National Institute for Health and Care Excellence

Final

Maternal and child nutrition

[L] Evidence reviews for facilitators and barriers to follow existing government advice on safe and appropriate formula feeding

NICE guideline NG247

Evidence reviews underpinning recommendations 1.3.15 to 1.3.18 and the recommendation for research on safe and appropriate formula feeding in the NICE guideline.

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Final

These evidence reviews were developed by NICE

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Facilitators and barriers to follow existing government advice on safe and appropriate formula feeding

Review question

What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

Introduction

The UK Scientific Advisory Committee on Nutrition alongside World Health Organization and UNICEF recommend exclusive breastfeeding for the first 6 months of age with continued breastfeeding alongside solid foods for the first 1-2 years of life. However, in 2020-21, NHS England data showed that prevalence of exclusive breastfeeding at 6-8 weeks was 36.5% (Office for Health Improvement & Disparities 2023), meaning that majority of babies are given formula milk from early on and some are fully formula fed from birth. Generally it is known that formula feeding is most common among people from disadvantaged backgrounds. It is important that families who formula feed have required information and support to follow advice on how to formula feed their babies safely and appropriately. In the context of rising poverty, food insecurity and increasing formula milk costs, this becomes even more important.

Government guidance on formula feeding covers types of formula, methods of preparation of feeds in and out of the home, and responsive bottle feeding. Better understanding the views, experiences and perceptions of parents in relation to the things that enable or hinder following guidance on formula feeding is important to inform effective practice by clinicians and others supporting families who formula feed their babies. The aim of the review is to explore what are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding.

Summary of the protocol

See Table 1 for a summary of the population and phenomenon of interest for this review.

Table 1: Summary of the protocol (population and phenomenon of interest)

Population	Parents and carers with formula feeding responsibilities of babies from birth
Phenomenon of interest	Factors that facilitate or impede the uptake of existing guidance on safe and appropriate formula feeding. Themes will be identified from the available literature. The committee identified the following potential themes (however, they are aware that not all of these themes may be found in the literature and that additional themes may be identified): • age and feeding intention (and whether that changed at any time) • age of the mother/carer of the baby • accessibility, completeness and relevance of guidance (both formal and informal) in places where formula feeding guidance is obtained (for example, pharmacies and the internet)

	• stigmatisation of feeding method • information gaps • unregulated marketing of breastmilk substitutes • level of awareness and understanding of government guidance • cost of formula feeding • time and perceived practicality of using formula in different circumstances and settings (for example, workplace) • integration with breastfeeding • attitudes to breastfeeding and formula feeding • cultural beliefs • factors related to the baby • parental expectation of feeding patterns • lactation support • health visitor support
Context	Studies conducted in the UK

For further details see the review protocol in appendix A.

Methods and process

This evidence review was developed using the methods and process described in Developing NICE guidelines: the manual. Methods specific to this review question are described in the review protocol in appendix A and the methods document (supplementary document 1).

Declarations of interest were recorded according to NICE's conflicts of interest policy.

Qualitative evidence

Included studies

Nine papers from 8 qualitative studies were included in this review (Conway 2023, Guell 2018, Hoddinott 1999 & 2000, Hufton 2016, Hughes 1997, Lagan 2014, Lakshman 2012, Martyn 1997).

The included studies are summarised in Table 2.

The studies included the views of women who were formula feeding or had formula fed their infant. The views of healthcare providers were not extracted, as specified in the review protocol. Eight papers reported on a general population (Conway 2023, Guell 2018, Hoddinott 1999 & 2000, Hughes 1997, Lagan 2014, Lakshman 2012, Martyn 1997) and 1 paper reported on a population of UK-based refugee mothers (Hufton 2016).

Five papers reported on women who only formula fed (Conway 2023, Guell 2018, Hughes 1997, Lakshman 2012, Martyn 1997) and 4 papers reported on women who formula fed and breastfed (Hoddinott 1999 & 2000, Hufton 2016, Lagan 2014).

