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Mapping Risk Factors Associated with Breast Engorgement Among Postpartum Mothers: A Scoping Review

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Abstract

Among the most frequent postpartum breastfeeding problems, breast engorgement increases the chance of mastitis as well as causes maternal pain and breastfeeding disruptions.
Study of its contributing elements has included several frameworks and methods.
This scoping review aimed to present a full view of the risk factors for breast engorgement in women following birth.
Based on the PRISMA-ScR approach, the scoping review was undertaken.
Using several electronic databases, including Google Scholar, ScienceDirect, Wiley, and PubMed, a literature study on the publications between 2015 and 2025 was done.

Qualifying studies investigated the factors linked to breast engorgement in postpartum women.
The data were mapped and thematically arranged.
Maternal traits, socioeconomic and living environment, infant-related factors, breastfeeding habits, maternal awareness and beliefs, social and family support, health systems and professional assistance, and cultural and traditional practices all influence breast engorgement, a multifactorial condition found in this study.
The most constant contributing elements were determined to be too little professional support, inadequate milk removal, little maternal knowledge, and insufficient breastfeeding initiation.
It is important to understand that systemic, cultural, and behavioral elements all affect breast engorgement, therefore it is a public health problem.
Multidisciplinary, context-sensitive actions are needed to prevent breast engorgement and encourage the greatest breastfeeding outcomes.

Keywords: breast engorgement, postpartum mothers, breastfeeding, risk factors, scoping review

INTRODUCTION

Milk stasis, often known as breast engorgement, is a lactation-related condition in which breast milk builds up beyond normal, causing breast discomfort, agony, and strain as well as nursing difficulties (WHO, 2022).
Milk stasis is a frequent early problem during lactation that affects between 15 and 50% of breastfeeding women worldwide and it has the potential to develop into mastitis if not treated appropriately (WHO, 2022).

Reports from the United States have also noted elevated breast engorgement incidence rates.
The survey findings displayed a constant pattern independent of sample size change.
Subsequent statistics on 12,474 and 10,243 postpartum mothers showed prevalence rates of 66.87% and 66.34%, respectively, demonstrating that breast engorgement is still a major problem for nursing mothers.
87.05% of the 15,760 postpartum women surveyed had obstructed milk ducts.
(Ulfah & Galaupa, 2025).

Data from the area reveal that Southeast Asia also has a high incidence of breast engorgement.
A 2019 ASEAN analysis counts 107,654 postpartum women in the ten member nations (Solihah et al., 2023).
From roughly 66.87% in 2020 to 71.1% in 2021, the incidence of clogged milk ducts among nursing mothers grew.
Particularly, Indonesia's 37.12% prevalence rate emphasizes significant geographical variances in breastfeeding-related challenges (Solihah et al., 2023).

According a pathophysiological approach, breast engorgement is brought on by disturbed venous and lymphatic circulation inside the breast tissue that causes decreased milk flow and raised pressure within the milk ducts and alveoli (Perangin Angin, 2020).
This disease is mostly caused by the milk accumulating that is not adequately drained from the breast.
Clinically showing as breast swelling, warmth, hardness, and discomfort, breast engorgement may be accompanied by a small increase in the mother's body temperature, reaching roughly 38degC (Perangin Angin, 2020).

Typically, breast engorgement happens on the second or third day after delivery as milk supply begins to increase.
The most typical causes of this illness are insufficient breast milk production, often caused by inadequate feeding frequency or duration, milk production surpassing the breast's emptying ability, delays in starting breastfeeding, bad mother-infant connection, or limited breastfeeding time (Nurjannah, 2024).

Even without a fever, the increased intraductal pressure brought on by milk buildup and clogged milk ducts makes the breasts feel tight, painful, and swollen.
The edema can also make the areola firm and less pliable, which would make attachment and suckling challenging for the infant.
Left untreated, breast engorgement can cause more major diseases like mastitis or a breast abscess as well as severely impair the continuation of nursing and the effectiveness of exclusive breastfeeding (Ulfah & Galaupa, 2025).

Because breast engorgement has a great prevalence, complex etiology, and significant effects on mother comfort,

breastfeeding efficacy, and the maintenance of exclusively breastfed, a thorough synthesis of the current evidence is required immediately.
Differences in maternal characteristics, nursing practices, cultural expectations, and healthcare system resources throughout settings further underscore the complexity of this disease and the disadvantages of segmented, single-factor-oriented therapies.
Consequently, this scoping review was carried out to methodically compile available evidence on risk elements associated with breast engorgement in postnatal mothers.
By synthesizing results from different countries, research techniques, and cultural backgrounds, the review aims to provide a thorough grasp of breast engorgement and to assist in the development of context-appropriate multidisciplinary treatments that would maximize nursing outcomes.

METHODS

This scoping review sought to offer a complete map of the present research on the factors affecting breast engorgement in postpartum women including those from maternal, infant, behavioral, cultural, and health system influences.
Because it allows a systematic analysis of a huge and varied literature corpus, the scoping review method was chosen to facilitate the identification of important concepts, trends, and research gaps in a difficult clinical and public health problem.

To ensure openness and methodologically exactness, this investigation was designed and written in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) guidelines (PRISMA, 2020).
Subjects like breast engorgement, where the evidence spans several research methodologies and academic perspectives and a thorough mapping of determinants is needed as opposed to effect estimations, benefit most from scoping reviews (Peters et al., 2021).

This scoping review employs Arksey and O'Malley's methodological framework, which has been modified according to later methodological recommendations.
Five sequential phases comprised the review process: (1) generation of the research question, (2) identification of pertinent studies, (3) selection of qualified studies guided by predetermined inclusion and exclusion criteria, (4) data extraction and record of essential information from included studies, (5) synthesis, integration, and narrative report of findings.
Using this organized technique, the review synthesized the data and offered an integrated view of the many risk variables influencing postpartum breast engorgement in women in several healthcare settings and environments.

Defining the Research Question

Based on the Population-Exposure-Outcome (PEO) framework as shown in Table 1, the research question directing this scoping review was: "What variables have been found in the literature to be connected with breast engorgement in postpartum mothers?"

Table 1.
PEO Framework

P (Population)
E (Exposure)
O (Outcome)
Mothers nursing or just beginning to breastfeed after delivery.
Several variables affect the accumulation of breast milk that causes breast engorgement.

Postpartum breast swelling.

A comprehensive search of the literature was undertaken in the four major online sources: Google Scholar, Wiley Online Library, ScienceDirect, and PubMed.
The search sought for relevant studies examining factors related to breast engorgement in postpartum women.
Articles released between 2015 and 2025 were included so as to give a thorough picture of historical and current data.

Medical Subject Headings (MeSH) and free-text keywords were both used in the search method.
Boolean operators were applied as follows: postpartum mothers OR nursing mothers OR breastfeeding mothers AND breast engorgement OR breast congestion AND risk variables OR determinants OR associated variables AND breastfeeding techniques OR sociocultural elements OR health system factors.
Making search changes specific to each platform's indexing system, the data retrieval was adjusted.

The inclusion and exclusion criteria for papers included in this review are as follows:

Table 2.
Inclusion and Exclusion Criteria

Inclusion Criteria

Exclusion Criteria

Peer reviewed original research paper (quantitative, qualitative, or mixed design)

Focus on nursing or moms who have recently given birth.

Investigate the breast engorgement's risk elements, causes, or associated variables.

Composed in English

Complete text is available.

Released between 2015 and 2025

Review conference abstracts, protocols, comments, reviews, or articles.

Research done on those who are not postpartum

Unfinished articles

Recognizing Relevant Research

Doing a complete literature search in four electronic databases ScienceDirect, Wiley Online Library, Google Scholar, and PubMed yields a total of 3,571 original papers.
Based on title and abstract, the other records were then evaluated to see whether they came inside the purview of this study.

According to defined inclusion and exclusion criteria, the whole article texts were downloaded and analyzed for suitability.

