

ARTICLE

Attitudes of mothers and health care providers towards behavioural interventions promoting breastfeeding uptake: A systematic review of qualitative and mixed-method studies

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Abstract

Purpose: Recommendations for exclusive breastfeeding are not often adhered to despite the robust evidence of its benefits. This systematic review aims to collate evidence on the attitudes mothers and health care providers have towards breastfeeding interventions to understand what aspects best contribute to acceptability and feasibility.

Methods: This review further investigates the value of identifiable behaviour change techniques (BCTs) to uncover which components of an intervention are perceived to be most useful and acceptable. The main biomedical databases were searched, and 17 ($n=17$) studies met the inclusion criteria.

Results: A total of nine BCTs were identified within the interventions. The thematic analysis produced four main domains: usefulness, accessibility, value and sustainability. Women discussed the importance of the support they received in these interventions and demonstrated a positive view towards three BCTs: ‘social support (unspecified)’, ‘instruction on how to perform behaviour’ and ‘demonstration of behaviour’. Additionally, women highlighted the benefit of personal, non-clinical and flexible emotional and practical support from peers, lactation consultants and support groups. Health care providers echoed these opinions and specifically highlighted the usefulness of interventions that allowed for continuity of care and more personal breastfeeding support.

Conclusions: These findings suggest that ongoing practical as well as emotional support is crucial for standard in-hospital

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support to succeed at increasing breastfeeding rates. Future research would need to better understand the nuances of the interventions among women and providers to enhance their implementation.

KEYWORDS

acceptability, behaviour change techniques, breastfeeding intervention, mother, qualitative synthesis, systematic review

Statement of Contribution

What is already known

- Rates of exclusive breastfeeding worldwide demonstrate that recommendations are not widely adhered to.
- Previous research indicates that support-based interventions have the highest impact on rates of exclusive breastfeeding.
- Despite research suggesting that both patient and provider opinions have an impact on the success of interventions, no review has been conducted to examine studies that have investigated the perspectives of these individuals in regard to breastfeeding promoting interventions.

What this article adds

- This review demonstrates that women and health care providers view breastfeeding promotion interventions including BCTs positively, indicating a general gap in pro-breastfeeding measures available to mothers outside of the standard care.

Women and their health care providers especially found value in interventions including BCTs that provided practical and emotional support from peers and professionals in a way that fit into their new circumstances as a parent.

INTRODUCTION

Because of the health benefits of breastfeeding for both mother and baby, the World Health Organization (WHO), the UK National Health Service (NHS) and the American Academy of Pediatrics, among other authorities, recommend exclusive breastfeeding for the first 6 months of life followed by a gradual introduction of solid foods in combination with breastfeeding for up to 2 years (Centers for Disease Control and Prevention, 2020b; National Health Service, 2020; World Health Organization, 2020). Exclusive breastfeeding (EBF) refers to the infant's consumption of breast milk without supplementation by formula or other sources of nutrition (World Health Organization, 2001). The United Nations Children's Fund (UNICEF) in partnership with WHO has promoted the 'Baby-Friendly Hospital Initiative' (BFHI) which aims to set better standards of care for the post-partum period spent in hospital, including steps to successful breastfeeding (UNICEF, n.d.; World Health Organization, 1998).

Breastfeeding is associated with various immediate and long-term health benefits and improved quality of life for the mother and baby (Centers for Disease Control and Prevention, 2020b; Ip et al., 2007; Louis-Jacques & Stuebe, 2018; World Health Organization, 2020). Breast milk provides benefits to the infant by improving immune system functioning, decreasing risk of becoming overweight or obese later in life and decreasing risk of diabetes (Ballard & Morrow, 2013; Breakey et al., 2015;

Ip et al., 2007; Moss & Yeaton, 2014; Victora et al., 2016; World Health Organization, 2020). For the mother, benefits include a reduced risk of breast and ovarian cancer (Ip et al., 2007). These effects are seen in both low- and middle-income countries (LMICs) as well as in high-income countries (HICs) (Victora et al., 2016; World Health Organization, 2020). Additionally, data indicate that these public health benefits are experienced throughout the wider community in the form of lower health care costs and increased productivity (Rollins et al., 2016; Siregar et al., 2018; Smith et al., 2002; Victora et al., 2016).

Despite these recommendations and proven health benefits, many women either never initiate breastfeeding or quit the process early on (Victora et al., 2016). Breastfeeding is more common in LMICs, though rates are still low; the prevalence of breastfeeding at 12 months is higher in LMICs (<37%) than in HICs (<20%) (Victora et al., 2016). Although the prevalence in most HICs is lower than LMICs, there are significant differences between HICs. In 2010, the last UK-wide Infant Feeding Survey revealed that only about 1% of infants were still exclusively breastfed and 34% receiving some breast milk at 6 months, despite an initiation rate of 81% (UNICEF, 2021). Comparatively, in the United States, an average of 46.9% of infants are exclusively breastfed through 3 months and 25.6% are exclusively breastfed through 6 months, with variation between states (Centers for Disease Control and Prevention, 2020a). Similarly, Scandinavian countries as Sweden and Norway also showed significant disparities in prevalence of breastfeeding at 12 months, 16% and 35% respectively (Victora et al., 2016).

Demographic differences (including age, socio-economic status and race) have an impact on likelihood to breastfeed exclusively for the recommended amount of time (Colombo et al., 2018; Jones et al., 2015; Kitano et al., 2016; Victora et al., 2016). This impact differs between LMICs and high-income countries, however, these groups are approaching parity over time (Colombo et al., 2018; Jones et al., 2015; Victora et al., 2016). In high-income countries, likelihood to breastfeed is impacted by the mother's birth country (Jones et al., 2015).

Common barriers for breastfeeding include issues with balancing breastfeeding and employment, lack of education, fear of pain and perceived inadequacy with milk supply (Kirkland & Fein, 2003; Li et al., 2008; Roe et al., 1999; Smith & Forrester, 2013). Barriers are also often socially based and can include feelings of judgement for breastfeeding in public and the influence of the opinions of family, friends and spouse (Bar-Yam & Darby, 1997; Tarrant et al., 2010). Many barriers are exacerbated by the mothers who are from a disadvantaged socio-economic background (Jones et al., 2015).