There were no data identified for subgroups of men, parents. or carers.

Six papers used general qualitative inquiry as the study design (Conway 2023, Guell 2018, Hufton 2016, Lagan 2014, Lakshman 2012, Martyn 1997), 2 papers used grounded theory (Hoddinott 1999 & 2000), and 1 paper used a phenomenological study design (Hughes 1997).

Data collection methods included interviews and focus groups.

All studies were conducted in the United Kingdom. None of the studies reported industry funding, although 2 did not report sources of funding (Hughes 1997, Martyn 1997), however, the author of 1 study worked for the non-governmental organisation Baby Milk Action (Martyn 1997). Six papers were not industry funded (Conway 2023, Guell 2018, Hoddinott 1999 & 2000, Hufton 2016, Lagan 2014, Lakshman 2012).

Data were identified for some themes listed in the protocol by the committee and no additional themes were generated (please see section below 'the outcomes that matter most' for further details).

See the literature search strategy in appendix B and study selection flow chart in appendix C.

Excluded studies

Studies not included in this review are listed, and reasons for their exclusion are provided in appendix K.

Summary of included studies

Summaries of the studies that were included in this review are presented in Table 2.

Table 2: Summary of included studies.

Study and aim of the study	Population	Methods	Themes applied after thematic synthesis
Conway 2023 **Study design** General qualitative inquiry. **Country** United Kingdom **Study aim** To understand how mothers use commercial milk formula (CMF) labels to inform their feeding choices and explore mothers' understanding of differences between CMF products. **Sources of finding:** Not industry funded. Funded by the National Institute for Health and Care Research (NIHR).	N=25 women (all formula feeding). Mean age (SD), years: 29.9 (5.1)	**Data collection:** Semi-structured interviews. **Data analysis:** Interpretivist thematic analysis.	• accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained • unregulated marketing of breastmilk substitutes
Guell 2018 **Study design**	N=19 women (all formula feeding).	**Data collection:** Semi-structured interviews.	• accessibility, completeness and relevance of guidance

Study and aim of the study	Population	Methods	Themes applied after thematic synthesis
General qualitative inquiry. **Country** United Kingdom **Study aim** To examine whether the intervention (to educate new mothers about healthy ways of formula feeding) was delivered as intended, to unpack processes of implementation and behaviour change, and to explore the views of intervention facilitators and recipients and experiences of delivering and taking part in the trial. **Sources of funding** Not industry funded.	Mean age (SD), years: NR (NR)	**Data analysis:** Thematic analysis.	in places where formula feeding guidance is obtained • information gaps • stigmatisation of feeding method
Hoddinott 1999 **Study design** Grounded theory study. **Country** United Kingdom **Study aim** To examine antenatal expectations and postnatal experiences of first-time mothers. **Sources of funding** Not industry funded.	N=19 women (mixed, formula feeding and breastfeeding). Mean age (SD), years: NR (NR)	**Data collection:** Semi-structured interviews. **Data analysis:** Framework analysis.	• information gaps
Hoddinott 2000 **Study design** Grounded theory study. **Country** United Kingdom **Study aim**	N=19 women (mixed, formula feeding and breastfeeding). Mean age (SD), years: NR (NR)	**Data collection:** Semi-structured interviews. **Data analysis:** Framework analysis.	• attitudes to breastfeeding and formula feeding

