



Maternal perceptions and experiences of breastfeeding support in Baby-Friendly hospitals: An integrative review

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ABSTRACT

Background: The Baby-Friendly Hospital Initiative aims to improve breastfeeding by implementing the Ten Steps to Successful Breastfeeding (Ten Steps) into routine breastfeeding support in birth hospitals. Maternal perspective to breastfeeding support is important to consider as mothers and their infants are in the center of that support.

Objectives: To review and synthesize the existing literature on maternal perceptions and experiences of breastfeeding support in Baby-Friendly hospitals. A sub-aim was to describe differences in breastfeeding support between Baby-Friendly hospitals and non-Baby-Friendly hospitals from maternal perspective.

Data sources and review methods: An integrative literature review. A systematic literature search was conducted in October 2021 in five databases: PubMed, CINAHL, Cochrane, Scopus, Web of Science. Original peer-reviewed studies published in English exploring maternal viewpoints on breastfeeding support in Baby-Friendly hospitals were included. Two reviewers independently screened the titles (n=914), abstracts (n=226), and full texts (n=47). The review comprised of seventeen studies and includes both quantitative studies (n=14) and qualitative studies (n=3). Inductive content analysis and descriptive synthesis were conducted.

Results: Most studies (n=14) measured hospitals' compliance with the Ten Steps practices from maternal perspective. Mothers were provided with breastfeeding information and encouragement, however, a qualitative finding indicated that information focused on positive aspects of breastfeeding. Early skin-to-skin contact between the mother and infant was well facilitated although often not lasting more than 30 min. Breastfeeding was facilitated by practical support but according to findings of two qualitative studies, support was not always adequate to address mothers' problems with breastfeeding. Most mothers were exclusively breastfeeding during the hospital stay and no supplemental milk was offered to infant. Mothers were roomed-in together with their infant and were mostly encouraged to breastfeed on demand. Differences between Baby-Friendly hospitals and non-Baby-Friendly hospitals were observed particularly for steps 6 and 9: supplementary feeding and pacifier use were less common in Baby-Friendly hospitals.

Conclusions: From the maternal perspective, breastfeeding support in the Baby-Friendly hospitals was mainly but not completely in adherence with the Ten Steps practices. Low compliance with some of the Ten Steps indicates a need for a more frequent assessment of the breastfeeding support practices and consideration of strategies facilitating a more sustainable implementation of the initiative. Regardless of some shortcomings with the breastfeeding support, mothers were mainly satisfied with the support in the hospital. Mothers in the Baby-Friendly hospitals perceived

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that breastfeeding support was more adherent to the Ten Steps compared to mothers in non-Baby-Friendly hospitals.

What is already known

- Baby-Friendly Hospital Initiative is a globally implemented health initiative to protect and promote breastfeeding in healthcare units offering maternal-infant care.
- Designation to Baby-Friendly Hospital requires implementation of evidence-based breastfeeding support practices (Ten Steps) into the routine care which, by implication, improves short and long-term breastfeeding outcomes.
- Studies investigating maternal perspective on breastfeeding support in Baby-Friendly hospitals is scarce; thus, an integrative review summarizing current evidence on maternal perceptions and experiences on breastfeeding support in Baby-Friendly hospitals, is needed.

What this paper adds

- The compliance of hospitals with the Ten Steps, from the maternal perspective, was mainly at a good level although shortcomings were reported by mothers.
- Mothers were mostly satisfied with the support and guidance they were received, however, support lacked consistency and mainly the positive aspects of breastfeeding were emphasized.
- Regular assessment and new strategies are needed to ensure a more sustainable implementation of the BFHI in the hospitals.

1. Introduction

Evidence-based breastfeeding support is important for achieving breastfeeding recommendations, preventing morbidity and mortality as well as for promoting sustainable development goals (Victora et al., 2016; Rollins et al., 2016; WHO, 2018). The Baby-Friendly Hospital Initiative (BFHI) is a globally implemented health initiative established in 1991 by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). This initiative aims to fulfill the need of evidence-based, high standard support for breastfeeding in facilities offering care for pregnant women, mothers, and newborns. The Ten Steps to Successful Breastfeeding (Ten Steps) are a set of evidence-based breastfeeding support practices that establish the fundamentals of the initiative (WHO, 2020). To be designated as a Baby-Friendly Hospital, facilities are required for full implementation of the Ten Steps practices and policies, as well as commitment to the International Code of Marketing Breastmilk substitutes. Implementation of BFHI includes revision of current hospital practices and training clinicians and staff at the administrative level (WHO, 2018).

Mothers should not be considered as passive receivers of breastfeeding support, but active participants of the support provided to them. Postpartum mothers are highly dependent on professional breastfeeding support in birth hospitals, and on community health services especially during the initial weeks following birth (McFadden et al., 2019, 2015). However, today, hospital stays after childbirth are short, thus generating new challenges in providing families with adequate and appropriate breastfeeding support during their hospital stay (McLelland et al., 2015). Although implementation of the Ten Steps is associated with improved breastfeeding outcomes, such as successful early initiation of breastfeeding and a high prevalence of increased exclusive breastfeeding at the time of hospital discharge (Pérez-Escamilla et al., 2016), there is nevertheless an increasing need to better understand the maternal perspective concerning the support provided to mothers (Munn et al., 2016; Leeming et al., 2017). The maternal point of view and maternal satisfaction with breastfeeding should be considered important when designing interventions to improve breastfeeding support (Ericson et al. 2021, Leeming et al., 2017; Leff et al., 1994). Breastfeeding support that is positively perceived by mothers will lead to the achievement of important health goals in societies (Schmied et al., 2011) such as increased rates of breastfeeding and improved health of mother and infant (Victora et al., 2016). Thus, the needs and expectations of pregnant women and postpartum mothers should be discussed whenever they are provided with breastfeeding support. Interestingly, thus far, there has been little research related to maternal perceptions and experiences of breastfeeding support in Baby-Friendly hospitals, and therefore the knowledge about this topic remains not only insufficient but also scattered as no previous integrative reviews summarizing evidence about the topic have been published.

Mothers may have feelings of guilt and shame for not breastfeeding their child (Thomson et al., 2015). These negative feelings may be notably present specifically in the context of BFHI which emphasizes the importance of breastfeeding. A previous review suggested that breastfeeding support adherent to the Ten Steps may create unrealistic expectations about breastfeeding for mothers. Therefore, the support and care in the context of Baby-Friendly Hospital may unintentionally trigger negative emotional experiences for mothers

(Fallon et al., 2019).

The lived experiences and perceptions of mothers giving birth in Baby-Friendly hospitals should be considered significant and a source of a better understanding of breastfeeding support and promotion from a maternal viewpoint. In addition, including the maternal viewpoint will help to understand and describe shortcomings in breastfeeding support that may exist in Baby-Friendly hospitals. The aim of this review was to synthesize the existing literature on maternal perceptions and experiences of breastfeeding support in Baby-Friendly hospitals. In addition, we aimed to describe possible differences in maternal perceptions and experiences of breastfeeding support between Baby-Friendly hospitals and non-Baby-Friendly hospitals if a comparative design was used.

2. Methods

2.1. Study design

This study was conducted as an integrative literature review following the main steps of Whittemore and Knafl's framework (2005): (1) problem identification (2) literature search (3) data evaluation (4) data analysis (5) presentation. An integrative review was chosen as it allows inclusion of diverse methodologies providing different types of evidence to better address issues of evidence-based practice in healthcare (Whittemore and Knafl, 2005). Considering the complexity breastfeeding support, this methodology was considered comprehensively capture and address the aim of this review.

2.2. Problem identification

Research questions were the following:

- What perceptions and experiences mothers have regarding breastfeeding support in Baby-Friendly hospitals?

Sub-question

- What differences are there in maternal perceptions and experiences between Baby-Friendly hospitals and non-Baby-Friendly hospitals, if a comparative study design is undertaken?

2.3. Literature search

A systematic search was conducted in October 2021 in five databases: PubMed, CINAHL, Cochrane, Scopus, and Web of Science. The search looked for studies which investigated maternal perceptions or experiences of breastfeeding support in Baby-Friendly hospitals with diverse methodologies. No restriction on the publication period was set as the Baby-Friendly Hospital Initiative itself restricts the publication period to no earlier than 1991. The search terms used in the databases are listed in Table 1. We included original studies that were (1) published in peer-review journals (2) written in English (3) exploring maternal viewpoint of breastfeeding support in Baby-Friendly hospitals. Studies with a comparative design comparing maternal perceptions and experiences of breastfeeding support between Baby-Friendly and non-Baby-Friendly hospitals were included in the review. We excluded studies that did not explore breastfeeding support from a maternal viewpoint or if it was not clearly mentioned that hospital had been designated as Baby-Friendly. Furthermore, literature reviews, commentaries and editorials were excluded.

Table 1

Search terms used in selected databases.