Common EBF interventions internationally include antenatal or postnatal breastfeeding classes (Abdulahi et al., 2018; Aksu et al., 2011; Schlickau & Wilson, 2005). Some interventions offer incentives, such as financial incentives, to continue breastfeeding (Moran et al., 2015; Morgan et al., 2015; Washio et al., 2017). Others are centred on providing improved support from peers and lactation consultants (Benedict et al., 2018; McFadden et al., 2017; O'Sullivan et al., 2019). Previous systematic reviews have found that support-based interventions, especially those that combine individual and group methods, have the greatest impact on EBF rates (Haroon et al., 2013; Victora et al., 2016). Another study reported that community-based interventions provide the best outcomes (Rollins et al., 2016). Researchers have indicated that it is best practice to develop an intervention using appropriate theory (Craig et al., 2013). Information about the behaviour components used in EBF interventions is limited, but a recent systematic review of the effectiveness of EBF interventions found that they most commonly employ the use of 'credible source', 'social support (unspecified)', 'instructions on how to perform behaviour' and 'problem solving' (Kassianos et al., 2019).

The acceptability of an intervention to both the intervention deliverers and recipients is increasingly seen as crucial to the success of an intervention (Sekhon et al., 2017). Understanding the perspectives of those delivering interventions is important because of the impact they may have on the outcome. If an intervention is perceived as acceptable, recipients are more likely to adhere to the recommendations and interventions viewed positively by deliverers are more likely to be delivered as intended (Sekhon et al., 2017). Understanding these perspectives can help assess what contributes to an intervention's success or help with explaining failure.

To ensure the sustainability of EBF interventions, it is necessary to understand the attitudes of women and their health care providers. This systematic review aims to collate qualitative evidence from published qualitative and mixed-method studies that examine the perspectives of women and health care providers towards breastfeeding-promoting interventions to understand what contributes to acceptability and feasibility. This review examined studies with post-partum follow-up data as an expressed intention to breastfeed does not necessarily relate to actual behaviour (Louis-Jacques & Stuebe, 2018). The behavioural components in each intervention will be identified when possible, to connect the attitudes of a mother or her health care provider to components of an intervention.

METHODS

The protocol of this review is available in the PROSPERO registry (reference: CRD42020177986). The review is reported according to the PRISMA statement (Page et al., 2021).

Search strategy and study selection

Published peer-reviewed studies including the qualitative investigation of mothers' and their health care providers' attitudes towards breastfeeding interventions were searched in electronic databases (MEDLINE, Scopus, PsycINFO, EMBASE and CINAHL). The initial search was conducted in May and June of 2020 and the screening stages completed between June and August of 2020. The study question and search strategy were guided by SPIDER, a tool designed to form search strategies for qualitative and mixed-method studies (Cooke et al., 2012). The search strategy was complemented with a search strategy conducted on behavioural interventions and breastfeeding, and previously published in a systematic review (Kassianos et al., 2019). PICOS was then used to develop inclusion and exclusion criteria. The full search strategy for all databases can be found in the Appendix S1.

The inclusion criteria were as follows:

- Participants—Post-partum mothers and health care providers (i.e. physicians, nurses, midwives, peer supporters and nutritionists).
- Interventions—Post-partum breastfeeding interventions aimed at promoting breastfeeding behaviour. Pre-natal and postnatal interventions were included where post-partum follow-up data are reported. Post-partum follow-up is necessary to understand which interventions helped women actually breastfeed. EBF was the primary target, however, interventions that allowed for mixed breastfeeding were included to ensure information that may translate into benefits for EBF was not lost.
- Comparison—Not applicable.
- Outcome—Studies that reported attitudes towards the intervention, not changed attitudes towards breastfeeding.
- Study design—Studies including qualitative data with either qualitative or mixed-method research design

Exclusion criteria were as follows:

- Studies without post-partum follow-up
- Studies with only quantitative data
- Secondary data sources (i.e. systematic reviews)
- Non-peer-reviewed publications

Only publications published in English were included.

Study screening

One author (SL) screened titles and abstracts, and then full texts of included references against the inclusion and exclusion criteria. Two authors (ARG and AK) screened 10% of studies at each stage of the screening process to minimize bias. The double screening was carried out at the beginning of each stage and disagreements solved through discussion. After the screening of titles and abstracts, and full texts, the references from a search strategy of a quantitative review conducted by the team on behavioural interventions and breastfeeding was reviewed (Kassianos et al., 2019). In addition, the citations of the studies included in the mentioned review were checked in order to identify any potentially relevant missing study (Kassianos et al., 2019).

Defining an intervention

An intervention in the context of this review is defined as a programme developed with the purpose of promoting EBF but does not include widespread implemented policies such as the BFHI, as there is substantial research about these already (UNICEF, n.d.; World Health Organization, 1998) and it is beyond the scope of the review. Furthermore, according to the Behaviour Change Wheel framework proposed by Michie et al. (2011), the interventions' functions should be linked to the COM-B (capability, opportunity and motivation) model through their behaviour change techniques (BCT) components.

Data extraction

Data extraction was conducted using an Excel sheet developed for the purpose of the review. For each study, information regarding study characteristics was manually extracted including author, publishing date, study title, location of study, study design, data collection period, eligible participants and total sample size and recorded in a spreadsheet. Participant information was recorded including age, gender breakdown, week at recruitment, week at start of intervention, week at follow-up, number of participants, number of participants lost to follow-up and data collection method. Information about the intervention was recorded including intervention name, type of intervention, whether it was prenatal or postnatal, intervention intensity, length of intervention, theoretical background, method of intervention delivery, person delivering the intervention, relevant training, follow-up period, aim of intervention and key findings.

BCT coding

Behaviour change techniques (BCTs) act as the active components of an intervention to enact change and being able to identify them in an intervention can allow researchers and policymakers to pinpoint an intervention's most effective elements and reproduce them. When possible, elements of each intervention were coded as BCT components based on the description of the intervention reported by the studies. One author (SL) who undertook online training in BCT taxonomy identified evident BCTs in the included studies as defined by the BCT v.1 taxonomy (Michie et al., 2011). Two other authors (ARG and AK) checked this coding work on included studies. Disagreements were solved by discussions among the three authors. BCT coding was accompanied with a measure of '+' indicating when a BCT was possible but the information unclear or a '++' when it was certain a BCT was present (Michie et al., 2011).

