and system-level approach that acknowledges the lived realities of women across diverse global settings.

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9. Appendix

9.1. Appendix A: Search Strategy

A comprehensive and systematic literature search was conducted to identify studies examining nutritional knowledge among postpartum women. The search was carried out in the following electronic databases: PubMed, Scopus, Web of Science, and CINAHL.

The search strategy used a combination of keywords and Boolean operators to ensure broad coverage of relevant literature:

("postpartum women" OR "postnatal mothers" OR "postpartum mothers") AND ("nutritional knowledge" OR "dietary knowledge" OR "maternal nutrition" OR "nutrition awareness") AND ("cross-sectional" OR "qualitative study" OR "survey")

The search was limited to:

- Studies published between 2011 and 2026
- English language publications
- Human studies

In addition, reference lists of included articles were manually screened to identify any additional relevant studies.

9.2. Appendix B: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Studies involving postpartum women (up to 6 months postpartum)	Studies focusing only on pregnancy
Studies assessing maternal nutritional knowledge or dietary awareness	Studies focusing exclusively on breastfeeding outcomes
Quantitative, qualitative, or mixed-method designs	Review articles, commentaries, editorials , Intervention studies that do not assess maternal nutritional knowledge
Peer-reviewed journal articles	Conference abstracts only
Studies published from 2011–2026	Studies published before 2011
English language studies	Non-English publications

9.3. Appendix C: Study Selection Process (PRISMA Summary)

The study selection process was conducted in accordance with PRISMA guidelines to ensure transparency and reproducibility of the search strategy and screening process.

A total of 635 records were identified from four databases: PubMed (n = 267), Scopus (n = 173), Web of Science (n = 130), and CINAHL (n = 65). After removing 188 duplicate records, 447 records remained for title and abstract screening.

During the screening phase, 375 records were excluded as they did not meet the inclusion criteria. A total of 72 full-text articles were assessed for eligibility. From these, 53 studies were excluded as they did not assess maternal nutritional knowledge.

Finally, 19 studies met all inclusion criteria and were included in the final scoping review synthesis.

The study selection process is illustrated in Figure 1 (PRISMA flow diagram).

9.4. Appendix D: Data Extraction Process

Data were extracted from all included studies using a structured approach. For each study, the following information was recorded:

- Author(s) and year of publication
- Country of study
- Study design
- Sample size and participant characteristics
- Aim of the study
- Key findings related to maternal nutritional knowledge levels and gaps

The extracted data were used to identify patterns in knowledge levels (high, moderate, and low) and to compare findings across different geographical and socio-economic settings. This process supported a clear and structured synthesis of the evidence in line with the review objectives and research questions.