Database	Search terms
PubMed	(breastfeed* OR breast feed* OR infant feed* OR lactat* OR "Breast Feed-ing"[Mesh]) AND (counsel* OR support* OR educat* OR "Patient Education as Topic"[Mesh] OR promot* OR "Health Promotion"[Mesh]) AND ("baby friendly hospital*" OR "baby-friendly hospital*" OR BFHI)
CINAHL	(breastfeed* OR "breast feed*" OR "infant feed*" OR lactat* OR MH "Lactation" OR MH "Breast Feeding+" OR MH "Breast Feeding Promotion") AND (counsel* OR MH "Nutritional Counseling" OR support* OR educat* OR MH "Patient Education+" OR promot* OR MH "Health Promotion+") AND ("baby friendly hospital*" OR "baby-friendly hospital*" OR BFHI)
Cochrane	(breastfeed* OR breast NEXT feed* OR infant NEXT feed* OR lactat*) AND (counsel* OR support* OR promot* OR educat*) AND (baby NEXT friendly NEXT hospital* OR BFHI)
Scopus	(breastfeed* OR "breast feed*" OR "infant feed*" OR lactat*) AND (counsel* OR support* OR educat* OR promot*) AND ("baby friendly hospital*" OR "baby-friendly hospital*" OR BFHI)
Web of Science	(breastfeed* OR "breast feed*" OR "infant feed*" OR lactat*) AND (counsel* OR support* OR educat* OR promot*) AND ("baby friendly hospital*" OR "baby-friendly hospital*" OR BFHI)

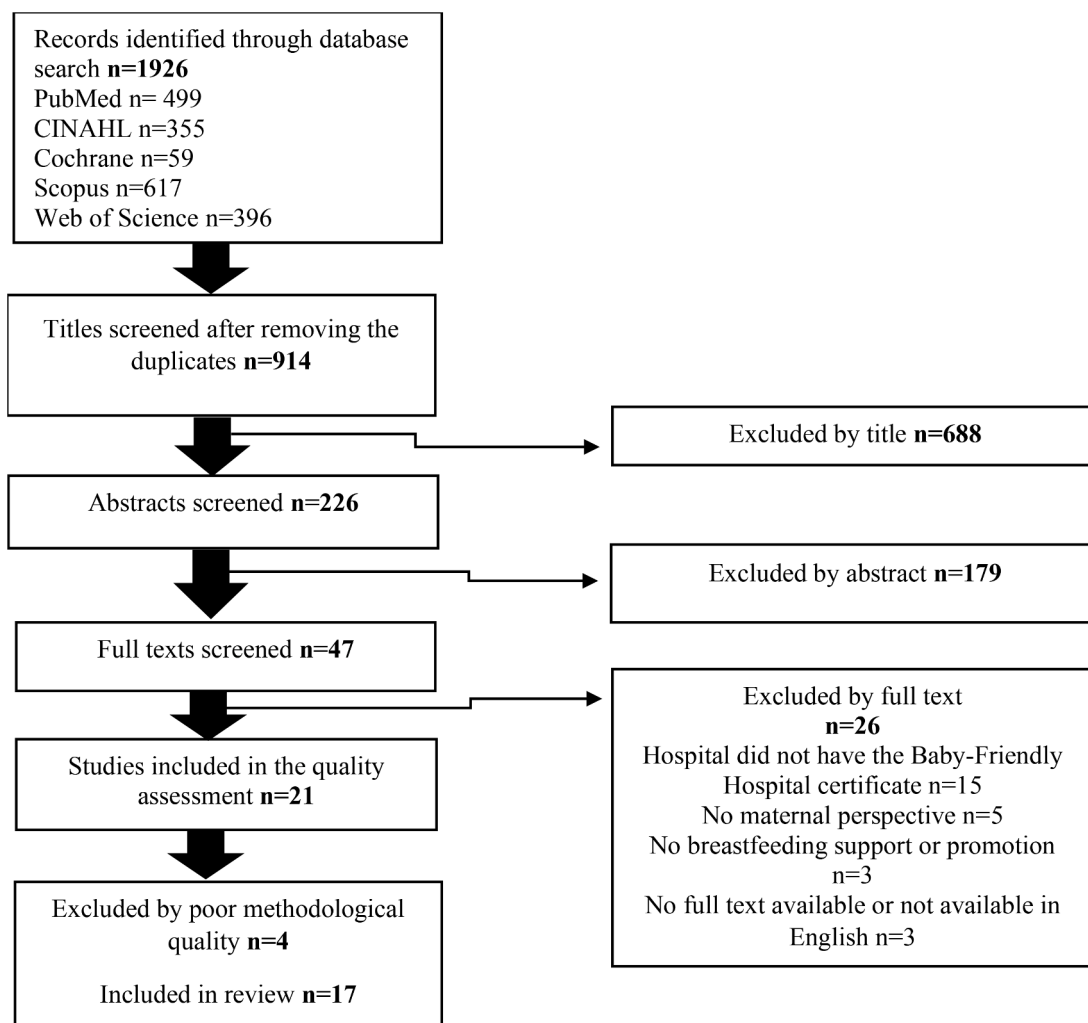


Fig. 1. Flow diagram of the literature search

In total, the search yielded 1926 matches. After removing the duplicates ($n=1012$), titles ($n=914$), abstracts ($n=226$), and full texts ($n=47$) were screened independently by two reviewers (JL, HM). A total of 21 full texts were selected for quality appraisal. Details of the selection process are described in Fig. 1. Decisions related to the selection of studies at all stages were based on mutual agreement and a consensus. Disagreements were solved by discussion in the research group. Zotero, a reference management software, was used for managing bibliographic data and removing duplicates. A PRISMA guideline for reporting systematic reviews was used in the reporting of this review (Page et al., 2021).

2.4. Data evaluation

Data evaluation was conducted to screen and exclude studies with poor methodological quality. The methodological quality of the selected full texts ($n=21$) was screened independently by two reviewers (JL, HM) using Joanna Briggs Institute's (JBI) critical appraisal tools for cross-sectional studies, quasi-experimental studies, cohort studies, and qualitative studies. Each study was assessed using an appropriate JBI checklist suitable for that specific study design. To be included in the review, each study was required to have a 50% acceptance of the total score to ensure the good quality of included studies. Based on the quality assessment, four studies (Khan and Akram, 2013; Nickkhaha, 2015; Raman et al., 2001; Rowe-Murray and Fisher, 2002) were excluded as they did not receive the 50% acceptance of the total score; this resulted in 17 articles being included in the review.

2.5. Data analysis

Data analysis comprised data reduction, data display, data comparison, conclusion drawing, and verification. A sub-group analysis

was undertaken to descriptively analyze and synthesize findings of studies with a comparative design (Whittemore and Knafl, 2005). First author (JL) conducted the analysis, and the other authors (HM, HN-V) confirmed it.

2.6. Data reduction, display and comparison

The original studies and their findings were read 3-4 times independently by two reviewers (JL, HM) to extract key findings relevant to the aims of this review. Results of original studies were determined as key findings if they included information regarding maternal perceptions or experiences related to breastfeeding support. The essential data of all the included studies were extracted and charted: author(s), year of publication, country, aim and design of the study, data collection methods, number of participants, comparison group (if applicable) and key findings (Table 2). Inductive content analysis was used to analyze data; findings relevant to research aim were inductively coded from all studies included in the review, and the codes were categorized. Data comparison included continuous comparison of data which resulted in similar codes grouped together to a mutual category. Codes such as “information”, “counselling” and “education”, for example, were collated in the category “Mothers provided with breastfeeding information” and codes “initial breastfeeding”, “first breastfeeding”, “skin-to-skin contact” were collated in the category “Early but interrupted skin-to-skin contact and initiation of breastfeeding”. The categories emerged from the data (Graneheim and Lundman, 2004) to address the primary aim of this review. The final categories were: (1) mothers provided with breastfeeding information (2) early but interrupted skin-to-skin contact and initiation of breastfeeding (3) varying practical support for breastfeeding (4) avoiding unnecessary supplementary feeding and pacifier use (5) rooming-in and encouraging breastfeeding on demand (6) continuity of support following hospital discharge. Table 4 illustrates categories linked to the studies.

In the sub-group analysis, studies with a comparative design (n=11) were charted in Table 3 and descriptive data (percentage of mothers experiencing each step of the Ten steps and statistical significance if reported) were extracted and descriptively synthesized to describe differences in maternal perceptions of breastfeeding support between Baby-Friendly hospitals and non-Baby-Friendly hospitals.

2.7. Conclusion drawing and verification

In the final phase, categories and descriptive synthesis of sub-group analysis were revised to make sure that they included essential data regarding each category. Verification with primary source data was completed to confirm results were accurate and confirmable.