Methodological quality

The included studies' quality was assessed using the six criteria of the 'weight of evidence' as developed by the EPPI-Centre (Gough, 2007; Thomas & Harden, 2008). Reliability was based on study sampling, data

collection, analysis and findings. Usefulness was based on the depth of the findings and ability to answer the key research questions. Based on these categories, each study was graded as 'high', 'medium' or 'low'. One author (SL) appraised the quality of all included studies, and the other authors conducted the critical appraisal of 10% of the articles to minimize bias.

Thematic analysis

To develop overarching concepts and draw relevant conclusions, a thematic analysis was conducted to identify themes from each study's qualitative data. The qualitative information provided by the included studies was first coded line-by-line and then into relevant overarching themes, which aimed to describe the information, and subsequently sorted into analytical subthemes to uncover patterns between intervention type and perceptions of impact and acceptability (Thomas & Harden, 2008). The EPPI-Reviewer was used for this step and themes were agreed by the authors through discussion after exploring coded information. In order to create a cohesive narrative of the opinions regarding breastfeeding interventions, translation of concepts across the studies was necessary and was carried out through the stages of the process: the line-by-line coding, the organization of the evidence into overarching themes and the generation of analytical subthemes (Thomas & Harden, 2008). These identified themes were used to understand how women and their health care providers interact and think about various types of breastfeeding interventions. Text irrelevant to the study aims was not coded. For example, text related to other sources of breastfeeding support other than the specific intervention or concerning initial attitudes towards breastfeeding was excluded from coding as understanding an intervention's contribution was the aim of this study.

RESULTS

Identification of studies

The initial search returned 1449 articles. Title screening of these articles led to the exclusion of 1147 of them due to irrelevance. The remaining 302 abstracts were screened and another 212 were excluded for reasons such as lack of an intervention, lack of qualitative data, being a proposed study (rather than completed) or lacking specific perspectives on the intervention. A further 73 were excluded following full-text screening. The remaining 17 studies were included in the review. Figure 1 displays the stages of screening and reasons for exclusion.

Study information

Study characteristics are displayed in Table 1. All 17 included studies were published between 2000 and 2020. Altogether, the opinions of 526 women, health professionals and health care providers were recorded on various breastfeeding interventions. The exact breakdown is unclear. Most studies presented the views of only the mothers ($n=11$, 64.70%), though some studies also incorporated the views of intervention and/or health care providers ($n=3$, 17.65%) and the remainder focused only on the views of providers ($n=3$, 17.65%). Fifteen studies (88.23%) were conducted in OECD (Organisation for Economic Co-operation and Development) countries (Republic of Ireland, United States, United Kingdom, Australia and Canada) and only two (11.76%) were not (Lebanon and South Africa) (Organisation for Economic Co-operation and Development, 2020). Most studies were exclusively qualitative ($n=10$, 52.82%), while some studies contained qualitative data collected from mixed-methods studies, including quasi-experimental and feasibility study designs, ($n=4$, 23.53%) or from a mixed-method randomized control trial (RCTs) ($n=3$, 17.65). Age was only reported in some studies ($n=10$, 58.82%), when this data were reported, it was always the mother's age, which ranged from 16 to 44.

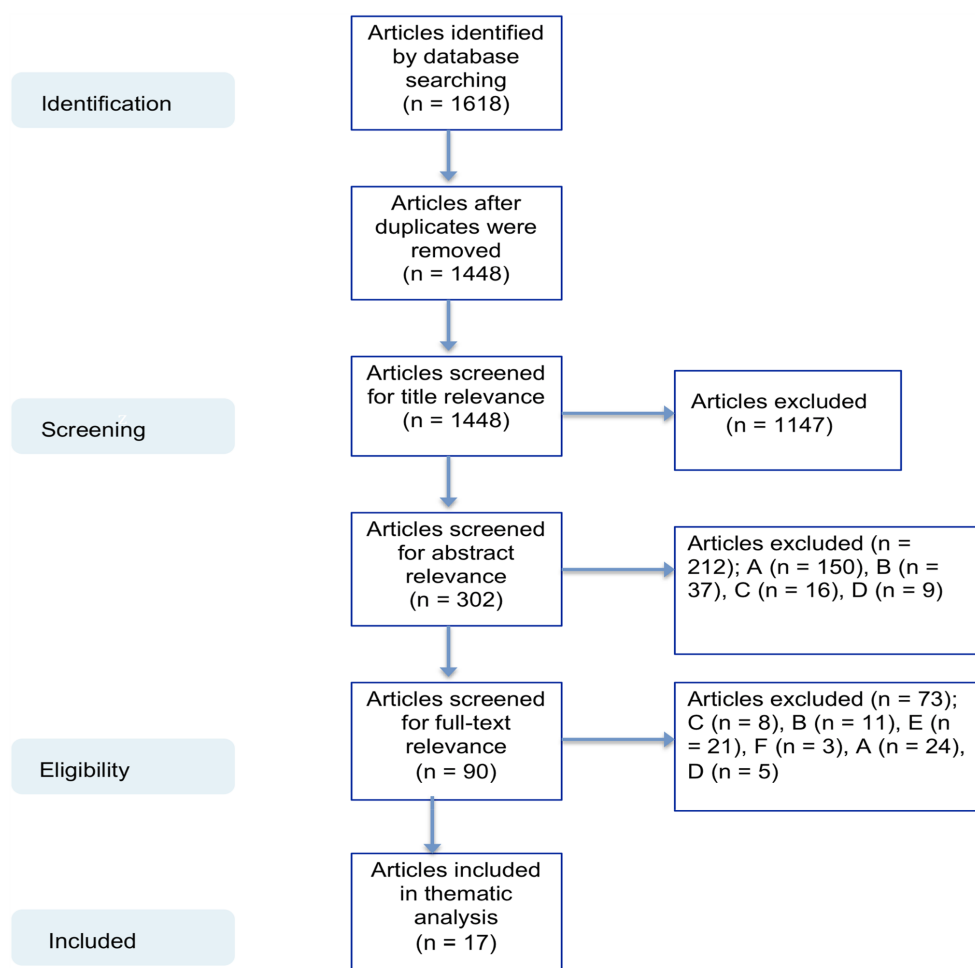


FIGURE 1 Flow diagram for search and screening for studies in review. A = Intervention issue (not conducted, none present). B = Not breastfeeding focused. C = Incorrect study design. D = Not about acceptability. E = Insufficient qualitative information. F = No full text.