Studies were eliminated at this time for causes including irrelevance to breast engorgement, participation of non-postpartum populations, or methodological ambiguity.
Eleven objects met the inclusion criteria as a result of this rigorous selection process and were included in the ultimate synthesis.

To ensure the openness and reproducibility of the scoping review strategy, a PRISMA flowchart shown in Figure 1 systematically shows the whole study selection process.

Figure 1.
PRISMA Flowchart

RESULTS

Selecting the Right Studies

Acquired during this scoping study, the data focused on factors related to postpartum breast engorgement, such maternal traits, feeding techniques, infant-related variables, societal influences, and health system support.
After conducting a comprehensive literature search across numerous internet databases, a large number of original papers were discovered.
Following title and abstract screening as well as duplicate removal, full-text papers were evaluated for suitability based on accepted inclusion and exclusion guidelines.

Only 11 papers met the inclusion criteria and were finally combined as a result of this careful picking procedure.
Written in English and spanning a wide spectrum of geographical regions, including low, middle, and high income countries, the studies included covered between 2015 and 2025.
The selected papers exhibit methodological diversity as well, including cross-sectional studies, cohort research, and qualitative research techniques.

Table 3 (Data Charting) offers a summary of the key characteristics of the chosen studies authors, country of origin, research objectives, research approach, data collecting methods, and main findings.
The diversity of research environments and techniques that support the thematic synthesis of risk factors related to breast engorgement in postpartum women is summarized in this table.

Table 3.
Data Charting

No

Author/Year

Country

Objectives

Design

Methods

Result

1. (Wepeba et al., 2025)

Ghana

Among 320 randomly selected nursing and midwifery employed in a major hospital, to assess the factors influencing exclusive breastfeeding conduct.

Cross-sectional

An analytical cross-sectional study was conducted among 320 randomly selected nurses and midwives who were breastfeeding in four public hospitals in Tamale City, Ghana.
Data were collected using a pre-tested structured questionnaire administered through face-to-face interviews, covering sociodemographic characteristics, knowledge, attitudes, and exclusive breastfeeding practices.
Data analysis was performed using STATA version 17, using descriptive statistics and binary logistic regression (crude and adjusted odds ratios), with a statistical significance level set at $p < 0.05$.

Even though over half of the participants solely breastfed, the preponderance of positive attitudes coupled with inadequate knowledge highlights a significant chasm that exposes mothers to the danger of using incorrect breastfeeding techniques; Insufficient breast emptying results from limited knowledge of successful attachment, breastfeeding frequency, and early identification of lactation problems combined with socioeconomic constraints, parity, infant age, and the presence of postpartum complications, hence increasing the likelihood of breast engorgement and hence upsetting breastfeeding continuity and adding to early cessation of exclusive breastfeeding.

2. (Ogbo et al., 2017)

Australia

To study the prevalence and causes of early discontinuation of exclusive breastfeeding in a linguistically and culturally varied community in Sydney, New South Wales, Australia.

Prospective cohort

First-time expectant mothers in Australia were recruited during their pregnancy and followed following birth for a cohort study.
Information on the beginning of breastfeeding, first breastfeeding experiences, and consequences connected to breastfeeding was gathered via an organized, self-completed survey.
To identify variables associated with breastfeeding difficulties, the statistical assessment used descriptive statistics and multivariate regression analysis, presenting results as adjusted effect estimates.

Exclusive breastfeeding is commonly practiced at birth and when leaving the hospital, but it drops sharply shortly after childbirth.
Factors such as the mother's young age, smoking during pregnancy, psychological hardships, low economic status, and insufficient support from partners are major indicators of early stopping of exclusive breastfeeding, resulting in breast fullness and the end of exclusive breastfeeding..

3. (Purwaningsih & Sudarmi, 2024)

Indonesia

To explore the association of contributing factors with exclusive breastfeeding.

Cross-sectional

An observational study that employed a cross-sectional design was conducted, where 84 mothers were chosen from a larger sample of 127 mothers, all of whom were breastfeeding infants aged 6-12 months, using systematic random sampling methods.
Data was collected from the mothers using a questionnaire that was comprehensive, enabling the researcher to assess the mothers' knowledge, the timing of the commencement of breastfeeding, their confidence, their drive, cultural practices, and the support received from family members.
The analysis of the collected data was done using both descriptive and bivariate analysis, employing the chi-square test at an alpha value of 0.05.

This shows that the absence of knowledge among mothers, delayed or absent initiation of breastfeeding, low self-esteem and motivation for breastfeeding, non-supportive social norms, and inadequate family support may indirectly increase the risk of breast engorgement.
This is because of their effects on the frequency and effectiveness of breastfeeding, resulting in inadequate breast emptying, milk accumulation, pain among mothers, and difficulties in maintaining exclusive breastfeeding in the early postnatal period.

4. (Ahmad Rahimi et al., 2020)

Afghanistan

To determine the elements that affect the exclusive breastfeeding habits of mothers in Kandahar, Afghanistan.

Cross-sectional

In this research, a cross-sectional analytical research design was used.
This was done in Kandahar, Afghanistan.
Information was collected from the respondents through a standard questionnaire developed by the research team.
This was administered to 1,028 mothers who had children below two years of age and who had visited seven healthcare centers within a period of six months from June to November 2018.
Data analysis was done using SPSS version 22.

These findings suggest that inappropriate exclusive breastfeeding practices, such as the premature initiation of solid foods, the use of pacifiers, and the administration of substances other than milk, as well as low socioeconomic status, urban lifestyle, gender-based breastfeeding practices, and the consumption of sedatives, result in irregular and inefficient breastfeeding practices.
This, in turn, makes the chances of the mothers experiencing problems such as insufficient milk removal, milk stasis, and breast swelling even higher.
Conversely, the routine practice of breastfeeding, along with the consumption of expressed breast milk, acts as a preventive mechanism against the inefficient removal of milk, as well as breast swelling.

5. (Rapingah et al., 2021)

Indonesia

To identify elements related to the practice of exclusive breastfeeding among healthcare professionals.

Cross-sectional

A cross-sectional observational study was conducted among 85 female health professionals with infants aged 6 to 24 months in 10 community health centers in East Jakarta, where a structured questionnaire was used to obtain data on factors that contribute to, promote, and support exclusive breast feeding.

The analysis of the data obtained was performed through the use of the univariate, bivariate (chi-square test), and multivariate logistic regression methods, specifically the backward stepwise method, to identify the significant factors.

These findings suggest that although the rate of exclusive breastfeeding among female primary health care providers is relatively average, the lack of maternal understanding and the age of mothers, although having a generally positive attitude and support from family, friends, and professionals, is a major factor in the cessation of breastfeeding.
This is due to the lack of understanding and lack of hands-on experience, making it difficult to lactate effectively, increasing the chances of breast engorgement, and ultimately leading to the premature cessation of exclusive breastfeeding.

6. (Joseph & Earland, 2019)

Nigeria

To examine

Sociocultural factors influencing the practice of exclusive breastfeeding among mothers in rural areas.

Qualitative study

The research methodology that will be used in this research is the qualitative method, which is based on the interpretive social constructivism perspective.
The information will be obtained through detailed semi-structured interviews conducted with 20 mothers aged 18-39 years, carefully selected from the two local government areas in Katsina state, Nigeria.
The data analysis will be conducted through the thematic content analysis method.

Sociocultural factors, family factors, and customs also play an important role in the initiation and continuation of breastfeeding practices among rural mothers.
When these factors contribute to the initiation of breastfeeding late, insufficient breastfeeding, and supplementation, it leads to inadequate milk drainage, thereby increasing the risk of breast engorgement, which further endangers the continued practice of exclusive breastfeeding.

7. (Mohamed et al., 2020)

Kenya

To evaluate elements linked to the practice of exclusive breastfeeding among mothers visiting Wajir County Hospital in Kenya.

Qualitative study

Data was collected through conducting focus group discussions with the mothers of infants below the age of six months, as well as conducting interviews with the healthcare staff at Wajir County Hospital.
A total of eight focus group discussions with 72 mothers and nine interviews with the healthcare staff were conducted using both purposive and random sampling methods.
The data collection instruments were pre-tested, and the discussions were taped with the consent of the participants.
The collected data was analyzed using thematic content analysis to emphasize the important issues regarding exclusive breastfeeding.