3. Presentation of results

3.1. Description of included studies

In total, 17 studies published between 2006-2021 fulfilled the inclusion criteria and were included in the review. Most of the studies were from countries outside Europe: the USA (n=5), Brazil (n=3), Taiwan (n=2), Australia (n=1), Saudi-Arabia (n=1) and Russia (n=1). The remaining four European studies were from Italy (n=1), Switzerland (n=1), UK (n=1) and Croatia (n=1). Most of the included studies (n=14) had a quantitative approach using a cross-sectional (n=9), cohort (n=3), and quasi-experimental (n=2) designs. Eleven of quantitative studies compared maternal perceptions of the hospital’s compliance with the Ten Steps between Baby-Friendly and non-Baby-Friendly hospital (Abolyan, 2006; Brodribb et al., 2013; Chien et al., 2007; Ducharme-Smith et al., 2021; Hawkins et al., 2014; Jung et al., 2019; Marinelli et al., 2019; Mosher et al., 2016; Ortiz et al., 2011; Spaeth et al., 2018; Zakarija-Grkovic et al., 2018). Ortiz et al. (2011) used data from another Brazilian cross-sectional study (Souza et al., 2011) to compare maternal perceptions on hospitals’ compliance with non-Baby-Friendly hospitals; thus, results regarding the study by Ortiz et al. (2011) were reported only for regarding the comparison.

Studies used different measures to report maternal perceptions regarding breastfeeding support in hospital: only three studies used a standardized self-appraisal tool by the WHO/UNICEF to assess maternal perceptions of each hospital’s compliance with the Ten Steps (Ortiz et al., 2011; Souza et al., 2011; Zakarija-Grkovic et al., 2018). Used data collection methods and measurements are described in Table 2. Quantitative data collection methods included self-administered questionnaires (n=5), in-person surveys (n=6) and telephone surveys (n=3) of primi- and multiparous mothers regardless of delivery mode, and the sample size varied between 100 and 6752. Data were collected either in the immediate postpartum period in the birth hospital (n=6) or from one month to five years after the mother was discharged from hospital (n=8). Three studies included only low-income mothers (Lewkowitz et al., 2019; Jung et al., 2019, Ducharme-Smith et al. 2021). Two studies included only mothers participating in the United States Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (Ducharme-Smith et al., 2021; Jung et al., 2019) (Table 2).

Three studies had a qualitative approach. The data collection methods comprised semi-structured interviews (n=1) of African American mothers (Miller et al., 2018), in-depth qualitative interviews (n=1) of Taiwanese mothers of infants with breast milk jaundice (Chu et al., 2019) and short interviews as a part of an ethnographic study of mothers in a Baby-Friendly hospital (Byrom et al., 2020). Data were collected either in the birth hospital, in a BFHI-affiliated clinic or at home after hospital discharge. The sample sizes of these qualitative studies varied between nine and twenty-one. Detailed description of the included studies is presented in Table 2.

3.2. Maternal perceptions and experiences of breastfeeding support in Baby-Friendly hospitals

Six major categories emerged regarding maternal perceptions and experiences of breastfeeding support in Baby-Friendly hospitals:

Table 2
Study characteristics

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
Abolyan L., (2006), Russia	To evaluate implementation of the WHO/UNICEF "Ten Steps to Successful Breastfeeding" in eight maternity hospitals.	Quasi-experimental study, n=741 mothers (n=383 BFH, n=358 non-BFH).	At discharge, mothers filled in a paper questionnaire which included 76 questions divided into six main units: general information about the mother, antenatal preparation for breastfeeding, delivery data, breastfeeding practices, mothers' and babies' health status, and the mother's attitude toward the new practices to protect and support breastfeeding in the maternity hospital.	Yes	73 % (vs 58 % non-BFH) reported that their infant was placed on abdomen, but a minority (34 % vs 2 % non-BFH) experienced skin-to-skin contact to last for more than 30 mins (step 4). Median time for breastfeeding initiation according to mothers' experiences was within 2 h after birth (vs 12 h non-BFH). 93 % (vs 76 % non-BFH) received help to attach the baby to breast (step 5). 89 % (vs 33 % non-BFH) were exclusively breastfeeding (step 6) and 93 % (vs 52 % non-BFH) roomed-in with their infant (step 7). 4 % (vs 18 % non-BFH) reported use of dummies.	6/9
Brodrrib et al., (2013), Australia	To investigate the effect of Baby-Friendly Hospital Initiative (BFHI) accreditation and hospital care practices on breastfeeding rates at 1 and 4 months.	Retrospective cohort study, n=6752 mothers (n=1457 BFHI, n=5295 non-BFHI) at four months after childbirth.	A postal/telephone /online survey about maternal reported compliance (experienced/not experienced) with four BFHI practices (rooming-in, early initiation of breastfeeding, supplementation in hospital and skin-to-skin contact at the first contact).	Yes	79 % (vs 71 % non-BFH, p<0.001) experienced skin-to-skin contact (step 4) as a first contact and 83 % (vs 78 % non-BFH, p<0.001) attempted breastfeeding within the first hour after birth (step 4). 85% (vs 76 % non-BFH, p<0.001) were exclusively breastfeeding (step 6) and 84 % (vs 79 % non-BFH, p<0.001) continuously roomed-in with their infant (step 7). Over half of mothers (59 % vs 48 % non-BFH, p<0.001) experienced all four hospital practices (first contact skin-to-skin, first feed within 60 min, rooming-in all the time and exclusive breastfeeding).	7/11
Byrom et al., (2020), UK	To explore the influence of the national UNICEF UK Baby Friendly Initiative (BFI) standards on the culture of one typical maternity service in England	A critical ethnographic study, a convenience sample of 26 members of maternity staff and 21 service users (n = 16 mothers, n = 5 fathers).	Observations and short interviews with mothers and fathers to clarify participant actions, thoughts and feelings related to particular care experiences while in the hospital.	No	Mothers and fathers perceived care from the staff helpful helping them to feel confident and reassured about infant feeding and care. Practical support and information from the staff were viewed to be in good balance and emotionally engaging. Support from staff was experienced mother-centered responding to maternal needs.	10/10
Chien et al., (2007), Taiwan	To examine the association between number of Baby Friendly		A postal questionnaire (yes/no response) survey (at 1 month after	Yes	1 % of mothers reported experiencing all Ten Steps-practices	6/8

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
	hospital practices experienced by mothers and breastfeeding initiation during hospital stay, breastfeeding at 1 month and breastfeeding at 3 months after delivery.	A cross-sectional study, n=2079 mothers (n=914 BFH, n=1165 non-BFH).	childbirth) on maternal experiences with the Ten Steps during postnatal hospital stay. Questionnaire included questions adapted from the Baby Friendly hospitals checklist (Taiwan Bureau of Health Promotion). Each question in the questionnaire corresponded to one Baby Friendly Step.		and 5.7% did not experience any of the Ten Steps practices. Mothers who delivered at certified Baby-Friendly hospitals experienced more Ten Step- practices compared to mothers in non-BFH. Majority of mothers saw written breastfeeding policies posted in hospitals and could understand the words they used (step 1) (77 % vs 52 % non-BFH, p <0.001), agreed that health-care staff had enough knowledge and supported them to breastfeed (step 2) (94 % vs 78 % non-BFH, p<0.001), were taught about the importance of breastfeeding (step 3) (80 % vs 60 % non-BFH, p<0.001). 30 % (vs 5 % non-BFH, p<0.001) initiated breastfeeding within 30 mins from birth (step 4) and 81 % (vs 55 % non-BFH, p<0.001) were guided how to express breast milk if they had to be separated from their baby (step 5). 35 % (vs 7 % non-BFH, p<0.001) were exclusively breastfeeding (step 6). 15 % (vs 3 % non-BFH, p<0.001) continuously roomed-in with their infant (step 7) and 59 % (vs 21 % non-BFH, p<0.001) were encouraged to breastfeed on demand (step 8). 49 % (vs 8 % non-BFH, p<0.001) gave no pacifiers to their infant (step 9) and 42 % (vs 17 % non-BFH, p<0.001) were told how to contact breastfeeding support groups at the time of hospital discharge (step 10). Initially, staff did not provide enough information on possible problems related to breastfeeding such as insufficient milk supply and neonatal jaundice. Mothers experienced stress from hospital staff to breastfeed despite of neonatal jaundice and breastfeeding	
Chu et al., (2019), Taiwan	To explore the breastfeeding experiences of mothers of infants with breastfeeding or breast milk jaundice	A qualitative descriptive study, n=9 postpartum mothers.	In-depth qualitative interviews using a semi structured interview guideline were conducted regarding maternal breastfeeding experiences and neonatal-jaundice breastfeeding experiences.	No		8/10