Study and aim of the study	Population	Methods	Themes applied after thematic synthesis
To look at how communication by health professionals about infant feeding is perceived by first time mothers. **Sources of funding** Not industry funded.			
Hufton 2016 **Study design** General qualitative inquiry. **Country** United Kingdom **Study aim** To explore an unmet need in understanding the issues surrounding infant feeding practices of refugee mothers. **Sources of funding** Not industry funded.	N=30 women (mixed, formula feeding and breastfeeding). Mean age (SD), years: NR (NR)	**Data collection:** Focus groups and semi-structured interviews. **Data analysis:** Framework analysis.	• accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained • cost of formula feeding • factors related to the baby
Hughes 1997 **Study design** Phenomenological study. **Country** United Kingdom **Study aim** To identify the factors which influence bottle feeding. **Sources of funding** NR.	N=20 women (all formula feeding). Age, years, n: <20: 13 >20: 7	**Data collection:** Interviews. **Data analysis:** Content analysis.	• time and perceived practicality of using formula in different circumstances and settings (for example, workplace)
Lagan 2014 **Study design** General qualitative inquiry. **Country** United Kingdom	N=78 women (mixed, formula feeding and breastfeeding). Age, years (range): 31 (19-41	**Data collection:** Focus groups and interviews. **Data analysis:** Framework analysis.	• accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained • information gaps

Study and aim of the study	Population	Methods	Themes applied after thematic synthesis
Study aim To explore the expectations and experiences of postnatal mothers in relation to infant feeding, and to identify how care could be improved. **Sources of funding** Not industry funded.			• stigmatization of feeding method
Lakshman 2012 **Study design** General qualitative inquiry. **Country** United Kingdom **Study aim** To understand users' perspectives about the programme for healthy growth and nutrition in formula milk-fed babies. **Sources of funding** Not industry funded.	N=11 women (all formula feeding). Age, years, n: 25-≤30: 2 31-≤35: 4 36-≤40: 3 41-≤45: 2	**Data collection:** Focus groups. **Data analysis:** Framework analysis.	• accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained • information gaps
Martyn 1997 **Study design** General qualitative inquiry. **Country** United Kingdom **Study aim** To explore the influences determining how and why mothers choose one brand of baby milk rather than another. **Sources of funding** NR, however, 1 study author worked for Baby Milk Action.	N=20 women (all formula feeding). Mean age (SD), years: NR (NR)	**Data collection:** Semi-structured interviews. **Data analysis:** Thematic analysis.	• accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained • information gaps • unregulated marketing of breastmilk substitutes

NR: not reported; SD: standard deviation.

See the full evidence tables in appendix D. As this was a qualitative review, no meta-analysis was conducted (and so there are no forest plots in appendix E).

See summary of evidence section and appendix F for further details about the themes, review findings and CERQual ratings.

Summary of the evidence

A summary of the qualitative data is presented here, by overarching theme together with thematic maps to visually illustrate the connection between the overarching themes and sub-themes.

The themes identified through analysis of all the included studies are summarised in Table 3 together with their CERQual quality rating and the number of studies contributing to each theme.

Table 3: Themes and sub-themes generated from analysis

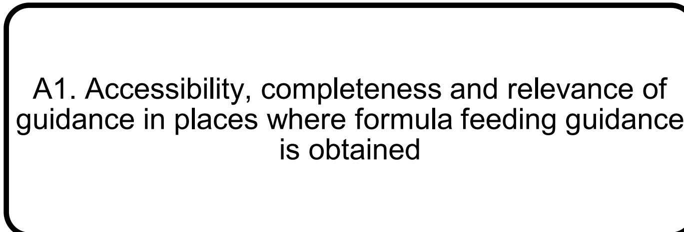
Themes and subthemes	CERQual quality	No. of studies
Facilitators for following existing government advice on safe and appropriate formula feeding		
A1. Accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained	High	3
Barriers to following existing government advice on safe and appropriate formula feeding		
B1. Accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained		
B1.1 Limited formal support	High	4
B1.2 Limited informal support	Moderate	3
B2. Age of the mother/carer of the baby	Low	1
B3. Attitudes to breastfeeding and formula feeding	Moderate	1
B4. Cost of formula feeding	Moderate	1
B5. Information gaps	Moderate	5
B6. Stigmatisation of feeding method	High	2
B7. Unregulated marketing of breastmilk substitutes	High	2

See appendix F for full GRADE-CERQual tables.

Facilitators for following existing government advice on safe and appropriate formula feeding

- The evidence generated 1 theme (Figure 1).
- The evidence was high in quality.
- The main reasons that evidence was downgraded were minor concerns with methodological limitations and adequacy of evidence contributing to a theme.