These are the insufficient exclusive breastfeeding practices that may lead to various serious health problems.
Delayed initiation of breastfeeding, less frequent breastfeeding, and the early introduction of other fluids may affect the normal emptying of the breast, increase the risk of excessive milk buildup, and increase the risk of breast engorgement.

In addition, cultural influences that hinder exclusive breastfeeding, such as deeply ingrained beliefs, strong family influences, and insufficient support from healthcare professionals, may indirectly affect the development or maintenance of breast engorgement among new mothers.

8. (Alyousefi, 2021)

Saudi Arabia

To explore the elements linked to effective exclusive breastfeeding among mothers in Saudi Arabia.

Cross-sectional

A cross-sectional survey-based research was conducted among mothers attending a family medicine clinic in Saudi Arabia, and the objective was to identify factors that impact exclusive breastfeeding.
The key focus was exclusive breastfeeding practices, while the independent variables were sociodemographic factors of mothers, ease of breastfeeding in public places, awareness and perception about breastfeeding, past experiences of successful breastfeeding, and plans during pregnancy.
Data collected from 322 participants were analyzed, and the variables that are associated with successful exclusive breastfeeding were identified using bivariate analysis and multinomial logistic regression analysis.

In 322 mothers, the low prevalence of exclusive breastfeeding at 28% was closely related to attitudes towards insufficient supply of breast milk, discomfort with breastfeeding in public or social situations, lack of access to breastfeeding-supportive environments, weak commitment to exclusive breastfeeding during prenatal periods, and cessation of breastfeeding when the mother herself was ill, which caused inconsistent or premature cessation of breastfeeding, thereby failing to completely empty the breast, resulting in milk accumulation and increasing the risk for engorgement, thereby impairing the effectiveness of exclusive breastfeeding.

9. (Kandeel et al., 2018)

Egypt

To examine the social, maternal, and infant factors that impede the practice of exclusive breastfeeding during the first six months of life.

Retrospective cohort

A comparative research using a review-based approach was carried out, and the study included 827 babies ranging from 6 to 24 months of age.
The participants were chosen from various pediatric clinics and well-baby clinics in Cairo, Egypt.
The participants were divided into various groups depending on the type of feeding they received during the first six months of life.
The information was collected using a detailed questionnaire that included various questions regarding the mothers, the children, obstetric, and socioeconomic factors.
The data analysis included descriptive statistics, chi-square tests, odds ratios, and logistic regression, with a significance level set at p.

These findings show that elements like the mother's background, characteristics of the baby, and issues that increase the possibility of mixed or formula feeding, like a younger age for mothers, first-time mothers, multiple children, unmarried mothers, premature birth, cesarean delivery, and neonatal intensive care, create irregular and interrupted breastfeeding practices.
This consequently creates issues like improper emptying of the breasts, milk buildup, and engorgement that impede the continuation of exclusive breastfeeding in the initial six months of life.

10. (Mundagowa et al., 2019)

Zimbabwe

To investigate the factors related to mothers, infants, homes, surroundings, and culture, which affect exclusive breastfeeding practices in Gwanda District.

Cross-sectional

The data was obtained through questionnaires filled in by 223 mothers of 6-12-month-old babies attending health facilities and EPI service delivery points in Gwanda District.
The data was analyzed using descriptive statistics, bivariate analysis, and multivariate regression analysis for factors that determine exclusive breastfeeding (EBF), as well as thematic analysis of responses from key informant interviews.

These findings suggest that a significant difference between what the mothers know and their actual practice of exclusive breastfeeding is associated with the inconsistency and insufficiency of milk expression.
This is particularly the case when the practice of adding water and other liquids at the beginning of breastfeeding has become widely accepted, increasing the risk of milk accumulation and breast swelling.
The risk of the aforementioned problems is particularly high in young mothers with lower birth weights and those experiencing economic difficulties.
Furthermore, the absence of financial independence and the presence of significant cultural demands hinder the continuation of exclusive breastfeeding and increase the problem of breast swelling, which is a significant factor in the early discontinuation of breastfeeding.

11. (Asare et al., 2018)

Ghana

To assess the breastfeeding practices, as well as the sociodemographic factors, which influence exclusive breastfeeding practices, among mothers who visit the child welfare clinic in Manhean, within the Tema East Sub-Metropolitan Area, in the Greater Accra Region of Ghana.

Cross-sectional

The data was collected using direct interviews with a standardized questionnaire, aiming at 355 mothers who breastfed children aged 0 to 24 months at the Manhean Child Welfare Clinic in Ghana.
A simple random sampling method was employed, and the data was analyzed using descriptive statistics as well as univariate and multivariate logistic regression to identify factors associated with exclusive breastfeeding in line with WHO infant feeding recommendations.

Despite high levels of maternal awareness and early initiation of breastfeeding, persistent suboptimal breastfeeding practices, especially bottle-feeding and complementary feeding practices, affect effective breast emptying, leading to milk stasis and breast engorgement.
Moreover, maternal age and sociocultural factors play an important role in these practices, emphasizing that suboptimal breastfeeding practices are an important indirect pathway in the causation of breast engorgement in postpartum mothers.

Critical Appraisal

The methods employed in the studies included were found to be good in terms of their quality through the application of the Joanna Briggs Institute (JBI) critical appraisal tool.
The tool uses different checklists for different types of studies.

The critical appraisal tool evaluation revealed that all the studies had good methods with good internal and external validity and a good research framework (JBI, 2025).

The types of evidence found were cross-sectional and cohort studies that employed good statistical methods such as logistic regression and multivariate analysis for the evaluation of factors related to breast engorgement in mothers after delivery.
In addition, qualitative studies employed good methods for conducting in-depth interviews and thematic analysis for the evaluation of factors related to the experiences and culture of the community and the family for understanding breastfeeding practices.
The variety in the methods employed for the evaluation of the evidence provided in this scoping review was good.

In the various research investigations, the common theme that emerged was that the engorgement of breasts is influenced by a complex interplay of factors, which include the mother's level of understanding and attitude, the promptness and regularity of breast-feeding, the level of support from family and partners, and the level of involvement of healthcare professionals in providing timely postpartum education to the mother.
The research also revealed that the prompt initiation of breast-feeding, regular and effective expression of breast milk, and the provision of adequate professional assistance are powerful deterrents against breast engorgement.

An in-depth analysis revealed that the studies that were incorporated in this analysis are credible and dependable evidence to identify the risk factors associated with breast engorgement in the mother after childbirth.
The quality of the evidence also speaks to the credibility of this review and the need to ensure that there is a holistic, culturally sensitive, and system-based approach to prevent breast engorgement and ensure the success of breast-feeding.

Table 4.
Critical Appraisal

Article Code

Research Design

Result

A1

Cross-sectional (Wepeba et al., 2025)

Good

A2

Prospective cohort (Ogbo et al., 2017)

Good

A3

Cross-sectional (Purwaningsih & Sudarmi, 2024)

Good

A4

Cross-sectional (Ahmad Rahimi et al., 2020)

Good

A5

Cross-sectional (Rapingah et al., 2021)

Good

A6

Qualitative (Joseph & Earland, 2019)

Good

A7

Qualitative (Mohamed et al., 2020)

Good

A8

Cross-sectional (Alyousefi, 2021)

Good

A9

Retrospective cohort (Kandeel et al., 2018)

Good

A10

Cross-sectional (Mundagowa et al., 2019)

Good

A11

Cross-sectional (Asare et al., 2018)

Good

Figure 2.
Year Classification

As shown in the figure above, the articles for this research were published from 2017 to 2025, representing the timeline of research regarding postpartum breast engorgement.
This is further broken down as follows: one article in 2017, two in 2018, two in 2019, two in 2020, two in 2021, one in 2024, and one in 2025.
This indicates that there was a marked peak in published articles from 2018 to 2021, representing a period of intense focus on this topic, while the earlier and later years had fewer publications.