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
Ducharme-Smith et al. (2021), USA		A cross-sectional two group comparison design, n=182 postpartum mothers participating in the United States Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (n=108 BFH, n=74 non-BFH).	A combination of WIC records and a telephone survey (at 2-5 months after childbirth) created by the study team. The survey included questions that have been previously used to evaluate BFHI practices and questions created by the study team. Questions assessed maternal experiences on hospitals' adherence to each of the 10 Steps and a component of the International Code of Marketing Breast-milk Substitutes. (received Step/ did not receive Step).	Yes	support placed pressure on some mothers. Mothers experienced inconsistent advice about supplementary formula feeding. 70 % of mothers (vs 60 % non-BFH, p=0.22) were informed about the benefits and management of breastfeeding (step 3) and 53 % (vs 43% non-BFH, p=0.44) were helped to initiate breastfeeding within one hour of birth (step 4). 59 % (vs 48 % non-BFH, p=0.15) were shown how to maintain lactation, even if they are separated from their infants (step 5) and 41 % (vs 31 % non-BFH, p=0.18) gave infants no food or drink other than human milk, unless medically indicated (step 6). 36 % (vs 41 % non-BFH, p=0.41) roomed-in with their infant (step 7) and 61 % (vs 53 % non-BFH, p=0.26) were encouraged breastfeeding on demand (step 8). 16 % (vs 3 % non-BFH, p=0.01) gave no pacifiers or artificial nipples to breastfeeding infants (step 9) and 85 % (vs 84 % non-BFH, p=0.80) were referred to breastfeeding support groups on discharge from the hospital or birth center (step 10). 32 % of mothers (vs 27 % non-BFH, p=0.44) reported that they did not receive formula, breast-milk substitutes bottles or nipple shields upon hospital discharge. 35 % (vs 27 % non-BFH) of mothers reported experiencing all seven Ten Steps practices measured in the study. 28 % (vs 69 % non-BFH, p<0.001) received a formula gift pack from the hospital. 96 % (vs 92 % non-BFH, p=0.01) were given information about breastfeeding (step 3) and 57 % (vs 57 % non-BFH, p=1.0) attempted breastfeeding within the first hour	7/8
Hawkins et al., (2014), USA	To examine compliance with the Baby-Friendly Hospital Initiative (BFHI) as well as evaluate the BFHI and its components on breastfeeding initiation and duration overall and according to maternal education level	Quasi-experimental study, n=1448 postpartum mothers (n=349 BFH, n=1099 non-BFH).	The Maine PRAMS (Pregnancy Risk Assessment Monitoring System) postal questionnaire was used (at 2-6 months after childbirth) including nine statements (yes/no response) about hospital practices of which seven corresponded to the 10 Steps.	Yes		6/9

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
Jung et al., (2019), USA	To examine changes in Baby-Friendly hospital practices, breastfeeding outcomes, and their relationships with Baby-Friendly hospital status among WIC-enrolled children.	Cross-sectional study, n=1576 postpartum mothers (n=898 BFHI, n=678 non-BFHI) among the WIC population in LAC.	A telephone interview (up to 5 years after childbirth) with LAC WIC Survey regarding maternal reported hospital practices related to three BFHI practices (yes/no response).	Yes	after birth (step 4). 72 % (vs 69 % non-BFH, p=0.5) reported that the hospital staff helped them to breastfeed (step 5) and 59 % (vs 52 % non-BFH, p=0.001) exclusively breastfed their infant (step 6). 87 % (vs 91 % non-BFH, p=0.1) roomed-in with their infant (step 7) and 73 % (vs 73 % non-BFH, p=0.9) were instructed to breastfeed whenever their baby wanted (step 8). 71 % (vs 61 % non-BFH, p<0.001) did not use pacifier for their infant while in the hospital (step 9) and 79 % (vs 77 % non-BFH, p=0.4) stated that they were given a telephone number to call for help for breastfeeding (step 10). 40% (vs 60 % non-BFH, p<0.001) received a formula gift pack from the hospital to take home. 62% (vs 53 % non-BFH, p<0.05) were exclusively breastfeeding (step 6) and 87 % (vs 83 % non-BFH, not significant) received a phone number to a breastfeeding helpline (step 10).	5/8
Lewkowitz et al., (2019), USA	To determine infant feeding practices of low-income women at a Baby-Friendly Hospital and to describe breastfeeding interventions they believe would increase exclusive breastfeeding.	A cross-sectional study, n=149 low-income postpartum mothers.	A validated questionnaire modified from the Infant Feeding Practices Study II (within 6-9 months after childbirth) regarding infant feeding patterns, breastfeeding challenges, and perceived usefulness of proposed breastfeeding interventions.	No	Despite of high breastfeeding initiation rates, the minority of mothers (32 %) were exclusively breastfeeding by the second day of postpartum. Less than two-thirds of mothers believed the breastfeeding help they received in the hospital resolved their breastfeeding problems suggesting that low-income mothers may need additional breastfeeding support. Mothers exclusively breastfeeding had a higher rate of receiving help for breastfeeding compared to those who supplemented with formula (73 % vs 55 %, p=0.076)	7/8
Marinelli et al., (2019), Italy	To compare women in Baby-Friendly Hospital and non-Baby-Friendly Hospital hospitals in terms of 1) breastfeeding in the	A cross-sectional study, n=786 postpartum mothers (n=206 BFHI, n=580 non-BFHI).	Face-to-face interviews (at 24 to 72 h after childbirth) using a structured questionnaire (yes/no response) investigating maternal	Yes	Majority of mothers experienced a skin-to-skin contact with their newborn after delivery (step 4) (91 % vs 75 % non-BFH, p=0.33). Less	7/8

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
	days immediately following childbirth; 2) the information provided by health personnel before and after childbirth; 3) knowledge about breastfeeding before and during hospitalization; 4) participation in antenatal classes.		perceptions on breastfeeding practices in birth hospital.		than half experienced first breastfeeding immediately after birth in the delivery room (step 4) (48 % vs 4 % non-BFH, $p<0.001$) or within less than 2 h from birth (40 % vs 11 % non-BFH, $p<0.001$). More women in BFH reported that healthcare practitioner was counselled for breastfeeding problems (93 % vs 49 %, $p<0.001$) and that they received information about breastfeeding during the hospital stay (step 3) (96 % vs 47 %, $p<0.001$) compared to mothers in non-BFH.	
Miller et al., (2018), USA	To explore African American women's experiences of the Ten Steps to Successful Breastfeeding at a women's center associated with a university-affiliated hospital that recently achieved Baby-Friendly status.	A qualitative study, n=20 African American postpartum mothers.	Semi-structured interviews (at 6 weeks after childbirth) that were analyzed using deductive themes (the Ten Steps). Interview questions included following domains: demographic and background, including birth and breastfeeding experience, breastfeeding education, and infant feeding and the community.	No	Most mothers reported being satisfied with their experiences while in the hospital. Mothers appreciated long-term relationships with medical professionals. African American perception of infant autonomy and childrearing were contradictory to some of the Ten Steps hospital practices. Almost all mothers (n=19/20) reported having skin-to-skin contact (step 4) with their infants immediately after birth. Mothers who had a cesarean section, experienced a delayed first initiation of breastfeeding. Some mothers talked with a lactation consultant or hospital staff with good knowledge of breastfeeding. However, no mother reported receiving help to manage pain, to assess latch issues or to address their perception of milk supply (step 5). Most mothers (n=16/20) reported infant receiving formula while in the hospital (step 6). Mothers did not report having discussed the benefits of breastfeeding with hospital staff before making their decision about giving formula milk to infant. Women roomed-in with their infant	7/10

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
Mosher et al., (2016), Saudi-Arabia	To examine reported experiences and views on breastfeeding of women using prenatal and postnatal services, and opinions of staff, in the context of the BFHI program.	Prospective longitudinal cohort study, n=277 postpartum mothers (n=139 BFH, n=138 non-BFHI).	A telephone survey (at one month after childbirth) using a questionnaire (yes/no response) that addressed maternal reported compliance with the Ten Steps.	Yes	(step 7) except those whose infant was in NICU. Mothers experienced that staff encouraged to frequent breastfeeding mainly due to medical reasons (step 8). Staff provided pacifiers for infants in case of mother's request (step 9). Postnatal community support was not effectively provided to mothers (step 10), despite mothers having problems with breastfeeding. 78% (vs 24 % non-BFH, p<0.0001) saw a written breastfeeding policy in the hospital (step 1) and 93 % (vs 48 % non-BFH, p<0.0001) were encouraged to breastfeed by clinical staff (step 2). 65% (vs 13 % non-BFH, p<0.001) were shown how to breastfeed (step 5), 50 % (vs 6 % non-BFH, p<0.001) were exclusively breastfeeding (step 6) and 52 % (vs 47 % non-BFH, p<0.048) did not give pacifier to infant (step 9). Approximately half of mothers were encouraged to breastfeed within the first half an hour after birth (step 4) (47 % vs 10 % non-BFH, p<0.0001). 50 % (vs 6 % non-BFH, p<0.001) were exclusively breastfeeding (step 6) and 18 % (vs 16 % non BFH) whose infant received supplementary milk reported that this was due to medical reasons. 28 % (vs 61 % non-BFH, not reported) stated supplementary feed was at the initiative of the staff. 57 % (vs 18 % non-BFH, p<0.0001) were told about importance of breastfeeding on demand (step 8) and (50 % vs 18 % non-BFH, p<0.0001) continuously roomed-in with their infant (step 7). 6 % (vs 12 % non-BFH, p=0.13) saw promotions of breastmilk substitutes and 5 % (vs 25 % non-BFH, p<0.001) received formula gift	7/11