Figure 1: Thematic map for facilitators to following existing government advice on safe and appropriate formula feeding



A1. Accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained

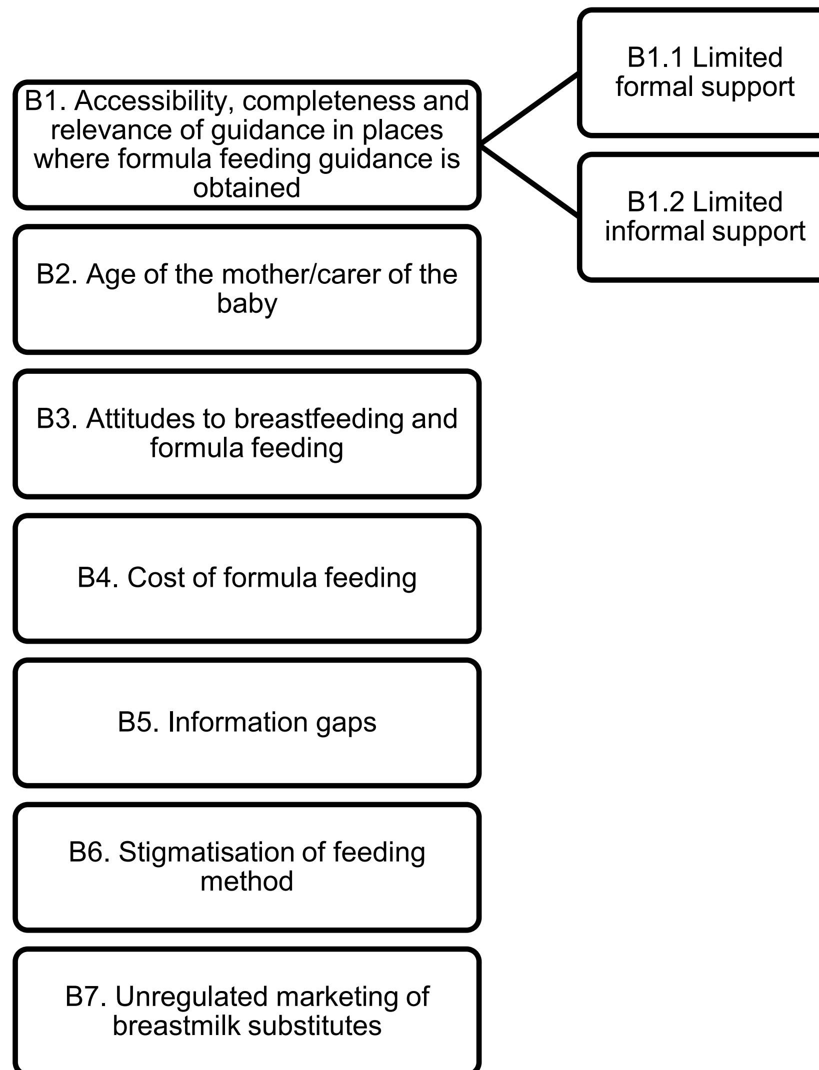
Three studies reported participants preferred formula feeding guidance from bodies such as the World Health Organization, health professionals, or a volunteer helpline. This included information on issues such as formula milk volume, recognising infant's satiety cues, and understanding that an infant was not always crying due to hunger. For example, women who were HIV positive, formula fed their child to avoid transmission of the virus through their breast milk, as advised by health professionals. Women reported that information delivered in a non-judgemental manner was very helpful. Additionally, women from a general population described how they had used their own experience with previous children, that of family and friends, or information from the internet to supplement their knowledge on formula feeding.

No sub themes were identified for this theme.

Barriers to following existing government advice on safe and appropriate formula feeding

- The evidence generated 7 themes and 2 subthemes (Figure 2).
- The evidence ranged from high to low quality, with most of the evidence being moderate or low in quality.
- The main reasons that evidence was downgraded were minor or moderate concerns with methodological limitations (for example concerns with the relationship between researcher and participants, issues with the recruitment strategy), adequacy of evidence contributing to a theme, or relevance of evidence.