Intervention information

Characteristics of the interventions are displayed in Table 2. Most of the interventions were delivered post-partum ($n = 10$, 58.82%), one was prenatal ($n = 1$, 5.88%) and the remainder were delivered during both periods ($n = 6$, 35.29%). Included studies described a variety of different interventions ranging from breastfeeding support groups to nutritionist counselling and prenatal education. The interventions were predominantly delivered face-to-face either on an individual basis or in a group setting ($n = 12$, 70.59%). Only one study (5.88%) employed an exclusively remote delivery system (mass texts sent to mothers) while the remainder of interventions used a combination of face-to-face and remote methods ($n = 4$, 23.53%). Of the interventions using a face-to-face approach, seven used peers to deliver breastfeeding support to mothers (41.18%). Five interventions used providers such as nutritionists, support workers, physicians, nurses or lactation consultants (29.41%). The remaining four incorporated a combination of providers (23.5%). Eight studies (47.08%) gave indication of the length of the intervention that ranged from a single day to 8 months. Two studies reported usage of theoretical frameworks or approaches to inform their interventions: Behavioural Change Theory (Craig et al., 2013) and Motivational Interview-

TABLE 1 Description of included studies ($n = 17$).

Study	Location	Data collection period	Study design	Data collection method	Sample size	Participant type	Age range, mean	Follow-up
Andaya et al. (2012)	United States	2008–2010	Q/RCT	Semi-structured interviews	42	Mothers	29.61	6 months
Brown et al. (2014)	United States	Not stated.	Q	Semi-structured interviews	15	Mothers	17–19, 18.2	1, 2, 3, 4, 5 and 6 months
Clarke et al. (2020)	United Kingdom	Not stated.	Q/RTC	Interviews and focus groups	67	Mothers and Providers	17.7–37.7, 27.9	3 days, 8 weeks and 6 months postnatal
Copeland et al. (2019)	United Kingdom	Not stated.	Q	Semi-structured interviews	50	Mothers and Providers	Not stated.	Antenatal, 48 h, 2–13 days and 2–6 weeks
Craig and Dietsch (2010)	Australia	Not stated.	Q	Semi-structured interviews	48	Mothers	Not stated.	Immediately post-partum
Cramer, Amir, Small, DipAppSci and BHealthSci (2019)	Australia	2012–2014	Q/MM	Questionnaire and semi-structured interviews	10	Providers	Not stated.	Period not stated.
Eldridge et al. (2017)	United States	2014–2015	Q	Focus groups	5	Providers	Not stated.	Period not stated.
Fox et al. (2015)	United Kingdom	Not stated.	Q	Interviews and focus groups	19	Mothers	23–44, 35	Period not stated.
Francis et al. (2020)	Canada	2017	Q	Interviews and focus groups	51	Mothers	Not stated.	Period not stated.
Hopper and Skirton (2016)	United Kingdom	2014	Q	Semi-structured interviews	46	Providers	Not stated.	Period not stated.
Ingram (2013)	United Kingdom	Not stated.	Q/MM	Semi-structured interviews and focus groups	16	Mothers and Providers	29.6	Mothers: 2 weeks Providers: 1 year
Kabakian-Khasholian et al. (2019)	Lebanon	2015–2016	Q/RTC	Interviews	25	Mothers	23–40	6 months
MaeVicar et al. (2018)	United Kingdom	2014–2015	Q/MM	Questionnaire and free-text comments	27	Mothers	Not stated.	Period not stated.
Nor et al. (2009)	South Africa	2006	Q	Interviews and counselling session observations	22	Mothers	17–39	Period not stated.
Quinn et al. (2019)	Ireland	Not stated.	Q/MM	Semi-structure interviews	15	Mothers	27–40	Period not stated.
Raisler (2000)	United States	1997	Q	Focus groups	14	Mothers	16–39	Period not stated.
Thomson et al. (2012)	United Kingdom	Not stated	Q	Semi-structured interviews and focus groups	26	Mothers	21–42	Period not stated.

Abbreviations: MM, Mixed-methods; RCT, Randomized control trials; Q, Qualitative.

TABLE 2 Description of included interventions ($N=17$).

Study	Delivered prenatal/postnatal	Type of intervention	Method of delivery	Person delivering the intervention	Length of intervention	Number of well-defined BCTs
Andaya et al. (2012)	Both	Lactation consultants and electronic prompts	Individual face-to-face, phone	Lactation consultant and physician	Not stated.	0
Brown et al. (2014)	Postnatal	Text message blasts	Remote	N/A	6 months	1
Clarke et al. (2020)	Both	Infant feeding helper	Face-to-face, phone, text message	Peer	~7 months	1
Copeland et al. (2019)	Both	Peer support counsellor	Individual face-to-face	Peer	Until 6 weeks PP	1
Craig and Dietsch (2010)	Prenatal	Prenatal education	Individual and group face-to-face	Lactation consultant	1 day	2
Cramer et al. (2019)	Postnatal	1. Home-based BF support 2. Community drop-in centres	Individual and group face-to-face	MCH Nurse	Not stated.	1
Eldridge et al. (2017)	Both	Nutritionist counselling, peer counsellor and group discussions	Individual and group face-to-face, remote	Nutritionist and peer counsellor	~7 months	4
Fox et al. (2015)	Postnatal	Baby café	Group face-to-face	Peers health professional	Not stated.	1
Francis et al. (2020)	Postnatal	Lactation consultant support	Individual face-to-face	Lactation consultant	Not stated.	4
Hopper and Skirton (2016)	Postnatal	Peer support counsellor	Individual face-to-face	Peer	Not stated.	1
Ingram (2013)	Postnatal	Peer support	Individual face-to-face and remote	Peer	1 day	3
Kabakian-Khasholian et al. (2019)	Both	Prenatal education, lactation consultant and peer supporter	Individual face-to-face	Lactation consultant and peer supporter	~8 months	3
MacVicar et al. (2018)	Postnatal	Tailored in-hospital breastfeeding support	Individual face-to-face	Support worker	Not stated.	5
Nor et al. (2009)	Both	Peer support counsellor	Individual face-to-face	Peer	Not stated.	1
Quinn et al. (2019)	Postnatal	Volunteer breastfeeding support groups	Group face-to-face	Peer/provider	Variable (postnatal weekly and monthly meetings).	1
Raisler (2000)	Postnatal	Peer support counsellor	Individual face-to-face	Peer	Not stated.	1
Thomson et al. (2012)	Postnatal	Incentives and peer support	Individual face-to-face	Peer	8 weeks	1