Figure 3.
Country Classification

From the diagram provided above, it is clear that the research that was analyzed came from ten different countries, indicating a vast global coverage of research contribution.
The country that contributed the most to the research (19%) was Ghana, followed closely by Indonesia, which also contributed 18%.
This indicates that these two countries were the primary contributors of the research that was analyzed in the review.
On the other hand, Australia, Afghanistan, Nigeria, Kenya, Saudi Arabia, Egypt, and Zimbabwe contributed an equal 9% each.

Figure 4.
Research Design Classification

According to the diagram presented, the majority of the studies examined in the research were mostly cross-sectional, accounting for 62% of the total.
This indicates that a majority of the studies adopted an observational study approach in assessing the variables at a particular point in time.
On the other hand, qualitative research accounted for 18%, indicating a substantial application of exploratory research in understanding the aspects of the research topic.
On the other hand, retrospective cohort research accounted for 11%, while prospective cohort research accounted for only 9%, indicating a minor application of cohort research.

Table 4.
Theme Analysis

Theme

Sub-theme

Article Code

Maternal Characteristics

Maternal characteristics include the mother's age, total pregnancies, total children, education, self-esteem, drive, the mother's attitude toward breastfeeding, the mother's feelings about breastfeeding, the mother's smoking habits during pregnancy, and the mother's complications after giving birth.

A1, A2, A3, A5, A8, A9, A11

Socioeconomic and Living Conditions

Socioeconomic and living conditions include family income and financial situation, socioeconomic status, and type of living areas, such as cities or countryside.
All these factors affect access to breastfeeding resources and support.

A1, A2, A4, A10

Infant-Related Factors

The elements associated with the baby include age and sex, particularly in cases of boys, as they determine expectations in terms of feeding, care-giving methods, and breastfeeding behaviors.

A1, A4

Breastfeeding Practices

The habits of breastfeeding include how often breastfeeding occurs, prompt initiation of breastfeeding after delivery, providing expressed breastmilk, continuation of breastfeeding when the mother is sick, and the mother's plan for exclusive breastfeeding.

A3, A4, A8

Knowledge, Attitude, and Perception

Understanding, beliefs, and viewpoints cover a mother's understanding and beliefs about breastfeeding, cultural traditions that influence feeding practices, and the belief that babies need extra liquids such as water.

A1, A3, A5, A6, A7, A10

Social and Family Support

Social family support includes support from the spouse, assistance from family members, family role structuring, family decision-making processes, support from friends and colleagues, as well as overall societal support for breastfeeding.

A2, A3, A5, A6, A8

Health System and Professional Support

Health systems and professional support include assistance from healthcare providers, access to breastfeeding resources, and the use of medications such as promethazine that may affect breastfeeding practices.

A4, A5, A7, A8

Cultural and Traditional Practices

Cultural and traditional customs comprise conventional care after childbirth, feeding practices influenced by socio-cultural influences, and cultural impacts created by relatives and traditional birth attendants.

A6, A7, A10

DISCUSSION

This analysis uses different research results to identify the main ideas and secondary ideas associated with the risk factors for engorgement in new mothers.

The analysis indicates that engorgement in new mothers is caused by different factors that include the characteristics of the mother, her economic and living conditions, factors associated with the child, breastfeeding methods, understanding and attitude of the mother, support of the family and society, healthcare facilities, and customs (Aprilina et al., 2025; Indrayani et al., n.d.; Rachman, 2022; Rahmadani, 2025; Solihah et al., 2023; Tryaningsih1 et al., 2025; Ulfah & Galaupa, 2025).

Maternal Characteristics

The characteristics of mothers are an important factor that affects breast engorgement.
The characteristics include the age of the mother, the number of children she has given birth to, educational level, confidence level in breastfeeding, level of comfort with breastfeeding, smoking during pregnancy, and complications during delivery.
The characteristics are associated with the consequences of breastfeeding (A1, A2, A3, A5, A8, A9, A11).
Younger mothers or those who are giving birth for the first time experience higher stress and self-doubt, which affects their breastfeeding activities, thereby increasing the risk of breast engorgement.
Mothers with higher educational attainment and those who are confident with breastfeeding activities show better skills in dealing with problems, enabling them to detect breast engorgement earlier, hence taking preventive measures effectively (Oktarida, 2023; Rachman, 2022; Setiadewi et al., 2023).

Socioeconomic and Living Conditions

The success of the mother in breastfeeding is largely influenced by socioeconomic and environmental factors.
Factors such as the earnings of the mother, the economic well-being of the mother, and whether the mother lives in an urban or rural environment are all important socioeconomic factors that affect the availability of resources, facilities, and professional advice for breastfeeding (A1, A2, A4, A10).
In urban environments, breastfeeding resources are more readily available, while in rural environments, the mother relies on general advice, which may delay the mother receiving the right advice regarding issues such as breast engorgement.
Financial constraints may also affect the mother's ability to purchase a breast pump or breastfeeding facilities, thus increasing the risk of insufficient milk supply (Wepeba et al., 2025).

Infant-Related Factors

The characteristics of infants, including their age and sex, contribute to the practice of breastfeeding.
In the early weeks of life, a baby's poor sucking ability or incorrect nursing technique may lead to insufficient drainage of the breast, thus causing the mother to feel full.
Studies have shown that baby boys are sometimes believed to require frequent breastfeeding, which may help in effectively draining the breast to avoid fullness or even exacerbate the condition if the nursing technique is not optimal (Ahmad Rahimi et al., 2020).

Breastfeeding Practices

The practices employed in breastfeeding play an important role in the direct influence on breast engorgement.
The practices include how often the baby is breastfed, the need for timely initiation of breastfeeding after birth, the use of expressed milk for feeding the baby, the need for continued breastfeeding even when the mother feels unwell, and the wish for exclusive breastfeeding.
The failure to timely initiate breastfeeding and the infrequent practice of breastfeeding have been found to be closely related to the accumulation of milk and discomfort in the breasts.
On the other hand, timely initiation and frequent breastfeeding have been found to facilitate the flow of milk and reduce the chances for breast engorgement.
However, improper methods for expressing milk and changes in breastfeeding practices may also contribute to breast engorgement (Afrinita et al., 2025; Isdayanti et al., 2023).

Knowledge, Attitude, and Perception

The knowledge and perception of mothers about breastfeeding are significant in either preventing or worsening cases of breast engorgement (A1, A3, A5, A6, A7, A10).
Mothers with good knowledge of biological processes concerning breastfeeding and initial manifestations of breast engorgement are more proactive in adjusting their frequency of breastfeeding or seeking advice from health experts.
Mothers' cultural beliefs, such as their perception of their children needing additional fluids such as water, can interfere with exclusive breastfeeding and lead to poor breast drainage.
Misconceptions about pain and discomfort during breastfeeding can prevent mothers from maintaining their routine in breastfeeding (Amna & Diana, 2023; Kusuma & Yolanda Umar, 2023).

Social and Family Support

Assistance received from social circles and families served as protection against the condition of breast engorgement.
The assistance received from partners, families, friends, and coworkers had a positive influence on the continuation of breastfeeding and the self-confidence of mothers (A2, A3, A5, A6, A8).
The family structure and the decision-making process had a significant influence on the breastfeeding process.
The mothers who received both emotional support and assistance were more likely to continue with the breastfeeding process regularly and overcome the challenges of breast engorgement successfully (Ogbo et al., 2017; Purwaningsih & Sudarmi, 2024).

Health System and Professional Support

Support from health systems and professionals is a crucial factor in reducing the chances of breast engorgement.
Assistance from health professionals, the availability of breastfeeding corners, and information about medication, such as sedatives like promethazine, influence the success of breastfeeding (A4, A5, A7, A8).
Appropriate information during antenatal and postnatal sessions helps in the early identification and management of breast engorgement.
Lack of proper access to health professionals often leads to delayed management and worsening of the condition (Ahmad Rahimi et al., 2020).