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
Ortiz et al., (2011), Brazil	To compare compliance with Steps 4 to 10 of "The Steps to Successful Breastfeeding" in two hospitals accredited by the Baby-Friendly Hospital Initiative (BFHI group) with two not yet accredited hospitals.	A cross-sectional study, n=203 postpartum mothers (n=100 BFHI, n=103 non-BFHI).	Face-to-face interviews at the hospital discharge using a self-appraisal questionnaire (yes/no response) by WHO/UNICEF to assess maternal reported compliance with the Ten Steps. Items corresponded to the steps 4-10.	Yes	<p>packs while in the hospital. 52 % (vs 47 % non-BFH, p=0.48) did not give their infant a pacifier during the hospital stay (step 9). 12 % (vs 40 % non-BFH, p<0.0001) were offered follow-up support from the hospital for breastfeeding after discharge (step 10). Compliance with steps 4, 5, 8 and 10 was found to be lower compared to the global criteria established by UNICEF/WHO. During hospitalization, 83% (vs 31% non-BFH, p<0.001) received breastfeeding counselling and 68 % (vs 31 %, p<0.001) received information on the advantages of breastfeeding (step 3). 15 % (vs 9 % non-BFH, not significant) experienced an early skin-to-skin contact for more than 30 mins (step 4). 66 % (vs 33 % non-BFH, p<0.001) received help with breastfeeding and positioning (step 5), 38 % (vs 15 % non-BFH, p<0.001) were taught how to remove any excess milk from engorged breasts, and 55 % (vs 34 % non-BFH, p<0.001) were told how to remove milk manually during breastfeeding (step 5). 77 % (vs 36 % non-BFH, p<0.001) were shown how to breastfeed and maintain lactation and 77 % (vs 52 % non-BFH, p<0.001) were encouraged to breastfeed on demand (step 8). 81 % (vs 33 % non-BFH, p<0.001) were exclusively breastfeeding (step 6) and 89 % (vs 81 % non-BFH, not significant) roomed-in with their infant (step 7). All mothers reported that they did not give their infant a pacifier during the hospital stay (step 9) (vs 94 % non-BFH, p<0.05). 5 % (vs 1 % non-BFH, not</p>	7/8

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
Rocha-Sampaio et al., (2016), Brazil.	To identify prevalence of compliance with the fourth step of the Baby-Friendly Hospital Initiative (skin-to-skin contact in the first half hour for at least 30 min or until the babies' first fed)	A cross-sectional study, n=107 postpartum mothers.	Face-to-face interviews of mothers who had given birth at least 12 and at most 36 h before the interview. A structured questionnaire was used to assess maternal reported compliance with the Step 4. Full compliance with the fourth step of BFHI (yes/no response) was assessed as follows: putting newborns in skin-to-skin contact with their mother in the first half hour of their lives, as they remained in contact for at least 30 min or until the babies' first fed.	No	significant) were referred to breastfeeding support groups at hospital discharge (step 10) and 8 % (vs 1 % non-BFH, p=0.036) were asked about their infant feeding plans after on discharge from hospital. 9 % of mothers experienced early skin-to-skin contact with their infant within half an hour from birth for at least 30 mins (step 4). Mode of birth was associated with compliance of the step 4; thus, none of the mothers giving birth via caesarean (n=55) experienced the fourth step as recommended (p=0.01)	5/8
Souza et al., (2011), Brazil	To evaluate the compliance of the Ten Steps Program to Successful Breastfeeding recommended by the Baby-Friendly Hospital Initiative (BFHI)	A cross-sectional descriptive study, n=100 postpartum mothers before hospital discharge.	Face-to-face interviews using a self-appraisal questionnaire by WHO/ UNICEF to assess maternal reported compliance with the Ten Steps. Items corresponded to the steps 4-10.	No	Low compliance for Step 4 (breastfeeding initiation immediately after birth), Step 5 (exclusive breastfeeding during hospitalization), and Step 10 (referring mothers to breastfeeding support groups following discharge from hospital). 58 % were allowed to hold the newborn in the delivery room, 15 % of mothers were allowed to hold newborn for over 30 mins in the delivery room and 11 % of mothers were helped to initiate breastfeeding during this time (step 4) Majority (77 %) were shown how to hold the newborn and how to put the baby to the breast (step 5), but fewer were instructed how to remove excess milk from the breasts (38 %) or shown how to remove milk manually (55 %) (step 5). 19 % of mothers reported that newborn received supplementary food (step	5/8

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
Spaeth et al., (2017), Switzerland	To investigate the association of BFH designation (current, former, and never) and compliance with Baby-Friendly (BF) practices on breastfeeding	A cross-sectional study, n=1326 postpartum mothers (n=508 BFH, n=425 former BFH, n=393 never BFH).	A postal questionnaire (The Swiss Infant Feeding Study) at up to 11 months after childbirth. The questionnaire measured maternal reported compliance with the Steps 4-10.	Yes	6). 91 % of mothers roomed-in with their infant throughout hospitalization (step 7) and 62 % reported that rooming-in was initiated in the first hour after delivery. 77 % were encouraged to breastfeed on demand (step 8) and 64 % of mothers were instructed not to offer pacifiers or bottles to the child (step 9). 5 % of mothers were referred to breastfeeding support groups following discharge from hospital (step 10). 65 % (vs 59 % non-BFH, not significant) reported that skin-to-skin contact was assisted immediately after birth with first attempt of breastfeeding within 1 h after birth (step 4) and 82 % (vs 84 % non-BFH, not significant) got advice on breastfeeding during hospital stay (step 5). 59 % (vs 45 % non-BFH, p<0.05) of mothers exclusively breastfed (step 6) and 71 % (vs 64 % non-BFH, not significant) roomed-in with their infant (step 7). 79 % (vs 77 % non-BFH, not significant) were encouraged to breastfeed on demand (step 8) and 70 % (vs 41 % non-BFH, p<0.05) reported infant not using a pacifier while in the hospital (step 9).	5/8
Zakarija-Grkovic et al., (2018), Croatia	To determine hospital practices and breastfeeding rates before and after BFHI implementation and assess compliance with UNICEF/World Health Organization (WHO) standards for seven of the BFHI's Ten Steps to Successful Breastfeeding (Ten Steps)	A prospective cohort study, n=1115 postpartum mothers (n=342 post BFHI implementation, n=773 pre-BFH implementation)	Face-to-face interviews during postnatal hospital stay. A self-appraisal questionnaire by WHO/UNICEF was used to assess maternal reported compliance with the Ten Steps. Questionnaire covered steps 3-9 and compliance with the International Code of Marketing of Breast milk Substitutes.	Yes	All measured practices improved but were not maintained at 6 months after BFHI designation. Only Steps 7 and 9 were in full compliance with UNICEF/WHO standards. 84 % (vs 77 % pre-BFH, p=0.007) of mothers had skin-to-skin contact as a first contact with their infant (step 4) and 23 % (vs 2 % pre-BFH, p<0.001) reported that skin-to-skin contact lasted for 60 mins or longer. 32 % (vs 7 % pre-BFH, p<0.001)	6/11

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Table 2 (continued)

Author, (year of publication), country	Aim of the study	Design and number of participants	Data collection and measurements	Comparison group (non-BFH or pre-BFH implementation)	Key findings relevant to the aim of this review	JBI quality appraisal score (/max score)
					<p>initiated breastfeeding at birth (step 4). 68 % (vs 70 % pre-BFH, p=0.11) were helped with positioning and attaching infant for breastfeeding (step 5). 25 % (vs 44 % pre-BFH, p<0.001) were showed or given information on hand expression. 45 % (vs 17 % pre-BFH, p<0.001) exclusively breastfed their infant (step 6) and 99 % (vs 3 % pre-BFH, p<0.001) roomed-in with their infant (step 7). 97 % (vs 69 % pre-BFH, p<0.001) whose infant had supplementary milk were informed of the need for supplementation. 45 % (vs 25 % pre-BFH, p<0.001) were instructed to feed infant on demand (step 8) and 55 % (vs 75 % pre-BFH, p<0.001) were given some other advice or no advice at all. 33 % (vs 23 % pre-BFH, p<0.001) were told to breastfeed for as long as their infant wants. 8 % of mothers (vs 6 % pre-BFH, p=0.38) were informed of the risks associated with use of a pacifier (step 9) and 1 % (vs 0.1 % pre-BFH, p=0.04) reported that staff gave their infant a pacifier to suckle (step 9).</p>	

Table 3

Studies with a comparative design (n=11) comparing maternal perceptions on breastfeeding support (hospitals' compliance with the Ten Steps) between Baby-Friendly hospitals (BFH) and non-Baby-Friendly hospitals (non-BFH)