Figure 2: Thematic map for barriers to following existing government advice on safe and appropriate formula feeding



B1. Accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained

There were 2 subthemes that contributed to this theme.

One study reported women received conflicting information on feeding from healthcare professionals, literature, the internet, family, and friends. They reported the need for consistent messages and consideration that babies and family situations may differ. One example of inconsistent messaging was some women being instructed not to give their baby water.

Three studies reported that women wanted more practical health and support in the postnatal period for formula feeding. Women reported that support ended abruptly when they were seen as ‘not breastfeeding’. Those who formula fed their babies experienced a lack of support from healthcare professionals on practical aspects of formula feeding, such as how to prepare bottles, how much to feed their infant, and how to interpret infant behaviour and respond accordingly. In one study, when participants asked a midwife or health visitor to recommend a formula milk brand, they were told ‘it was not allowed’, so participants turned to other sources for information (for example, friends, brand websites). Many women felt that outside of the information they received from the study they were participating in, information about formula feeding was exaggerated which meant they had to support their decision-making and practical skills to formula feed with anecdotal evidence. Often, participants

reported that they felt worried by the thought of discussing formula feeding with healthcare professionals but happily welcomed support from other formula feeding mothers, and therefore were never able to get information from a reliable, evidence-based source.

Three studies reported that participants considered there to be a lack of advice on formula-feeding and that participants had to rely on sparse information provided on leaflets or formula milk tins. If they received advice from healthcare professionals, it was perceived to be given reluctantly. All participants felt that healthcare professionals were too busy to give information about formula feeding or reluctant because they wanted to promote breastfeeding. Women reported that information was insufficient to enable them to know how much formula to feed their babies. They followed instructions printed on formula milk tins but also based their decisions on their child's appetite and other cues. Women reported that there should be a general guideline on the number and quantity of feeds per day, whilst acknowledging that all babies were different (in that some may want small, more frequent feeds and others larger, less frequent feeds). Other women reported that the instructions on formula tins were misleading, especially if their baby was consuming less than that recommended on the tin, which led to some anxiety, or using more than recommended. Friends tended to have a considerable influence on those women who had little family support or advice; they were especially valuable to primiparous women who had no prior experience of infant feeding. It was often the case that friends or family were consulted before approaching health professionals for advice about which baby milk to use and sometimes even in lieu of a health professional. It should be noted that, despite this, several women commented that they would have preferred this information to come primarily from the health professionals.

B2. Age of the mother/carer of the baby

Participants in 1 study reported their experiences of how healthcare professionals responded when told they wished to formula feed their child. This varied by age, where the younger women were met with indifference and the most common response was 'if that is what you want to do'. Younger women received no information from healthcare professionals on how to make up a bottle of formula milk during their antenatal care. Participants had been shown how to prepare formula from friends and family members, but desired confirmation from a healthcare professional. For women who were >20 years of age, healthcare professionals' response to their desire to formula feed was met with 'disapproval and coercion'. In their experience of antenatal care, after the session on breastfeeding they asked when the formula feeding session would be, only to be told that 'midwives did not do that'.

B3. Attitudes to breastfeeding and formula feeding

One study reported that participants could distinguish health professionals who seemed to really care and those who appeared more impersonal. Most women waited for health professionals to be proactive and offer support with both breast and bottle feeding.

B4. Cost of formula feeding

One study reported that participants frequently mentioned the high cost of formula milk, which made it hard to provide enough formula for their child. Often these participants had no recourse to public funds and needed to buy the formula, bottles, and sterilising equipment themselves, which often meant that to provide their child with formula they had to suffer deprivation themselves.

B5. Information gaps

Five studies reported that women considered information and support for formula feeding to be ineffective. This was because of conflicting or confusing advice, inconsistent support, and limited availability of information. Women reported that they generally received more information about breastfeeding than formula feeding, and therefore didn't know what to

expect or how to initiate formula feeding. Women wanted more information on different types of formula milk, bottles, and teats, especially in the antenatal period.