Cultural and Traditional Practices

Culture and traditions have been identified to play an important role in influencing breastfeeding practices and the likelihood of breast engorgement.
The approach taken in breastfeeding after delivery is influenced by cultural practices, breastfeeding standards, and cultural influences on breastfeeding decisions, including the role of family and traditional midwives (A6, A7, A10).
While cultural practices can be beneficial for the mother, they can sometimes result in delayed initiation of breast-feeding, including additional breastfeeding, thereby increasing the likelihood of breast engorgement (Mohamed et al., 2020; Mundagowa et al., 2019; Purwaningsih & Sudarmi, 2024; Sarlis, 2020).

Overall, this thematic synthesis shows that breast engorgement cannot be attributed to one single factor, as it is the product of a complex interplay of personal, social, and systemic factors.
The uniqueness of this review is based on the fact that it thoroughly integrates the perspectives of mothers, babies, actions, sociocultural factors, and health systems.
Unlike most studies that concentrate on the analysis of single factors, this review identifies the commonalities that exist across the settings, emphasizing the need to start breastfeeding as soon as possible, the need to provide social support, the need to provide education that is sensitive to culture, and the need to provide professional assistance.
This provides a solid basis for the development of comprehensive and setting-specific strategies to prevent breast engorgement and improve the outcomes of breastfeeding among new mothers.

CONCLUSIONS

Breast engorgement that develops after childbirth is a situation that may be prevented.
However, it has been attributed to a number of factors.

They range from a combination of maternal factors, breastfeeding practices, issues related to the infant, sociocultural settings, economic conditions, as well as levels of support from both professional and family circles.
In conclusion, this review has sought to highlight that issues related to delays in initiating breastfeeding, difficulties with milk expression, a lack of understanding and confidence among mothers, as well as a lack of support from the health system are some of the common causes of breast engorgement.
In addition, these issues have been found to be worse in areas with poor resources as well as rural settings.
In conclusion, therefore, it is imperative that breast engorgement be viewed as a serious public health issue that requires multifaceted solutions that go beyond a physical response.

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Abstract

Among the most frequent postpartum breastfeeding problems, breast engorgement increases the chance of mastitis as well as causes maternal pain and breastfeeding disruptions.
Study of its contributing elements has included several frameworks and methods.
This scoping review aimed to present a full view of the risk factors for breast engorgement in women following birth.
Based on the PRISMA-ScR approach, the scoping review was undertaken.
Using several electronic databases, including Google Scholar, ScienceDirect, Wiley, and PubMed, a literature study on the publications between 2015 and 2025 was done.
Qualifying studies investigated the factors linked to breast engorgement in postpartum women.
The data were mapped and thematically arranged.
Maternal traits, socioeconomic and living environment, infant-related factors, breastfeeding habits, maternal awareness and beliefs, social and family support, health systems and professional assistance, and cultural and traditional practices all influence breast engorgement, a multifactorial condition found in this study.
The most constant contributing elements were determined to be too little professional support, inadequate milk removal, little maternal knowledge, and insufficient breastfeeding initiation.
It is important to understand that systemic, cultural, and behavioral elements all affect breast engorgement, therefore it is a public health problem.

Multidisciplinary, context-sensitive actions are needed to prevent breast engorgement and encourage the greatest breastfeeding outcomes.

Keywords: breast engorgement, postpartum mothers, breastfeeding, risk factors, scoping review

INTRODUCTION

Milk stasis, often known as breast engorgement, is a lactation-related condition in which breast milk builds up beyond normal, causing breast discomfort, agony, and strain as well as nursing difficulties (WHO, 2022).
Milk stasis is a frequent early problem during lactation that affects between 15 and 50% of breastfeeding women worldwide and it has the potential to develop into mastitis if not treated appropriately (WHO, 2022).

Reports from the United States have also noted elevated breast engorgement incidence rates.
The survey findings displayed a constant pattern independent of sample size change.
34%, respectively, demonstrating that breast engorgement is still a major problem for nursing mothers.
(Ulfah & Galaupa, 2025).

Data from the area reveal that Southeast Asia also has a high incidence of breast engorgement., 2023).
1% in 2021, the incidence of clogged milk ducts among nursing mothers grew., 2023).

According a pathophysiological approach, breast engorgement is brought on by disturbed venous and lymphatic circulation inside the breast tissue that causes decreased milk flow and raised pressure within the milk ducts and alveoli (Perangin Angin, 2020).

This disease is mostly caused by the milk accumulating that is not adequately drained from the breast.
Clinically showing as breast swelling, warmth, hardness, and discomfort, breast engorgement may be accompanied by a small increase in the mother's body temperature, reaching roughly 38degC (Perangin Angin, 2020).

Typically, breast engorgement happens on the second or third day after delivery as milk supply begins to increase.
The most typical causes of this illness are insufficient breast milk production, often caused by inadequate feeding frequency or duration, milk production surpassing the breast's emptying ability, delays in starting breastfeeding, bad mother-infant connection, or limited breastfeeding time (Nurjannah, 2024).

Even without a fever, the increased intraductal pressure brought on by milk buildup and clogged milk ducts makes the breasts feel tight, painful, and swollen.
The edema can also make the areola firm and less pliable, which would make attachment and suckling challenging for the infant.
Left untreated, breast engorgement can cause more major diseases like mastitis or a breast abscess as well as severely impair the continuation of nursing and the effectiveness of exclusive breastfeeding (Ulfah & Galaupa, 2025).

Because breast engorgement has a great prevalence, complex etiology, and significant effects on mother comfort, breastfeeding efficacy, and the maintenance of exclusively breastfed, a thorough synthesis of the current evidence is required immediately.
Differences in maternal characteristics, nursing practices, cultural expectations, and healthcare system resources throughout settings further underscore the complexity of this disease and the disadvantages of segmented, single-factor-oriented therapies.
Consequently, this scoping review was carried out to methodically compile available evidence on risk elements associated with breast engorgement in postnatal mothers.
By synthesizing results from different countries, research techniques, and cultural backgrounds, the review aims to provide a thorough grasp of breast engorgement and to assist in the development of context-appropriate multidisciplinary treatments that would maximize nursing outcomes.

METHODS

This scoping review sought to offer a complete map of the present research on the factors affecting breast engorgement in postpartum women including those from maternal, infant, behavioral, cultural, and health system influences.
Because it allows a systematic analysis of a huge and varied literature corpus, the scoping review method was chosen to facilitate the identification of important concepts, trends, and research gaps in a difficult clinical and public health problem.

To ensure openness and methodologically exactness, this investigation was designed and written in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) guidelines (PRISMA, 2020)., 2021).

This scoping review employs Arksey and O'Malley's methodological framework, which has been modified according to later methodological recommendations.
Five sequential phases comprised the review process: (1) generation of the research question, (2) identification of pertinent studies, (3) selection of qualified studies guided by predetermined inclusion and exclusion criteria, (4) data extraction and record of essential information from included studies, (5) synthesis, integration, and narrative report of findings.
Using this organized technique, the review synthesized the data and offered an integrated view of the many risk variables influencing postpartum breast engorgement in women in several healthcare settings and environments.

Defining the Research Question

Based on the Population-Exposure-Outcome (PEO) framework as shown in Table 1, the research question directing this scoping review was: "What variables have been found in the literature to be connected with breast engorgement in postpartum mothers?"

Table 1.
PEO Framework

P (Population)
E (Exposure)
O (Outcome)

Mothers nursing or just beginning to breastfeed after delivery.

Several variables affect the accumulation of breast milk that causes breast engorgement.

Postpartum breast swelling.

A comprehensive search of the literature was undertaken in the four major online sources: Google Scholar, Wiley Online Library, ScienceDirect, and PubMed.
The search sought for relevant studies examining factors related to breast engorgement in postpartum women.
Articles released between 2015 and 2025 were included so as to give a thorough picture of historical and current data.

Medical Subject Headings (MeSH) and free-text keywords were both used in the search method.
Boolean operators were applied as follows: postpartum mothers OR nursing mothers OR breastfeeding mothers AND breast engorgement OR breast congestion AND risk variables OR determinants OR associated variables AND breastfeeding techniques OR sociocultural elements OR health system factors.
Making search changes specific to each platform's indexing system, the data retrieval was adjusted.