Abbreviation: BCT, Behaviour change technique.

ing (Copeland et al., 2019). In nine (52.9%), there was mention of training given to those delivering the intervention.

BCT information

Information recorded concerning well-defined BCTs is displayed in Table 3. Nearly all included studies ($n = 16$, 94.12%) described at least one BCT. Out of the 93 possible BCTs in the v.1 taxonomy, nine were described in the included studies (9.68%). The number of BCTs in a single intervention ranged from none to five, with a median of 1. Only one study did not describe any BCT components ($n = 1$, 5.88%). The most common BCTs included were ‘social support—unspecified’ ($n = 16$, 94.12%), ‘instruction on how to perform behaviour’ ($n = 5$, 29.41%) and ‘demonstration of behaviour’ ($n = 4$, 23.53%). The remaining BCTs used were each defined only once in the included studies. This information is displayed in Table 3.

Methodological quality

Studies varied in terms of their methodological quality. Most took a few steps to ensure sampling rigour ($n = 14$, 82.35%) and data collection rigour ($n = 11$, 64.71%). Four were rated to have made a ‘fairly thorough attempt’ to ensure data-analysis rigour (23.53%), five were rated as ‘several steps were taken’ (29.41%) and eight were rated as ‘a few steps were taken’ (47.06%). All included studies had findings grounded in data. Thirteen studies were given medium weight of reliability (76.47%) and four a high weight of reliability (23.53%). In terms of weight of usefulness, 10 studies were rated as medium (58.82%) and seven were rated as high (41.18%) (Appendix S2).

TABLE 3 Included studies and associated BCTs.

BCT	Number of studies	Studies
1.1 Goal setting (behaviour)	1	MacVicar et al. (2018) ++
1.2 Problem solving	1	MacVicar et al. (2018) +
2.2 Feedback on behaviour	1	Eldridge et al. (2017) ++
3.1 Social support (unspecified)	16	Quinn et al. (2019) ++; Eldridge et al. (2017) ++; Brown et al. (2014) ++; Nor et al. (2009) ++; MacVicar et al. (2018) ++; Raisler (2000) ++; Thomson et al. (2012) ++; Copeland et al. (2019) ++; Clarke et al. (2020) ++; Cramer et al. (2019) ++; Fox et al. (2015) ++; Francis et al. (2020) ++; Hopper and Skirton (2016) ++; Ingram (2013) ++; Kabakian-Khasholian et al. (2019) ++
4.1 Instruction on how to perform behaviour	5	MacVicar et al. (2018) +; Craig and Dietsch (2010) ++; Francis et al. (2020) ++; Ingram (2013) ++; Kabakian-Khasholian et al. (2019) +
6.1 Demonstration of behaviour	4	Craig et al. (2010) ++; Francis et al. (2020) ++; Ingram (2013) ++; Kabakian-Khasholian et al. (2019) +
‘12.1 Restructuring the physical environment	1	MacVicar et al. (2018) +
12.5 Adding objects to the environment	1	Francis et al. (2020) ++
13.1 Valued Self-Identity	1	Eldridge et al. (2017) +

Note: + indicating when a Behaviour change technique (BCT) was possible but the information is unclear; ++ indicating when it was certain a BCT was present.

TABLE 4 Overarching themes and Sub-themes.

Overarching theme	Sub-theme
Usefulness	New knowledge
	Confidence building
	Positive impact on intention and continuation
	Individualized care
Accessibility	Appreciation of availability and convenience
	Awareness of intervention
	Overcoming financial barriers
Value	Filling a gap
	Social aspect
	Support
Sustainability	Staff satisfaction
	Engagement

Thematic analysis

Thematic analysis and coding of the text from the 17 included studies produced four overarching themes: usefulness, accessibility, value and sustainability. These four overarching themes contained a total of 13 subthemes developed ground up without using any framework. This hierarchy of themes is demonstrated in Table 4.

Usefulness

New knowledge

In face-to-face interventions involving peer supporters and lactation consultants (LCs), mothers found being taught practical breastfeeding skills such as positioning highly useful, indicating appreciation for BCT ‘demonstration of the behaviour’ and BCT ‘instruction on how to perform behaviour’ (Andaya et al., 2012; Craig & Dietsch, 2010; Fox et al., 2015; Francis et al., 2020; Kabakian-Khasholian et al., 2019; MacVicar et al., 2018; Raisler, 2000).

Women also appreciated feedback on their breastfeeding technique, relating to BCT ‘feedback on behaviour’ (Fox et al., 2015). Peer supporters and LCs were also found to be effective at sharing how to deal with common problems, for example, tongue tie or breast engorgement (Andaya et al., 2012; Copeland et al., 2019; Fox et al., 2015; Francis et al., 2020; Kabakian-Khasholian et al., 2019; Raisler, 2000). Some women held high expectations for the antenatal education intervention led by a lactation consultant in terms of obtaining answers for their questions (Craig & Dietsch, 2010). Providers were seen as experts in breastfeeding, suggesting that they could be seen as suitable to fulfil BCT ‘credible source’ role (Fox et al., 2015). The health care providers echoed many of these sentiments (Eldridge et al., 2017; Thomson et al., 2012). Providers felt that implementation helped identify and correct gaps in their own BF knowledge (Eldridge et al., 2017; Kabakian-Khasholian et al., 2019).