Participants received inconsistent information from healthcare professionals, and external sources of information tended to conflict this advice, women being uncertain about reliable sources and whom to trust. For example, 1 study reported that women felt that a baby's behaviour was most often attributed to feeding, rather than other factors, and that this was an important motivator for changing behaviour. One woman who formula fed her baby reported repeatedly changing the brand of formula she used because she received little guidance. There was widespread confusion and little knowledge regarding the nutritional content, or differences, between baby milks. Information concerning the nutritional content of baby milks was either non-existent or difficult to understand, and therefore not very useful.

In 1 study, women appreciated personalised support that they had received during this study. After being given information about recommended feeding amounts, the women realised that they were already feeding their infant more than the recommended volume. However, instead of decreasing the amount of formula milk, participants fed their child the same amount until their infant had caught up with the study's age-based recommendations. In another study, some women reported that they felt it was not possible to overfeed their baby or for the child to gain too much weight in infancy. Overall, there was a need for more consistent advice, improved continuity of staff, and better communication skills.

B6. Stigmatisation of feeding method

Two studies reported negative reactions from participant's friends and the public when expressing their desire to formula feed, which made them feel the need to constantly justify their choice. It seemed that health professionals were reluctant to provide advice about formula feeding, so those that needed this information felt alienated. It was suggested that the way information was provided could change to create a more meaningful and realistic understanding of infant feeding, for example, women sharing information and experiences with each other. Some women felt pressured to breastfeed by health professionals, which alienated those who had chosen to formula feed, and led to strong feelings of guilt and self-blame. For women who initiated breastfeeding but could not continue, care and support provided by health professionals was considered inadequate, again leading to feelings of guilt and shame. This difficult transition from breastfeeding to formula feeding worsened by the perception that healthcare professionals would judge and be unsupportive.

B7. Unregulated marketing of breastmilk substitutes

Generally, participants felt there were too many formula milk brands, and the choice was overwhelming, especially when deciding which was 'the best one'. The appearance of packs, including colours and images, was fundamental to mothers' understanding of the differences between products.

Products which had baby friendly images (for example, teddy bears, pictures of animals) were perceived to be warm and friendly by some, and cheap by others. Some participants wanted packaging that was more formal and scientific and knew that these products were more expensive. Participants considered these products to be superior but were unsure why or how.

Mothers described different messaging features being particularly important, for example those labelled as organic with pictures of the countryside were described as more natural, more nutrient rich, healthier, having 'more properties' or 'just better'.

Overall, participants felt the most expensive brands were the best quality and were hesitant to purchase cheaper brands. When asked by study authors to reflect on why this was the case, participants considered that the only difference between products were the way they were marketed. One study reported that experiences on the postnatal ward influenced women's intentions towards choosing the brand of formula they would use for feeding, for

example formula used by other women and advertising in the ward. One woman recalled a midwife using a tourniquet that had the name of a well-known baby milk manufacturer.

On the whole, participants reported trusting leading brands of formula milk and perceived them to be a 'safe choice' because they believed that the companies had 'done their research'. Participants described how often they saw adverts for formula milk and the proactive information they received from formula milk brands (for example, through social media).

Participants reported that they seldom changed formula brands, unless they experienced an issue when they viewed changing formula milk brands as the solution.

Views about stages of formula milk varied, where some considered it to be ‘just marketing fluff’ and others thought that if these different products weren’t required, they wouldn’t be manufactured. However, those participants who were convinced that the formula milk stages were different struggled to articulate how, despite having looked at the ingredient or nutrient panels. Furthermore, there was confusion about when specialist formula milk was required. Overall, participants thought that formula tins should have clearer instructions on the tin.

See appendix F for full GRADE-CERQual tables.

Economic evidence

This was a qualitative review question, therefore economic evidence was not relevant and thus no economic evidence searches were conducted.