The inclusion and exclusion criteria for papers included in this review are as follows:

Table 2.
Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Peer reviewed original research paper (quantitative, qualitative, or mixed design)	
Focus on nursing or moms who have recently given birth.	
Investigate the breast engorgement's risk elements, causes, or associated variables.	
Composed in English	

Complete text is available.

Released between 2015 and 2025

Review conference abstracts, protocols, comments, reviews, or articles.

Research done on those who are not postpartum

Unfinished articles

Recognizing Relevant Research

Doing a complete literature search in four electronic databases ScienceDirect, Wiley Online Library, Google Scholar, and PubMed yields a total of 3,571 original papers.
Based on title and abstract, the other records were then evaluated to see whether they came inside the purview of this study.

According to defined inclusion and exclusion criteria, the whole article texts were downloaded and analyzed for suitability.
Studies were eliminated at this time for causes including irrelevance to breast engorgement, participation of non-postpartum populations, or methodological ambiguity.
Eleven objects met the inclusion criteria as a result of this rigorous selection process and were included in the ultimate synthesis.

To ensure the openness and reproducibility of the scoping review strategy, a PRISMA flowchart shown in Figure 1 systematically shows the whole study selection process.

Figure 1.
PRISMA Flowchart

RESULTS

Selecting the Right Studies

Acquired during this scoping study, the data focused on factors related to postpartum breast engorgement, such maternal traits, feeding techniques, infant-related variables, societal influences, and health system support.
After conducting a comprehensive literature search across numerous internet databases, a large number of original papers were discovered.

Following title and abstract screening as well as duplicate removal, full-text papers were evaluated for suitability based on accepted inclusion and exclusion guidelines.

Only 11 papers met the inclusion criteria and were finally combined as a result of this careful picking procedure.
Written in English and spanning a wide spectrum of geographical regions, including low, middle, and high income countries, the studies included covered between 2015 and 2025.
The selected papers exhibit methodological diversity as well, including cross-sectional studies, cohort research, and qualitative research techniques.

Table 3 (Data Charting) offers a summary of the key characteristics of the chosen studies authors, country of origin, research objectives, research approach, data collecting methods, and main findings.

The diversity of research environments and techniques that support the thematic synthesis of risk factors related to breast engorgement in postpartum women is summarized in this table.

Table 3.
Data Charting

No

Author/Year

Country

Objectives

Design

Methods

Result

1. , 2025)

Ghana

Among 320 randomly selected nursing and midwifery employed in a major hospital, to assess the factors influencing exclusive breastfeeding conduct.

Cross-sectional

An analytical cross-sectional study was conducted among 320 randomly selected nurses and midwives who were breastfeeding in four public hospitals in Tamale City, Ghana.

Data were collected using a pre-tested structured questionnaire administered through face-to-face interviews, covering sociodemographic characteristics, knowledge, attitudes, and exclusive breastfeeding practices.
05.

Even though over half of the participants solely breastfed, the preponderance of positive attitudes coupled with inadequate knowledge highlights a significant chasm that exposes mothers to the danger of using incorrect breastfeeding techniques; Insufficient breast emptying results from limited knowledge of successful attachment, breastfeeding frequency, and early identification of lactation problems combined with socioeconomic constraints, parity, infant age, and the presence of postpartum complications, hence increasing the likelihood of breast engorgement and hence upsetting breastfeeding continuity and adding to early cessation of exclusive breastfeeding.

2. , 2017)

Australia

To study the prevalence and causes of early discontinuation of exclusive breastfeeding in a linguistically and culturally varied community in Sydney, New South Wales, Australia.

Prospective cohort

First-time expectant mothers in Australia were recruited during their pregnancy and followed following birth for a cohort study.
Information on the beginning of breastfeeding, first breastfeeding experiences, and consequences connected to breastfeeding was gathered via an organized, self-completed survey.

To identify variables associated with breastfeeding difficulties, the statistical assessment used descriptive statistics and multivariate regression analysis, presenting results as adjusted effect estimates.

Exclusive breastfeeding is commonly practiced at birth and when leaving the hospital, but it drops sharply shortly after childbirth.

3. (Purwaningsih & Sudarmi, 2024)

Indonesia

To explore the association of contributing factors with exclusive breastfeeding.

Cross-sectional

An observational study that employed a cross-sectional design was conducted, where 84 mothers were chosen from a larger sample of 127 mothers, all of whom were breastfeeding infants aged 6-12 months, using systematic random sampling methods.
Data was collected from the mothers using a questionnaire that was comprehensive, enabling the researcher to assess the mothers' knowledge, the timing of the commencement of breastfeeding, their confidence, their drive, cultural practices, and the support received from family members.
05.

This shows that the absence of knowledge among mothers, delayed or absent initiation of breastfeeding, low self-esteem and motivation for breastfeeding, non-supportive social norms, and inadequate family support may indirectly increase the risk of breast engorgement.

This is because of their effects on the frequency and effectiveness of breastfeeding, resulting in inadequate breast emptying, milk accumulation, pain among mothers, and difficulties in maintaining exclusive breastfeeding in the early postnatal period.

4. , 2020)

Afghanistan

To determine the elements that affect the exclusive breastfeeding habits of mothers in Kandahar, Afghanistan.

Cross-sectional

In this research, a cross-sectional analytical research design was used.
This was done in Kandahar, Afghanistan.
Information was collected from the respondents through a standard questionnaire developed by the research team.
This was administered to 1,028 mothers who had children below two years of age and who had visited seven healthcare centers within a period of six months from June to November 2018.
Data analysis was done using SPSS version 22.

These findings suggest that inappropriate exclusive breastfeeding practices, such as the premature initiation of solid

foods, the use of pacifiers, and the administration of substances other than milk, as well as low socioeconomic status, urban lifestyle, gender-based breastfeeding practices, and the consumption of sedatives, result in irregular and inefficient breastfeeding practices.
This, in turn, makes the chances of the mothers experiencing problems such as insufficient milk removal, milk stasis, and breast swelling even higher.

Conversely, the routine practice of breastfeeding, along with the consumption of expressed breast milk, acts as a preventive mechanism against the inefficient removal of milk, as well as breast swelling.

5. , 2021)

Indonesia

To identify elements related to the practice of exclusive breastfeeding among healthcare professionals.

Cross-sectional

A cross-sectional observational study was conducted among 85 female health professionals with infants aged 6 to 24 months in 10 community health centers in East Jakarta, where a structured questionnaire was used to obtain data on factors that contribute to, promote, and support exclusive breast feeding.
The analysis of the data obtained was performed through the use of the univariate, bivariate (chi-square test), and multivariate logistic regression methods, specifically the backward stepwise method, to identify the significant factors.

These findings suggest that although the rate of exclusive breastfeeding among female primary health care providers is relatively average, the lack of maternal understanding and the age of mothers, although having a generally positive attitude and support from family, friends, and professionals, is a major factor in the cessation of breastfeeding.
This is due to the lack of understanding and lack of hands-on experience, making it difficult to lactate effectively, increasing the chances of breast engorgement, and ultimately leading to the premature cessation of exclusive breastfeeding.
6.

(Joseph & Earland, 2019)

Nigeria

To examine

Sociocultural factors influencing the practice of exclusive breastfeeding among mothers in rural areas.

Qualitative study

The research methodology that will be used in this research is the qualitative method, which is based on the interpretive social constructivism perspective.
The information will be obtained through detailed semi-structured interviews conducted with 20 mothers aged 18-39 years, carefully selected from the two local government areas in Katsina state, Nigeria.
The data analysis will be conducted through the thematic content analysis method.

Sociocultural factors, family factors, and customs also play an important role in the initiation and continuation of breastfeeding practices among rural mothers.
When these factors contribute to the initiation of breastfeeding late, insufficient breastfeeding, and supplementation, it leads to inadequate milk drainage, thereby increasing the risk of breast engorgement, which further endangers the continued practice of exclusive breastfeeding.