Confidence building

Mothers reported that EBF-promoting interventions increased their confidence regarding breastfeeding (Copeland et al., 2019; Fox et al., 2015; Hopper & Skirton, 2016; Ingram, 2013). In both remote and face-to-face interventions, information helped women build their self-efficacy in breastfeeding, making them

feel capable of breastfeeding and increase their confidence in their ability to care for their infant (Brown et al., 2014; Clarke et al., 2020; Fox et al., 2015; Kabakian-Khasholian et al., 2019). This confidence-building enabled breastfeeding women to overcome common barriers, such as lack of confidence in their ability to produce adequate milk and manage various social pressures such as familial pressure to formula-feed or in the case of support groups, normalizing feeding in public (Andaya et al., 2012; Copeland et al., 2019; Fox et al., 2015; Kabakian-Khasholian et al., 2019; Quinn et al., 2019). Women felt more confident after seeing other mothers succeed with EBF (Fox et al., 2015; Kabakian-Khasholian et al., 2019).

Positive impact on intention and continuation

Mothers reported that they would not have continued breastfeeding without the interventions (Brown et al., 2014; Clarke et al., 2020; Fox et al., 2015; Francis et al., 2020; Ingram, 2013; Kabakian-Khasholian et al., 2019; Raisler, 2000). Some women reported that interventions reinforced intentions or shifted them in favour of breastfeeding (Andaya et al., 2012; Ingram, 2013). Some reasons for the shift in intention or decision to continue EBF included realizing the importance of EBF and being introduced to the use of breast pumps which removed certain barriers (Andaya et al., 2012; Brown et al., 2014).

Individualized care

Health care providers involved in interventions that were longer than a day in length and in which care continuity was a factor (e.g. an assigned peer supporter, LC, or nutritionist) believed individualized care aided in addressing specific sociocultural and personal needs of the mother (Eldridge et al., 2017; Francis et al., 2020; MacVicar et al., 2018). Interventions would need to include appropriate components to address care continuity issues (Eldridge et al., 2017).

Accessibility

Appreciation of availability and convenience

Women appreciated frequent communication with peer supporters through home visits, phone calls and text messaging reporting that they felt providers were always available to them (Andaya et al., 2012; Copeland et al., 2019; Francis et al., 2020; Ingram, 2013; Raisler, 2000). Women viewed this availability as a demonstration of the provider's flexibility around their schedules and preferred methods of contact, which made them feel important (Copeland et al., 2019; Francis et al., 2020). An immediate display of availability following the birth of an infant was found to play an important role in mothers' engagement with the intervention and its goals (Copeland et al., 2019). However, some mothers felt that contact could be too intense (Copeland et al., 2019).

Mothers valued the convenience of telephone support in an intervention. As they always had their mobile phones with them, these were a convenient way to share and receive information, as well as store it in the form of text messages for later usage (Clarke et al., 2020; Copeland et al., 2019; Ingram, 2013; Quinn et al., 2019). Women also valued the convenience of in-home support (Francis et al., 2020; Ingram, 2013). For interventions outside the home, such as support groups, women valued convenience of location more than convenience of time (Brown et al., 2014; Fox et al., 2015).

Awareness of intervention

When women were not actively invited to join the intervention by health providers, awareness of the EBF-promoting programmes mainly occurred through word of mouth (Fox et al., 2015; Quinn

et al., 2019). Breastfeeding support groups set in convenient locations also allowed women to become familiar with them while in the area for other purposes (Fox et al., 2015).

Overcoming financial barriers

Low-income women realized that without help from the intervention they likely would not have been able to afford to access LCs or purchase a breast pump (Francis et al., 2020). These breast pumps allowed women to continue with breastfeeding, exhibiting the benefits of BCT 'adding objects to the environment'.

Value

Filling a gap

Mothers and health care providers noted that breastfeeding interventions filled an essential gap left by standard breastfeeding care (Brown et al., 2014; Clarke et al., 2020; Hopper & Skirton, 2016; Ingram, 2013; MacVicar et al., 2018; Quinn et al., 2019; Raisler, 2000). Mothers reported feeling they had received something essential that their friends had not received (Brown et al., 2014; Ingram, 2013). Mothers also stated that providers often provided support when health care staff were unable to do so, a sentiment echoed by providers themselves (Clarke et al., 2020; Ingram, 2013; MacVicar et al., 2018; Raisler, 2000). Mothers appreciated practical more than information-based support offered by classes and health professionals (Quinn et al., 2019).

Social aspect

Women felt that the social aspects of face-to-face interventions added to their experience and that socializing with people who were empathetic to their situation (like other new mothers or providers who are mothers themselves) was important in early motherhood (Fox et al., 2015; Quinn et al., 2019). In interventions where mothers had the opportunity to connect with other mothers, they held the view that the informal atmosphere promoted a welcoming experience that allowed connections to form between participants which some described as a community (Fox et al., 2015; Quinn et al., 2019; Thomson et al., 2012). Women attending support groups appreciated being surrounded by likeminded individuals who were also breastfeeding (Fox et al., 2015; Quinn et al., 2019). Though it was not explicitly defined in the descriptions of the interventions, the findings suggest that the BCT 'restructuring the social environment' was incorporated in these interventions.

Support

Provision of support was a key component of the interventions (Clarke et al., 2020; Copeland et al., 2019; Fox et al., 2015; Francis et al., 2020; Hopper & Skirton, 2016; Ingram, 2013; Kabakian-Khasholian et al., 2019; MacVicar et al., 2018; Nor et al., 2009; Quinn et al., 2019; Raisler, 2000; Thomson et al., 2012). Women enjoyed being able to rely on interventions for support, including those that were provided remotely (Andaya et al., 2012; Clarke et al., 2020; Ingram, 2013; MacVicar et al., 2018; Thomson et al., 2012). In some face-to-face programmes the providers assumed the role of ally for new mothers, promoting breastfeeding in the face of unsupportive family and hospital staff or adopting a 'shared sense of successes' (Andaya et al., 2012; Hopper & Skirton, 2016; Quinn et al., 2019). Mothers felt that face-to-face interventions provided access to emotional support in particular, though no interventions were described as having incorporated BCT 'social support (emotional)' (Fox et al., 2015; Francis et al., 2020; Ingram, 2013; Kabakian-Khasholian et al., 2019; Raisler, 2000). Some women found this to

be a way to cope with the difficulties of breastfeeding (Copeland et al., 2019; Nor et al., 2009). Support as defined by mothers and providers also encompassed connecting them with other support services when needed, which made systems more straightforward for new mothers, relating to BCT 'social support (practical)' (Fox et al., 2015; Ingram, 2013; Raisler, 2000; Thomson et al., 2012).