The committee’s discussion and interpretation of the evidence

The outcomes that matter most

To answer the question of factors that facilitate or impede parents to follow existing government advice on safe and appropriate formula feeding, the review was designed to include qualitative data and as a result the committee could not specify in advance the data that would be found. Instead, they identified the following main themes to guide the review, although the list was not exhaustive, and the committee were aware that additional themes could be identified:

- Age and feeding intention (and whether that changed at any time)
- Age of the mother/carer of the baby
- Accessibility, completeness and relevance of guidance (both formal and informal) in places where formula feeding guidance is obtained (for example, pharmacies and the internet)
- Stigmatisation of feeding method
- Information gaps
- Unregulated marketing of breastmilk substitutes
- Level of awareness and understanding of government guidance
- Cost of formula feeding
- Time and perceived practicality of using formula in different circumstances and settings (for example, workplace)
- Integration with breastfeeding
- Attitudes to breastfeeding and formula feeding
- Cultural beliefs
- Factors related to the baby
- Parental expectation of feeding patterns

- Lactation support
- Health visitor support

Data were identified for some of the themes identified by the committee but there was no evidence for the themes: age and feeding intention; level of awareness and understanding of government guidance; integration with breastfeeding; cultural beliefs; factors related to the baby; parental expectation of feeding patterns; lactation support; time and perceived practicality of using formula in different circumstances and settings; and health visitor support. No additional themes were generated from the evidence.

The quality of the evidence

The evidence was assessed using GRADE-CERQual methodology and the overall confidence in the findings for the qualitative review ranged from high to low, with most of the evidence being low quality.

The review findings were downgraded because of methodological limitations of many of the included studies, for example concerns with the relationship between researcher and participants, issues with the recruitment strategy, the rigour of data analysis, and the clarity of the study findings. Some findings were also downgraded for adequacy of data, either because of the small sample size in the studies or the relevant studies did not offer rich data.

Benefits and harms

Overall, the committee thought that the evidence base for this review question was relatively sparse, out-dated, and not fully representative of current challenges (for example, the cost-of-living crisis). The committee were aware that a new round of the Infant Feeding Survey was commissioned by the Department of Health and Social Care in 2023. The findings of which could have facilitated their discussions when making recommendations, had it been published in time. The committee noted there was a much larger evidence base for evidence review K on the facilitators and barriers for maintaining breastfeeding whereas qualitative research specific to this review is more limited even though formula feeding is so common in practice. The committee based their recommendations on formula feeding on the qualitative evidence and their own knowledge and experience.

There was some evidence from the theme A1 ‘accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained’ (high confidence) that suggested parents preferred formula feeding guidance from reputable bodies (such as the World Health Organization), health professionals, or volunteer-led (non-commercial) helplines. There was evidence from the theme B5 ‘information gaps’ (moderate confidence) which reported that women considered the level of information and support for formula feeding they received to be ineffective because of conflicting or confusing advice from different sources and inconsistent support. Women also perceived that there wasn’t enough information available about formula feeding from sources such as healthcare professionals. Some people reported that they generally received more information about breastfeeding than formula feeding, and therefore didn’t know what to expect or how to initiate formula feeding. They perceived healthcare professional support reduced when they were no longer considered as ‘breastfeeding’. The committee agreed with the importance of providing reliable and clear information about formula feeding, free from commercial influence. From their own knowledge and experience, the committee were aware that the experience and skillset of healthcare professionals greatly affects the quality of advice provided and their ability to have a nuanced discussion about formula feeding.

There was some evidence from the theme B1 ‘accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained’ (moderate to high confidence) that suggested parents considered crying and problems with sleep to be indicators of feeding issues. Similarly, the committee were aware of a paper published in The

Lancet (Pérez-Escamilla 2023). Although this paper was not included in the review (as it was not a qualitative study), it is worth noting that this reported misinterpretation of unsettled baby behaviours as signs of breastmilk insufficiency or inadequacy by both parents and healthcare professionals, which was a common reason for introducing infant formula. Commercial milk formula marketing reinforces and worsens these misconceptions by making claims that infant formula can improve problems with sleep or reduce 'feeding related crying'.