7. , 2020)

Kenya

To evaluate elements linked to the practice of exclusive breastfeeding among mothers visiting Wajir County Hospital in Kenya.

Qualitative study

Data was collected through conducting focus group discussions with the mothers of infants below the age of six months, as well as conducting interviews with the healthcare staff at Wajir County Hospital.

A total of eight focus group discussions with 72 mothers and nine interviews with the healthcare staff were conducted using both purposive and random sampling methods.
The data collection instruments were pre-tested, and the discussions were taped with the consent of the participants.
The collected data was analyzed using thematic content analysis to emphasize the important issues regarding exclusive breastfeeding.

These are the insufficient exclusive breastfeeding practices that may lead to various serious health problems.
Delayed initiation of breastfeeding, less frequent breastfeeding, and the early introduction of other fluids may affect the normal emptying of the breast, increase the risk of excessive milk buildup, and increase the risk of breast engorgement.
In addition, cultural influences that hinder exclusive breastfeeding, such as deeply ingrained beliefs, strong family influences, and insufficient support from healthcare professionals, may indirectly affect the development or maintenance of breast engorgement among new mothers.

8. (Alyousefi, 2021)

Saudi Arabia

To explore the elements linked to effective exclusive breastfeeding among mothers in Saudi Arabia.

Cross-sectional

A cross-sectional survey-based research was conducted among mothers attending a family medicine clinic in Saudi Arabia, and the objective was to identify factors that impact exclusive breastfeeding.

The key focus was exclusive breastfeeding practices, while the independent variables were sociodemographic factors of mothers, ease of breastfeeding in public places, awareness and perception about breastfeeding, past experiences of successful breastfeeding, and plans during pregnancy.
Data collected from 322 participants were analyzed, and the variables that are associated with successful exclusive breastfeeding were identified using bivariate analysis and multinomial logistic regression analysis.

In 322 mothers, the low prevalence of exclusive breastfeeding at 28% was closely related to attitudes towards insufficient supply of breast milk, discomfort with breastfeeding in public or social situations, lack of access to breastfeeding-supportive environments, weak commitment to exclusive breastfeeding during prenatal periods, and cessation of breastfeeding when the mother herself was ill, which caused inconsistent or premature cessation of breastfeeding, thereby failing to completely empty the breast, resulting in milk accumulation and increasing the risk for engorgement, thereby impairing the effectiveness of exclusive breastfeeding.

9. , 2018)

Egypt

To examine the social, maternal, and infant factors that impede the practice of exclusive breastfeeding during the first six months of life.

Retrospective cohort

A comparative research using a review-based approach was carried out, and the study included 827 babies ranging from 6 to 24 months of age.

The participants were chosen from various pediatric clinics and well-baby clinics in Cairo, Egypt.
The participants were divided into various groups depending on the type of feeding they received during the first six months of life.
The information was collected using a detailed questionnaire that included various questions regarding the mothers, the children, obstetric, and socioeconomic factors.
The data analysis included descriptive statistics, chi-square tests, odds ratios, and logistic regression, with a significance level set at p.

These findings show that elements like the mother's background, characteristics of the baby, and issues that increase the possibility of mixed or formula feeding, like a younger age for mothers, first-time mothers, multiple children, unmarried mothers, premature birth, cesarean delivery, and neonatal intensive care, create irregular and interrupted breastfeeding practices.
This consequently creates issues like improper emptying of the breasts, milk buildup, and engorgement that impede the continuation of exclusive breastfeeding in the initial six months of life.

10. , 2019)

Zimbabwe

To investigate the factors related to mothers, infants, homes, surroundings, and culture, which affect exclusive breastfeeding practices in Gwanda District.

Cross-sectional

The data was obtained through questionnaires filled in by 223 mothers of 6-12-month-old babies attending health facilities and EPI service delivery points in Gwanda District.

The data was analyzed using descriptive statistics, bivariate analysis, and multivariate regression analysis for factors that determine exclusive breastfeeding (EBF), as well as thematic analysis of responses from key informant interviews.

These findings suggest that a significant difference between what the mothers know and their actual practice of exclusive breastfeeding is associated with the inconsistency and insufficiency of milk expression.
This is particularly the case when the practice of adding water and other liquids at the beginning of breastfeeding has become widely accepted, increasing the risk of milk accumulation and breast swelling.
The risk of the aforementioned problems is particularly high in young mothers with lower birth weights and those experiencing economic difficulties.
Furthermore, the absence of financial independence and the presence of significant cultural demands hinder the continuation of exclusive breastfeeding and increase the problem of breast swelling, which is a significant factor in the early discontinuation of breastfeeding.

11. , 2018)

Ghana

To assess the breastfeeding practices, as well as the sociodemographic factors, which influence exclusive breastfeeding practices, among mothers who visit the child welfare clinic in Manhean, within the Tema East Sub-Metropolitan Area, in the Greater Accra Region of Ghana.

Cross-sectional

The data was collected using direct interviews with a standardized questionnaire, aiming at 355 mothers who breastfed children aged 0 to 24 months at the Manhean Child Welfare Clinic in Ghana.
A simple random sampling method was employed, and the data was analyzed using descriptive statistics as well as univariate and multivariate logistic regression to identify factors associated with exclusive breastfeeding in line with WHO infant feeding recommendations.

Despite high levels of maternal awareness and early initiation of breastfeeding, persistent suboptimal breastfeeding practices, especially bottle-feeding and complementary feeding practices, affect effective breast emptying, leading to milk stasis and breast engorgement.
Moreover, maternal age and sociocultural factors play an important role in these practices, emphasizing that suboptimal breastfeeding practices are an important indirect pathway in the causation of breast engorgement in postpartum mothers.

Critical Appraisal

The methods employed in the studies included were found to be good in terms of their quality through the application of the Joanna Briggs Institute (JBI) critical appraisal tool.
The tool uses different checklists for different types of studies.
The critical appraisal tool evaluation revealed that all the studies had good methods with good internal and external validity and a good research framework (JBI, 2025).

The types of evidence found were cross-sectional and cohort studies that employed good statistical methods such as logistic regression and multivariate analysis for the evaluation of factors related to breast engorgement in mothers after delivery.
In addition, qualitative studies employed good methods for conducting in-depth interviews and thematic analysis for the evaluation of factors related to the experiences and culture of the community and the family for understanding breastfeeding practices.
The variety in the methods employed for the evaluation of the evidence provided in this scoping review was good.

In the various research investigations, the common theme that emerged was that the engorgement of breasts is influenced by a complex interplay of factors, which include the mother's level of understanding and attitude, the promptness and regularity of breast-feeding, the level of support from family and partners, and the level of involvement of healthcare professionals in providing timely postpartum education to the mother.
The research also revealed that the prompt initiation of breast-feeding, regular and effective expression of breast milk, and the provision of adequate professional assistance are powerful deterrents against breast engorgement.

An in-depth analysis revealed that the studies that were incorporated in this analysis are credible and dependable evidence to identify the risk factors associated with breast engorgement in the mother after childbirth.

The quality of the evidence also speaks to the credibility of this review and the need to ensure that there is a holistic, culturally sensitive, and system-based approach to prevent breast engorgement and ensure the success of breast-feeding.

Table 4., 2018)

Good

Figure 2.
Year Classification

As shown in the figure above, the articles for this research were published from 2017 to 2025, representing the timeline of research regarding postpartum breast engorgement.
This is further broken down as follows: one article in 2017, two in 2018, two in 2019, two in 2020, two in 2021, one in 2024, and one in 2025.
This indicates that there was a marked peak in published articles from 2018 to 2021, representing a period of intense focus on this topic, while the earlier and later years had fewer publications.

Figure 3.
Country Classification

From the diagram provided above, it is clear that the research that was analyzed came from ten different countries, indicating a vast global coverage of research contribution.
The country that contributed the most to the research (19%) was Ghana, followed closely by Indonesia, which also contributed 18%.
This indicates that these two countries were the primary contributors of the research that was analyzed in the review.
On the other hand, Australia, Afghanistan, Nigeria, Kenya, Saudi Arabia, Egypt, and Zimbabwe contributed an equal 9% each.