Mothers appreciated not being judged and that providers were supportive of and helpful irrespective of their infant feeding decisions (Raisler, 2000). Some providers noted that they actively attempted to monitor how they showed feeding preference (Clarke et al., 2020; Copeland et al., 2019). Women also enjoyed being told by providers that they were doing things correctly and that their experiences and feelings were normal (Copeland et al., 2019; Fox et al., 2015; Hopper & Skirton, 2016; Quinn et al., 2019; Raisler, 2000). Many women celebrated personal connections with their provider that emerged as providers invested themselves in the well-being of mother and infant and formed a trusting relationship (Fox et al., 2015; Ingram, 2013; Quinn et al., 2019; Raisler, 2000; Thomson et al., 2012). This sense of connection encouraged women to share information they may have otherwise been too shy to share (Copeland et al., 2019). Mothers connected with providers who had personal experiences with breastfeeding (Andaya et al., 2012; Clarke et al., 2020; Fox et al., 2015; Hopper & Skirton, 2016). Other breastfeeding women at support groups were perceived as role models, inspiring women to want to be role models for others (Fox et al., 2015; Kabakian-Khasholian et al., 2019; Quinn et al., 2019). These experiences potentially open the possibility of BCT 'identification of self as role model' being an effective component to breastfeeding interventions.

Sustainability

Staff satisfaction

Feelings of making a difference and feeling valued contributed to job satisfaction for participating health care providers (Cramer et al., 2019; Hopper & Skirton, 2016; Ingram, 2013; Kabakian-Khasholian et al., 2019; Thomson et al., 2012). Intervention deliverers appreciated the autonomy and the role given to them (Cramer et al., 2019). Some organizational processes did not facilitate the delivery of the interventions, leading to providers to have fewer positive experiences (Hopper & Skirton, 2016). The implementation of new programmes into established health services, may present unpredicted challenges that may undermine the relationship between providers and organizations (Cramer et al., 2019). Issues arose due to disagreements between intervention staff and other health care staff; these related to role responsibilities, problems with recruitment of new staff and staff shift scheduling (Hopper & Skirton, 2016; Ingram, 2013).

Engagement

Some support groups were poorly attended, especially by women from a Hispanic background in the United States; this may be because the interventions were outside of what was culturally normal for them (Cramer et al., 2019; Eldridge et al., 2017). Similarly, apprehension, in terms of feelings of fear and insecurity, was culturally influenced and related to mistrust of medical professionals (Fox et al., 2015; Nor et al., 2009). Providers felt that busy lives and transportation limitations led to a lack of engagement with out-of-home services (Cramer et al., 2019; Eldridge et al., 2017). Feelings of apprehension linked to fear of judgement from other mothers or being unsure of what to expect were also barriers (Fox et al., 2015; Nor et al., 2009).

Two interventions used incentives to encourage engagement (Nor et al., 2009; Thomson et al., 2012). In one, gifts served as a way for peer supporters to initiate contact with mothers (Thomson et al., 2012). In the other, women were compensated for their participation, though not every woman qualified. This became an issue for peer supporters who were not in charge of compensation and found that it detracted from their ability to engage with mothers (Nor et al., 2009).

DISCUSSION

A total of 17 studies were identified in this review. The majority of interventions examined were support-based one-on-one or in a group setting. The majority were delivered face-to-face, but many also included telephone support. Studies were found to have shown moderate methodological quality regarding sampling, data collection and data analysis rigour. Across all included studies, nine BCTs were identified. After thematic analysis it was found that, in general, interventions were all seen as acceptable. Mothers described a preference for practical, but informal and personalized breastfeeding support, especially with providers and peers that have previous experience with breastfeeding. Mothers enjoyed having a knowledgeable facilitator but were uninterested in further clinical information as they felt they had received enough of this type of support. However, mothers did value the social aspects of face-to-face interventions, emphasizing the relevance of their interaction with providers. Health care providers echoed these thoughts and, similarly highlighted, that solving common breastfeeding issues and forming personalized relationships with mothers were contributors to successful EBF. Moreover, the health care providers reported that their involvement in the programmes helped to improve their knowledge of BF. Identified potential disrupters to programme success include healthcare providers feeling that the relationship with mothers may be undermined by disagreements between researchers and staff, such as responsibilities, recruitment of new staff and staff shift scheduling.

Comparisons with the literature

Behaviour change techniques

The number of BCTs identified in an intervention did not appear to impact how mothers and their health care providers felt about an intervention. However, this can also be because evidence of impact of BCTs found in the qualitative data differed from BCTs described as part of the intervention, suggesting that interventions may be poorly described in some of the included qualitative studies. This was also observed in other studies as well (Thirsk & Clark, 2017) and makes it difficult to comment further on which BCTs were found to be most acceptable. Based on those BCTs that were identified, 'social support (unspecified)', 'instruction on how to perform behaviour' and 'demonstration of behaviour' were most appreciated by mothers and seen as beneficial by deliverers. A recent systematic review indicates that, in general, most interventions with behavioural change components are shown to only have a moderate effect on promoting exclusive breastfeeding, suggesting that the preferences for these BCTs may not translate into improved breastfeeding rates (Francis et al., 2020). Further research should be done on the usage of BCTs such as 'restructuring the social environment' and 'identification of self as role model' because, although they were not explicitly described in the methods, women in some studies found components of these techniques beneficial for continued breastfeeding.

Mode of delivery

Mothers found multiple sources of support to be acceptable. For example, they appreciated support models that were informal and non-clinical in nature. Despite this, mothers still enjoyed the linkage some interventions provided to professional support when needed. This is supported by previous research that found that promotion of exclusive breastfeeding is especially aided by interventions that allow for both peer and professional support (Kassianos et al., 2019).