Percentage of mothers experiencing the step (BFH vs non-BFH)										
Author and year	Step 1 (%)	Step 2 (%)	Step 3 (%)	Step 4 (%)	Step 5 (%)	Step 6 (%)	Step 7 (%)	Step 8 (%)	Step 9 (%)	Step 10 (%)
Abolyan 2006	NR	NR	NR	73 vs 58 NS	93 vs 76 NS	89 vs 33 NS	93 vs 52 NS	NR	4 vs 18 NS	NR
Brodribb et al. 2013	NR	NR	NR	SSC 79 vs 71** BF 83 vs 78**	NR	85 vs 76*	84 vs 79*	NR	NR	NR
Chien et al. 2007	77 vs 52**	94 vs 78**	80 vs 60**	30 vs 5**	81 vs 55**	35 vs 7**	15 vs 3**	59 vs 21**	49 vs 8**	42 vs 17**
Ducharme-Smith et al. 2021	NR	NR	70 vs 60 NS	53 vs 43 NS	59 vs 48 NS	41 vs 31 NS	36 vs 41 NS	61 vs 53 NS	16 vs 3 **	85 vs 84 NS
Hawkins et al. 2014	NR	NR	96 vs 92 NS	57 vs 57 NS	72 vs 69 NS	59 vs 52 **	87 vs 91 NS	73 vs 73 NS	71 vs 61 **	79 vs 77 NS
Jung et al. 2019	NR	NR	NR	NR	NR	62 vs 53*	NR	NR	NR	87 vs 83 NS
Marinelli et al. 2019	NR	NR	96 vs 47 **	SSC 91 vs 75 NS BF 48 v 4 **	NR	89 vs 44 NS	NR	NR	NR	NR
Mosher et al. 2016	78 vs 24**	93 vs 48**	NR	47 vs 10**	65 vs 13 **	50 vs 6**	50 vs 18 **	57 vs 18**	52 vs 47 NS	12 vs 40**
Ortiz et al. 2011	NR	NR	68 vs 31**	SSC 15 vs 9 NS	77 vs 36**	81 vs 33**	89 vs 81 NS	77 vs 52**	100 vs 94*	5 vs 1 NS
Spaeth et al. 2017	NR	NR	NR	65 vs 59 NS	82 vs 84 NS	59 vs 45*	71 vs 64 NS	79 vs 77 NS	70 vs 41*	NR
Zakarjija-Grkovic et al. 2018	NR	NR	NR	SSC 84 vs 77* BF 32 vs 7**	68 vs 70 NS	45 vs 17**	99 vs 3 **	45 vs 25**	8 vs 6 NS	NR

Step 1. Breastfeeding policy was posted in hospitals; Step 2. Hospital staff had knowledge and supported breastfeeding; Step 3 Pregnant women were informed about the benefits and management of breastfeeding; Step 4. Skin-to-skin contact was facilitated, and mothers were supported to initiate breastfeeding as soon as possible after birth.; Step 5. Mothers were shown how to breastfeed, and how to maintain lactation; Step 6. Newborn infants had no food or drink other than breastmilk; Step 7. Rooming-in was practiced; Step 8. Breastfeeding on demand was encouraged; Step 9. Use of teats or pacifiers; Step 10. Mothers were given timely access to ongoing support and care at the discharge (WHO 2008, WHO 2020). Measured steps per study are described in more detail in Table 2.

BFH Baby-Friendly hospitals, non-BFH not Baby-Friendly hospitals, NR Not reported, NS Not statistically significant, SSC early skin-to-skin contact, BF early breastfeeding initiation * $p < 0.005$ ** $p < 0.001$

(1) mothers provided with breastfeeding information (2) early but interrupted skin-to-skin contact and initiation of breastfeeding (3) varying practical support for breastfeeding (4) avoiding unnecessary supplementary feeding and pacifier use (5) rooming-in and encouraging breastfeeding on demand (6) continuity of support following hospital discharge (Table 4).

3.2.1. Mothers provided with breastfeeding information

The maternal perspective on being provided with breastfeeding information during pre- or postnatal period were explored in seven studies (Table 4). Majority of mothers (68-96 %) were provided with breastfeeding information or counselling during their prenatal or postnatal stay in the hospital (Chien et al., 2007; Ducharme-Smith et al., 2021; Hawkins et al., 2014; Marinelli et al., 2019; Souza et al., 2011). Most mothers (77-78%) saw written breastfeeding policies posted in the hospitals (Chien et al., 2007; Mosher et al., 2016) and could understand words they used (Chien et al., 2007). Nearly all mothers (94 %) agreed that the healthcare professionals had enough knowledge and taught them the importance of breastfeeding (Chien et al., 2007) and they (93%) were encouraged to breastfeed (Mosher et al., 2016).

The qualitative findings showed positive maternal experiences (Miller et al., 2018, Byrom et al., 2020). Mothers were mostly satisfied with the Ten Steps practices they encountered in the hospital (Miller et al., 2018) and experienced a good balance within the practical support and information they were provided with by the healthcare professionals (Byrom et al., 2020). The care and support provided by the professionals was also experienced as 'emotionally engaging' helping mothers to feel reassured and confident in caring and feeding their infant as well as responsive to their needs (Byrom et al., 2020). However, a Taiwanese qualitative study revealed that mothers whose infant was diagnosed with neonatal jaundice, experienced that the breastfeeding information provided by the professionals focused mainly on the positive aspects of breastfeeding and possible problems were not discussed in advance. Healthcare professionals' optimistic approach to breastfeeding and ignorance of possible breastfeeding problems caused a negative surprise for mothers when their infant was diagnosed with jaundice (Chu et al., 2019).

3.2.2. Early but interrupted skin-to-skin contact and initiation of breastfeeding

Maternal perceptions and experiences on support for early skin-to-skin contact (SSC) between the mother and infant and early initiation of breastfeeding were studied in 13 studies (Table 4). No mutual definition of early SSC and initiation of breastfeeding existed within the study settings.

Although it was common for most mothers (58-91 %) to experience early SSC with their infant (Abolyan, 2006; Brodribb et al., 2013; Marinelli et al., 2019; Souza et al., 2011; Spaeth et al., 2017; Zakarija-Grkovic et al., 2018), only a minority of mothers (9-34 %) reported to continue SSC for over half an hour (Abolyan, 2006; Souza et al., 2011; Rocha-Sampaio et al., 2016; Zakarija-Grkovic et al., 2018). In a Brazilian study, mothers reported no early SSC at all after a caesarean delivery (Rocha-Sampaio et al., 2016).

Early initiation of breastfeeding within the first half an hour after delivery was reported by fewer than half of the mothers (11-48 %) (Chien et al., 2007; Marinelli et al., 2019; Mosher et al., 2016; Souza et al., 2011; Zakarija-Grkovic et al., 2018) whereas more mothers (53-83 %) experienced the first attempt to breastfeed within one hour after birth (Brodribb et al., 2013; Ducharme-Smith et al., 2021; Hawkins et al., 2014; Spaeth et al., 2017). In a Russian study, the median time for breastfeeding initiation according to mothers' experiences was within the two first hours after birth (Abolyan, 2006). In a qualitative study, mothers initiated breastfeeding 1-2 h after a caesarean delivery although nearly all mothers experienced early SSC regardless of the delivery mode (Miller et al., 2018).

3.2.3. Varying practical support for breastfeeding

Maternal perceptions and experiences of practical breastfeeding support were reported in 13 studies (Table 4). Most mothers (55-93 %) reported receiving practical help and advice for breastfeeding such as positioning and latching or maintaining lactation by hand-expressing milk (Abolyan, 2006; Chien et al., 2007; Ducharme-Smith et al., 2021; Hawkins et al., 2014; Marinelli et al., 2019; Souza et al., 2011; Spaeth et al., 2018; Zakarija-Grkovic et al., 2018). However, a Czech study reported that only a few mothers (25 %) were taught how to hand-express milk (Zakarija-Grkovic et al., 2018).

In the case of breastfeeding problems, nearly all mothers (93 %) reported receiving counselling from healthcare professional for their problems (Marinelli et al., 2019). However, one study reported that less than two-thirds of mothers considered that the support they received from the healthcare professionals did not resolve their current problem with breastfeeding. Exclusively breastfeeding mothers had a higher rate of receiving support compared to mothers who supplemented with formula milk (73 % vs 55 %, not significant) (Lewkowicz et al., 2019). Based on findings of a qualitative study, mothers felt they were left without adequate support from the healthcare professionals; more support was needed to assess latch issues and manage breastfeeding related pain. Additionally, the maternal perception of insufficient milk supply was not addressed (Miller et al., 2018).

3.2.4. Avoiding unnecessary supplementary feeding and pacifier use

Maternal perceptions and experiences on supplementary feeding and pacifier use were examined in 13 studies (Table 4). Most mothers (59-89 %) reported that their infant did not receive any supplementary milk during their hospital stay (Abolyan, 2006; Brodribb et al., 2013; Hawkins et al., 2014; Jung et al., 2019; Marinelli et al., 2019; Spaeth et al., 2017; Souza et al., 2011). In five studies, half or less of the mothers (35-50 %) reported that their infant did not receive supplementary milk while in the hospital (Chien et al., 2007; Ducharme-Smith et al., 2021; Lewkowicz et al., 2019; Mosher et al., 2016; Zakarija-Grkovic et al., 2018).