Figure 4.

Research Design Classification

According to the diagram presented, the majority of the studies examined in the research were mostly cross-sectional, accounting for 62% of the total.
This indicates that a majority of the studies adopted an observational study approach in assessing the variables at a particular point in time.
On the other hand, qualitative research accounted for 18%, indicating a substantial application of exploratory research in understanding the aspects of the research topic.
On the other hand, retrospective cohort research accounted for 11%, while prospective cohort research accounted for only 9%, indicating a minor application of cohort research.

Table 4.
Theme Analysis

Theme

Sub-theme

Article Code

Maternal Characteristics

Maternal characteristics include the mother's age, total pregnancies, total children, education, self-esteem, drive, the mother's attitude toward breastfeeding, the mother's feelings about breastfeeding, the mother's smoking habits during pregnancy, and the mother's complications after giving birth.

A1, A2, A3, A5, A8, A9, A11

Socioeconomic and Living Conditions

Socioeconomic and living conditions include family income and financial situation, socioeconomic status, and type of living areas, such as cities or countryside.
All these factors affect access to breastfeeding resources and support.

A1, A2, A4, A10

Infant-Related Factors

The elements associated with the baby include age and sex, particularly in cases of boys, as they determine expectations in terms of feeding, care-giving methods, and breastfeeding behaviors.

A1, A4

Breastfeeding Practices

The habits of breastfeeding include how often breastfeeding occurs, prompt initiation of breastfeeding after delivery, providing expressed breastmilk, continuation of breastfeeding when the mother is sick, and the mother's plan for exclusive breastfeeding.

A3, A4, A8

Knowledge, Attitude, and Perception

Understanding, beliefs, and viewpoints cover a mother's understanding and beliefs about breastfeeding, cultural traditions that influence feeding practices, and the belief that babies need extra liquids such as water.

A1, A3, A5, A6, A7, A10

Social and Family Support

Social family support includes support from the spouse, assistance from family members, family role structuring, family decision-making processes, support from friends and colleagues, as well as overall societal support for breastfeeding.

A2, A3, A5, A6, A8

Health System and Professional Support

Health systems and professional support include assistance from healthcare providers, access to breastfeeding resources, and the use of medications such as promethazine that may affect breastfeeding practices.

A4, A5, A7, A8

Cultural and Traditional Practices

Cultural and traditional customs comprise conventional care after childbirth, feeding practices influenced by socio-cultural influences, and cultural impacts created by relatives and traditional birth attendants.

A6, A7, A10

DISCUSSION

This analysis uses different research results to identify the main ideas and secondary ideas associated with the risk factors for engorgement in new mothers., 2025; Ulfah & Galaupa, 2025).

Maternal Characteristics

The characteristics of mothers are an important factor that affects breast engorgement.
The characteristics include the age of the mother, the number of children she has given birth to, educational level, confidence level in breastfeeding, level of comfort with breastfeeding, smoking during pregnancy, and complications during delivery.
The characteristics are associated with the consequences of breastfeeding (A1, A2, A3, A5, A8, A9, A11).
Younger mothers or those who are giving birth for the first time experience higher stress and self-doubt, which affects their breastfeeding activities, thereby increasing the risk of breast engorgement., 2023).

Socioeconomic and Living Conditions

The success of the mother in breastfeeding is largely influenced by socioeconomic and environmental factors.

Factors such as the earnings of the mother, the economic well-being of the mother, and whether the mother lives in an urban or rural environment are all important socioeconomic factors that affect the availability of resources, facilities, and professional advice for breastfeeding (A1, A2, A4, A10).
In urban environments, breastfeeding resources are more readily available, while in rural environments, the mother relies on general advice, which may delay the mother receiving the right advice regarding issues such as breast engorgement., 2025).

Infant-Related Factors

The characteristics of infants, including their age and sex, contribute to the practice of breastfeeding.
In the early weeks of life, a baby's poor sucking ability or incorrect nursing technique may lead to insufficient drainage of the breast, thus causing the mother to feel full., 2020).

Breastfeeding Practices

The practices employed in breastfeeding play an important role in the direct influence on breast engorgement.
The practices include how often the baby is breastfed, the need for timely initiation of breastfeeding after birth, the use of expressed milk for feeding the baby, the need for continued breastfeeding even when the mother feels unwell, and the wish for exclusive breastfeeding.
The failure to timely initiate breastfeeding and the infrequent practice of breastfeeding have been found to be closely related to the accumulation of milk and discomfort in the breasts.

On the other hand, timely initiation and frequent breastfeeding have been found to facilitate the flow of milk and reduce the chances for breast engorgement., 2023).

Knowledge, Attitude, and Perception

The knowledge and perception of mothers about breastfeeding are significant in either preventing or worsening cases of breast engorgement (A1, A3, A5, A6, A7, A10).
Mothers with good knowledge of biological processes concerning breastfeeding and initial manifestations of breast engorgement are more proactive in adjusting their frequency of breastfeeding or seeking advice from health experts.
Mothers' cultural beliefs, such as their perception of their children needing additional fluids such as water, can interfere with exclusive breastfeeding and lead to poor breast drainage.
Misconceptions about pain and discomfort during breastfeeding can prevent mothers from maintaining their routine in breastfeeding (Amna & Diana, 2023; Kusuma & Yolanda Umar, 2023).

Social and Family Support

Assistance received from social circles and families served as protection against the condition of breast engorgement.
The assistance received from partners, families, friends, and coworkers had a positive influence on the continuation of breastfeeding and the self-confidence of mothers (A2, A3, A5, A6, A8).
The family structure and the decision-making process had a significant influence on the breastfeeding process., 2017; Purwaningsih & Sudarmi, 2024).

Health System and Professional Support

Support from health systems and professionals is a crucial factor in reducing the chances of breast engorgement.
Assistance from health professionals, the availability of breastfeeding corners, and information about medication, such as sedatives like promethazine, influence the success of breastfeeding (A4, A5, A7, A8).
Appropriate information during antenatal and postnatal sessions helps in the early identification and management of breast engorgement., 2020).

Cultural and Traditional Practices

Culture and traditions have been identified to play an important role in influencing breastfeeding practices and the likelihood of breast engorgement.
The approach taken in breastfeeding after delivery is influenced by cultural practices, breastfeeding standards, and cultural influences on breastfeeding decisions, including the role of family and traditional midwives (A6, A7, A10)., 2019; Purwaningsih & Sudarmi, 2024; Sarlis, 2020).

Overall, this thematic synthesis shows that breast engorgement cannot be attributed to one single factor, as it is the product of a complex interplay of personal, social, and systemic factors.
The uniqueness of this review is based on the fact that it thoroughly integrates the perspectives of mothers, babies, actions, sociocultural factors, and health systems.

Unlike most studies that concentrate on the analysis of single factors, this review identifies the commonalities that exist across the settings, emphasizing the need to start breastfeeding as soon as possible, the need to provide social support, the need to provide education that is sensitive to culture, and the need to provide professional assistance.
This provides a solid basis for the development of comprehensive and setting-specific strategies to prevent breast engorgement and improve the outcomes of breastfeeding among new mothers.

CONCLUSIONS

Breast engorgement that develops after childbirth is a situation that may be prevented.
However, it has been attributed to a number of factors.
They range from a combination of maternal factors, breastfeeding practices, issues related to the infant, sociocultural settings, economic conditions, as well as levels of support from both professional and family circles.
In conclusion, this review has sought to highlight that issues related to delays in initiating breastfeeding, difficulties with milk expression, a lack of understanding and confidence among mothers, as well as a lack of support from the health system are some of the common causes of breast engorgement.

In addition, these issues have been found to be worse in areas with poor resources as well as rural settings.

In conclusion, therefore, it is imperative that breast engorgement be viewed as a serious public health issue that requires multifaceted solutions that go beyond a physical response.

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