Face-to-face interventions were most appreciated by mothers, allowing for both social time as well as dedicated time to discuss breastfeeding. In-home care allowed mothers to overcome barriers that normally prevented them from accessing breastfeeding support, which resulted in poor engagement with drop-in clinics. However, social time increased mothers' positivity towards breastfeeding and increased

their confidence. This helps explain previous findings which report that breastfeeding interventions are best when individual and group support are combined (Haroon et al., 2013; Victora et al., 2016). Further, many interventions also allowed for telephone contact between mothers and supporters, allowing mothers to seek support when they felt necessary and without excess pressure from intervention deliverers and promoting engagement. Surprisingly, despite a lack of physical support, even interventions that were delivered exclusively remotely were found to aid breastfeeding, suggesting that even small forms of support are impactful and that mothers are in need of even the most basic forms of support.

Quality of care

It was important for women to form personal relationships with those providing the intervention as they depended on them for emotional support and exchanging sensitive or personal information. Further, women appreciated a non-judgemental contact that did not force them to breastfeed. There were cultural differences in the way that care was perceived, indicating that interventions need to be tailored to specific groups of mothers; a characteristic that has been noted in the Centers for Disease Control (CDC) Guidelines for Breastfeeding Interventions (Benton-Davis et al., 2005). These personal relationships meant that continuity of care was an important aspect of interventions and should be accounted for in future intervention development. Finally, effective relationships between mothers and providers allowed them to overcome familial pressure or fear of breastfeeding in public, which have been noted to be significant barriers to continuation (Acker, 2009). This is supported by literature that notes that a woman's support system is strongly associated with feeding method choice, indicating that support interventions help provide the correct environment for breastfeeding uptake (Bar-Yam & Darby, 1997; Tarrant et al., 2010). Despite it being recognized that partners play a role in breastfeeding behaviour, none of the studies reported on opinions of partners nor included what proportion of mothers were living with a partner during the time the study was conducted.

Strengths and limitations

As far as we are aware, this is the first systematic review collating qualitative evidence examining and synthesizing the views mothers and health care providers maintain of various breastfeeding interventions. It is also the first review that connects these accounts with interventions' specific components using an evidence-based and systematic method to extract BCTs, according to the BCT v.1 taxonomy (Michie et al., 2011). In doing so, this review analyses the utility of BCT components in promoting breastfeeding, under a framework that has been proven effective in other contexts. Nevertheless, according to mothers' and health care providers' views, other behavioural elements may have been represented in the interventions, but were not recognized as BCT components since they were not specified in the description of the intervention. Though steps were taken to undertake a broad search of databases, it is possible for this review to have missed relevant literature especially as the topic is so multifaceted. Reviewer bias may have been introduced given that included studies were limited to those published in English. Conference abstracts and posters were excluded; however, they do not usually include a significant amount of information. Some studies used sampling from women who had chosen to be part of these interventions themselves, which may have introduced bias towards women who were more likely to have continued breastfeeding anyway or those who were hesitant to breastfeed. The study samples are small, which may affect the representativeness of the findings. Given this systematic review is using secondary information from the included qualitative studies, questions from research may vary in objectives and quality, which may have an influence on the findings. Also, as most of the studies were conducted in OECD countries, the findings of the review may be limited in terms of its generalizability to other countries.

Implications for research and practice

Further research should aim to identify which components of the interventions could enhance the acceptability and feasibility of the BF programmes. Support-based interventions have been shown to be most successful and therefore it is relevant to understand the reasons behind this, as well as ways to improve other interventions (i.e. breastfeeding education, incentives). More informal programmes emphasizing the emotional support and strengthening the relationship between mothers and providers may lead to better results improving BF. Additional research should be conducted on attitudes of women in LMICs, because as evidenced by this review, there are important cultural differences in the way interventions (specifically incentive-based interventions) used in different contexts are perceived. Further, primary qualitative studies need to improve how they report intervention components in order to truly grasp the intended and unintended consequences these interventions have on breastfeeding continuation. Specifically, further research should be conducted on the value of the inclusion of BCTs and their effect on perception of breastfeeding interventions.

This review has elucidated what components may enhance the acceptability of women and providers in relation to breastfeeding programmes, and further suggests that BCT interventions can fill existing gaps may help. Women reported that their decisions to continue breastfeeding were actively influenced by the interventions discussed in this study. This indicates that individual and group face-to-face interventions focused on practical instruction and general support provide women with what they need to overcome barriers and to continue breastfeeding. In terms of BF interventions based on health systems, efforts should be made to promote collaboration between health care staff and informal supports, in order to clarify roles and responsibilities to provide quality care.

CONCLUSIONS

The results of this review have highlighted the importance of elements of support in breastfeeding interventions. This supports a recent systematic review which found that peer and professional support is most effective at promoting continued breastfeeding (Kassianos et al., 2019). However, this review aims to explore the views, experiences and acceptability of women in relation to interventions promoting breastfeeding. In particular, this review found that the non-clinical nature of peer support aided women through instruction and demonstration of breastfeeding, emotional support and overcoming social barriers to breastfeeding. In addition, women appreciated contact with professionals such as lactation consultants in order to solve common and complex breastfeeding issues as well as to increase self-efficacy around breastfeeding. These findings suggest that while the intervention promoting breastfeeding may be useful, it may also need to be aligned with other health care elements and out-of-hospital support. Better reporting of BCTs in interventions should be incorporated in the future to best advance the understanding of the most effective elements of EBF promoting programmes.

AUTHOR CONTRIBUTION

Antonio Rojas-García: Conceptualization; data curation; methodology; investigation; formal analysis; supervision; visualization; writing – original draft; writing – review and editing. **Sabrina Lingeman:** Conceptualization; data curation; methodology; visualization; investigation; formal analysis; writing – original draft; writing – review and editing. **Angelos P. Kassianos:** Conceptualization; methodology; formal analysis; supervision; writing – original draft; writing – review and editing.

CONFLICT OF INTEREST STATEMENT

None.

DATA AVAILABILITY STATEMENT

No original data are associated with this review article: all the necessary information required for a reader to access the reviewed studies by the same means as the authors are provided.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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