Justification for supplementary feeding were explored in three studies (Miller et al., 2018; Mosher et al., 2016; Zakarija-Grkovic et al., 2018). A quantitative study from the Czech Republic found that nearly all mothers (97 %) whose infant had supplementary milk were informed of the need for supplementation (Zakarija-Grkovic et al., 2018). In contrast, findings of one qualitative study showed that the breastfeeding intention or benefits of breastfeeding were not commonly discussed with mothers before initiating supplementary feeding (Miller et al., 2018). In a Saudi-Arabian study, 18 % of the mothers whose infant had supplementary milk stated that it was due to medical reasons and 28 % stated supplementary feed was at the initiative of the staff (Mosher et al., 2016). Furthermore, in three studies, some mothers (5-40 %) reported receiving a formula gift pack from the healthcare professionals (Hawkins, 2014; Jung, 2019; Mosher et al., 2016).

Most mothers (52-100 %) reported that neither they nor hospital staff gave infant a pacifier to suckle (Abolyan, 2006; Hawkins et al., 2014; Souza et al., 2011; Spaeth et al., 2018; Zakarija-Grkovic et al., 2018). However, in a study conducted in the United States, nearly all mothers (84 %) reported that their infant was using either a pacifier or nipple shield during their hospital stay (Ducharme-Smith et al., 2021). In a Czech study, very few mothers (8 %) were educated about the risks involved in pacifier use (Zakarija-Grkovic et al., 2018) but in a Brazilian study, most mothers (64 %) were counselled to avoid pacifier use (Souza et al., 2011). According to mothers participating a qualitative study, healthcare professionals had a positive attitude towards pacifier use and pacifiers were provided to mothers on request (Miller et al., 2018).

3.2.5. Continuously rooming-in and encouraging breastfeeding on demand

Maternal perceptions and experiences of rooming-in together with infant and being encouraged to breastfeed on demand were explored in 11 studies (Table 4). Based on seven studies, most mother-infant dyads (84-99 %) continuously roomed-in together during their hospital stay (Abolyan, 2006; Brodribb et al., 2013; Hawkins et al., 2014; Spaeth et al., 2017; Souza et al., 2011; Zakarija-Grkovic et al., 2018). In addition, mothers participating in a qualitative study were continuously rooming-in with their infant except those whose infants were cared in NICU (Miller et al., 2018). However, the findings of three studies showed half or less of mothers (15-50 %) rooming-in with their infant (Chien et al., 2007; Ducharme-Smith et al., 2021; Mosher et al., 2016).

Most mothers (59-79 %) reported being encouraged to breastfeed their infant on demand (Chien et al., 2007; Ducharme-Smith et al., 2021; Hawkins et al., 2014; Mosher et al., 2016; 2011; Souza et al., 2011; Spaeth et al., 2017). In a Czech study, 55 % of mothers received other advice or no advice at all on how often infant should be fed and 33 % were told to breastfeed for as long as their infant

Table 4
Categories linked to the reviewed studies.

Author and year	Mothers provided with breastfeeding information	Early but interrupted skin-to-skin contact and initiation of breastfeeding	Varying practical support for breastfeeding	Avoiding unnecessary supplementary feeding and pacifier use	Continuously rooming-in and encouraging breastfeeding on demand	Continuity of support following hospital discharge
Abolyan 2006		x	x	x	x	
Brodribb et al. 2013		x		x	x	
Byrom et al. 2020	x		x			
Chien et al. 2007	x	x	x	x	x	x
Chu et al. 2019	x					
Ducharme-Smith et al. 2021	x	x	x	x	x	x
Hawkins et al. 2014	x	x	x	x	x	x
Jung et al. 2019				x		x
Lewkowitz et al. 2019			x			
Marinelli et al. 2019	x	x	x	x		
Miller et al. 2018		x	x	x	x	x
Mosher et al. 2016	x	x	x	x	x	
Ortiz et al. 2011		x	x	x	x	x
Rocha-Sampaio et al. 2016		x				
Souza et al. 2011		x	x	x	x	x
Spaeth et al. 2017		x	x	x	x	
Zakarjija-Grkovic et al. 2018		x	x	x	x	

wants (Zakarjija-Grkovic et al., 2018). Based on the results of a qualitative study, some mothers experienced that the healthcare professionals were mainly encouraging mothers to breastfeed frequently because of infant's medical condition, for example, low blood glucose (Miller et al., 2018). Taiwanese mothers felt they were obliged to breastfeed regardless of infant's jaundice, causing them stress and anxiety (Chu et al., 2019).

3.2.6. Continuity of support following hospital discharge

Maternal perceptions and experiences of continuity of the breastfeeding support following hospital discharge were studied in seven studies (Table 4). Minority of mothers (5-42 %) were informed about breastfeeding support groups at the time of discharge (Chien et al., 2007; Mosher et al., 2016; Souza et al., 2011). However, according to a recent cross-sectional study conducted in the US, almost all mothers (85 %) reported that they were referred to breastfeeding support groups (Ducharme-Smith et al., 2021). Nearly all mothers (79-87 %) received a telephone number which they could contact in case they needed support for breastfeeding after hospital discharge (Hawkins et al., 2014; Jung et al., 2019). Based on findings of a qualitative study, postnatal community support was not effectively provided although mothers had problems with breastfeeding (Miller et al., 2018).

3.3. Differences in maternal perceptions and experiences between Baby-Friendly hospitals and non-Baby-Friendly hospitals

Studies with a comparative design (n=11) compared maternal perceptions of hospitals' compliance with the Ten Steps practices between Baby-Friendly and non-Baby-Friendly hospitals (Table 3). Only one study (Chien et al., 2007) measured and compared hospitals' compliance with all the Ten Steps practices whereas most of the studies compared compliance for only some of the steps. All studies but one compared maternal perceptions regarding hospitals' compliance with the step 4 (Jung et al., 2019). Generally, mothers in Baby-Friendly hospitals reported breastfeeding support that was more compliant with the Ten Steps compared to mothers in non-Baby-Friendly hospitals, although the differences in original studies were not always statistically significant. Significantly better compliance in Baby-Friendly hospitals was observed particularly for steps 6 and 9; mothers in Baby-Friendly hospitals reported less supplemental feeding and pacifier use compared to mothers in non-Baby-Friendly hospitals (Table 3).

4. Discussion

This integrative review introduced novel evidence regarding breastfeeding support in the Baby-Friendly hospitals based on maternal perspective. Furthermore, differences in maternal perceptions of breastfeeding support between mothers in Baby-Friendly hospitals and non-Baby-Friendly hospitals were described if a comparative design was used. Most of the included studies were focused on measuring the hospital's compliance with the Ten Steps from the maternal perspective. The findings of the quantitative studies indicated that breastfeeding support, from the maternal perspective, was mainly but not completely adherent to the Ten Steps

practices. Most mothers were exclusively breastfeeding during the hospital stay and no supplemental milk was offered to infant. However, some mothers were offered formula gift packs by the hospital staff which violates the Code of Marketing of Breastmilk Substitutes. Based on studies with a comparative design, the compliance with the Ten Steps appeared to be greater in the Baby-Friendly hospitals than in the non-Baby-Friendly hospitals, however, this evidence relies mainly on the findings from observational studies. Most of the included studies were published prior to 2018, when the revision of the Ten Steps took place. Due to this revision, it would be appropriate to further investigate maternal perceptions and experiences of the revised Ten Steps (Aryeetey and Dykes, 2018).

The three qualitative studies indicated that mothers were mainly satisfied with the breastfeeding support in the Baby-Friendly hospitals, although they also reported inconsistent and inadequate support. Breastfeeding information and support provided to mothers did not always address problems that mothers were encountered with, such as insufficient milk supply or breastfeeding challenges related to neonatal jaundice. This is an important issue to consider as a lack of adequate and appropriate support for breastfeeding may lead to an early and unintended cessation of breastfeeding (McFadden et al., 2017; Chang et al., 2019). Moreover, further qualitative studies are needed to better understand the impact of breastfeeding interventions on mothers (Leeming et al., 2017).

Evidence from the maternal perspective showed that early skin-to-skin contact (SSC), rooming-in, and guidance to breastfeed on demand were well facilitated in the hospitals. However, regardless of the mothers initiating early skin-to-skin contact, the duration of SSC was often shorter than the recommended 60 min. Previously it has been shown that non-urgent practices, such as weighing the baby or assisting the mother to have a shower, interrupted the continuous SSC between the mother and her infant (Allen et al., 2019). Early SSC establishes a good starting point for breastfeeding as it contributes to the initiation, length, and exclusivity of breastfeeding, and increases support for better physiological stability of the infant in adapting to extrauterine life (Moore et al., 2016). This implicates the need for practices to better facilitate uninterrupted SSC during the immediate postpartum period by avoiding unnecessary care procedures (Brimdyr et al., 2018). Based on the findings of two studies, mothers who had a caesarean delivery generally experienced a delay of immediate SSC and initial breastfeed. Further studies are also needed to examine breastfeeding support as perceived and experienced by mothers undergoing a caesarean or assisted vaginal delivery as these might intervene in routine postpartum care and negatively impact breastfeeding support.

The results of our review indicate that there may be lack of a systematic breastfeeding support provided to mothers at hospital discharge. Breastfeeding support offered to mothers varied between the studies; some were offered a telephone number whereas others were referred to breastfeeding support groups; however, support provided at discharge was not systematically organized. Although most mothers received a phone number, they could use to seek support, only a minority of mothers were informed about breastfeeding support groups at hospital discharge (Lojander et al., 2022). Birth hospitals struggle with implementing this practice (step 10) (WHO, 2018) although ensuring the continuity of support after hospital discharge leads to improved breastfeeding outcomes and thus should be considered important for the continuation of breastfeeding (Pérez-Escamilla et al., 2016). In 2018, the Ten Steps were revised to better address the current needs for support, and to revise practices that lacked strong evidence (Aryeetey & Dykes, 2018). The current step 10 (coordinate discharge so that parents and their infants have timely access to ongoing support and care) is now more comprehensively emphasizing the continuity of breastfeeding support after hospital discharge. This revision may now have impacted the Baby-Friendly hospitals to provide mothers with more sustainable forms of support at discharge, rather than just referring mothers to breastfeeding support groups. Further research and new strategies are needed to establish a smoother transition of care and support for mothers after hospital discharge with a sustained support for continuation for breastfeeding (McLelland et al., 2015, Murphy et al., 2022).

The findings of our review suggest that mothers in the Baby-Friendly hospitals perceived the breastfeeding support more adherent to the Ten Steps practices, compared to mothers in the non-Baby-Friendly hospitals. Although this finding was expected, maternal views on breastfeeding support should be emphasized to draw conclusions how breastfeeding support is perceived and experienced by mothers. Moreover, this evidence needs further assessment with more rigorous designs. In some studies, the differences between Baby-Friendly and non-Baby-Friendly hospitals were small. In societies where breastfeeding is a norm and the Ten Steps practices are incorporated into the routine care, differences between Baby-Friendly hospitals and non-Baby-Friendly hospitals may be small (Brodrribb et al., 2013). On the other hand, a previous study has shown that BFHI implementation is positively associated with healthcare professional's breastfeeding attitudes and breastfeeding support practices in birth hospital (Mäkelä et al., 2021). Based on this, it is likely that mothers in Baby-Friendly hospitals do perceive support that is more adherent to the Ten Steps practices, compared to mothers in non-Baby-Friendly hospitals.

The majority of mothers in Baby-Friendly hospitals reported that their infant did not receive any supplementary milk during their hospital stay. Exclusive breastfeeding (step 6) and the recommended avoidance of pacifier use (step 9) do not directly describe the breastfeeding support which mothers are provided with, but perhaps reflect a successful implementation of all the other steps, e.g., rooming-in improves breastfeeding and thus decreases need for supplementary feeding. Rooming-in refers to mother-infant couples continuously staying together during the hospital stay, promoting successful breastfeeding and leading to optimal short- and long-term health outcomes for mothers and infants (Crenshaw, 2014). A dose-response relationship exists between the number of steps that mothers experience, and the increase in the likelihood of successful breastfeeding (Pérez-Escamilla et al., 2016) Although a dose-response relationship exists between the number of steps that mothers experience, and the increase in the likelihood of successful breastfeeding (Pérez-Escamilla et al., 2016), it is important to acknowledge that the association of each step to breastfeeding may be independent and not cumulative (Ducharme-Smith et al., 2021).

According to the standards defined by the WHO and UNICEF, each step of the Ten Steps is required to achieve a 75-80 % compliance approval by randomly selected mothers in facilities requesting designation as being Baby-Friendly (WHO, 2018). Our findings showed that the target level was not always achieved as maternal reported compliance for Ten Steps practices did not reach the standards. Low compliance was observed, for example, in the full implementation of step 4 (early SSC and initiation of

breastfeeding). Moreover, some mothers received breastmilk substitutes as gifts from the hospital, which violates the Code of Marketing of Breastmilk Substitutes. The Baby-Friendly hospitals struggle to maintain an acceptable level of compliance with the Ten Steps practices after their designation (WHO, 2018). Regular reassessment and continuous training of healthcare professionals are needed to maintain a satisfactory level of the standards of the BFHI (Zakarija-Grkovic et al., 2018; WHO, 2018). Investing in Ten Steps compliance helps to achieve breastfeeding goals (Spaeth et al. 2017) and thus it is important to recognize factors that inhibit hospitals from a sustainable implementation of the Ten Steps practices and to identify those promoting it. A process evaluation could be an appropriate method to adequately address whether the implementation of the Baby-Friendly Hospital Initiative in the unit has been successful and therefore lead to a more sustainable implementation the initiative.

The included studies were conducted in several countries and diverse cultural contexts. The Baby-Friendly Hospital is a global initiative which has been introduced and implemented in almost all the countries in the world (WHO, 2018). Mothers may experience support differently depending on their previous experiences, preferences, and the cultural context in which they are situated (Leeming et al., 2017). It must be acknowledged that there may be differences related to breastfeeding practices and beliefs within different cultural contexts (Rehayem et al., 2020; Batal et al., 2006; Brown, 2015). Maternal perceptions and experiences of breastfeeding support in the Baby-Friendly hospitals are not established in a void, but in a cultural and societal context which should be recognized when exploring the theme (Aryeetey and Dykes, 2018; Leeming et al., 2017; Chien et al., 2007). Therefore, comparing maternal perceptions and experiences on breastfeeding support within different countries and cultural settings should be done cautiously. Cultural factors may influence how mothers perceive and experience the support that they are provided with.

4.1. Limitations

This integrative review has its limitations. First, it is possible that the selected search terms and databases did not conclusively cover all the existing publications investigating the topic. Breastfeeding support as a concept lacks a clear definition. In this review, we used a broad definition of the concept to comprehensively study the phenomenon and meet the aim of the review. Second, our search strategy might have unintentionally excluded studies with relevant data regarding the aim of the review, although a rigorous search was performed in several databases. Third, although data analysis was initially performed by one author it was, nevertheless confirmed by the members of the research group throughout the analysis process.

There are also limitations regarding the included studies. The data collection methods of quantitative studies mainly consisted of binary response questionnaires based on maternal recall. In some settings, mothers participated in the study months after hospital discharge, which may have caused a lack of accuracy in the responses. It is also possible that only the breastfeeding mothers or mothers with a positive breastfeeding attitude participated in the study causing some degree of bias in results. Three studies included only low-income mothers; therefore, it is possible that mothers participating in these studies reported different support compared to other populations. Particularly studies including only WIC participants (Ducharme-Smith et al., 2021; Jung et al., 2019) might have reported better support at hospital discharge compared to other studies.

Evidence of the included studies cannot be considered strong, as they all lacked randomization and control groups. Studies measuring maternal perceptions on hospital's compliance with the Ten Steps measured steps differently, e.g., definition of early SSC and initiation of breastfeeding varied between studies. Thus, findings related to Ten Steps compliance from maternal perspective may be inaccurate. More rigorous designs are needed to have more robust evidence about hospitals' compliance with the Ten Steps. A more systematic analysis could have resulted in more rigorous findings, but as the measurements and surveys used in reviewed studies greatly varied, thus a descriptive analysis was used.

Moreover, the qualitative studies were scarce, indicating a gap in the exploration of the maternal experiences related to breastfeeding support in Baby-Friendly hospitals. Hence, more qualitative studies are needed to gain a more comprehensive understanding of the phenomenon.

5. Conclusions

The evidence of this review suggests that mother-infant couples in Baby-Friendly hospitals are provided with breastfeeding support that is mainly but not completely adherent to the Ten Steps evidence-based practices as regards the maternal perspective. Qualitative findings suggested that breastfeeding support in the hospitals was not always sufficient to resolve mothers' breastfeeding problems; however, mothers were mainly satisfied with the support during their hospital stay. Mothers in the Baby-Friendly hospitals perceived breastfeeding support to be more adherent to the Ten Steps practices, compared to mothers in non-Baby-Friendly hospitals.

The Baby-Friendly hospitals struggled to maintain a satisfactory level of compliance with the Ten Steps after the designation; thus, it seems necessary that a frequent assessment of the breastfeeding support practices from maternal perspective are carried out and strategies that facilitate a more sustainable implementation of the initiative are considered. Moreover, there is a need for studies investigating maternal perceptions of the recently revised Ten Steps. Additionally, a deeper understanding of the maternal needs and emotional experiences regarding breastfeeding support in the Baby-Friendly hospitals is necessary to draw conclusions about the maternal acceptance of the initiative.

Registration and protocol

This review was not registered nor was a protocol was prepared.

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CRediT authorship contribution statement

Jaana Lojander: Conceptualization, Formal analysis, Data curation, Investigation, Methodology, Visualization, Writing – original draft. **Heli Mäkelä:** Conceptualization, Formal analysis, Investigation, Methodology, Validation, Visualization, Writing – review & editing. **Hannakaisa Niela-Vilén:** Conceptualization, Methodology, Supervision, Validation, Writing – review & editing.

Declaration of Competing Interest

The authors declare no conflicts of interest.

Supplementary materials

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