The committee agreed the information provided by healthcare professionals varies and may be influenced by the healthcare professionals' own views and by formula milk marketing. Based on the evidence and their expertise, the committee agreed that commissioners and service providers should ensure that healthcare professionals are equipped to provide information about safe and appropriate formula feeding that is independent and non-commercial, evidence-based and consistent, in line with government advice.

There was evidence from the theme B7 'unregulated marketing of breastmilk substitutes' (high confidence), which reported the experiences of women on the postnatal ward who were exposed to advertising of commercial milk formula which impacted the brand of formula they chose. The committee agreed that, as more trusts have achieved UNICEF Baby Friendly Initiative accreditation, it is uncommon now for hospital wards or healthcare professionals to receive sponsored materials (for example, posters, leaflets, or lanyards). However, some healthcare settings or professionals (for example, dentists or GPs) may still be impacted by the commercial sector's influence. The committee discussed that this can be due to industry funded education, for example, which sometimes leads to overmedicalisation of normal infant behaviour and can result in the prescribing of specialist infant formulas. The committee noted other ways that industry advertises infant formula (for example, through brand promotion and digital marketing) that may have an impact on healthcare professionals' as well as families' perceptions. The committee noted that despite mechanisms used in the BFI accredited services of rotating formula brands or offering a choice, provision of branded formula milk in maternity services influences parental choice of formula. The committee agreed that commissioners and service providers should make sure that healthcare professionals do not inadvertently advertise or promote formula brands.

Despite exclusive breastfeeding being recommended due to its benefits for the baby and the breastfeeder, the committee were aware how common it is for parents to start or consider starting formula feeding, either as the only method of feeding or by supplementing breastfeeding with formula milk. This could be due to, for example, finding breastfeeding difficult and not receiving enough support to continue breastfeeding, or it could be due to perceived convenience of formula feeding, peer pressure to do what the majority does, or being told by friends, family members or commercial companies that this is the best thing to do for the baby and the family. Regardless of the reason, the committee thought that it is worth discussing with those who opt to formula feed so that the decision they make is well informed. However, there was evidence from the theme B6 'stigmatisation of feeding method' (high confidence) that reported on women who initiated breastfeeding but changed to formula feeding, which reported that care and support provided by healthcare professionals was considered inadequate during this difficult transition. Evidence from the theme B2 'age of the mother/carer of the baby' (low confidence) reported that younger mothers felt they received 'little or no' information on how to formula feed during their antenatal care, whilst older mothers were made to feel bad about asking for formula feeding information. Similarly, evidence from the theme B6 'stigmatisation of feeding method' (high confidence) showed that women felt health professionals were reluctant to provide advice about formula feeding, so those that needed this information felt alienated. Furthermore, women experienced feelings of guilt and shame when discontinuing breastfeeding, which was worsened by the perception that healthcare professionals would judge them and be unsupportive.

The committee agreed that because of the recommendation to exclusively breastfeed, some people may experience discussions about formula feeding as judgemental or non-supportive. The theme B3 'attitudes to breastfeeding and formula feeding' (moderate confidence)

reported that most women waited for health professionals to be proactive and offer support for feeding. The committee agreed that healthcare professionals should take every opportunity to ask about the baby's feeding, how it's going and if there are any new or ongoing issues or questions related to it, and seek to resolve them. They also discussed the importance of sensitive, non-judgemental and nuanced discussions with parents that acknowledged individual differences and personal circumstances. From their experience, the committee noted that when parents feel judged due to insensitive conversations, they often stop engaging. Therefore, the tone and ways in which healthcare professionals discuss baby feeding are very important, and the committee agreed that these discussions should happen in a sensitive, non-judgemental way.

When parents choose to formula feed, it is important that they receive appropriate information and support to do so in a safe way. The committee discussed that many parents choose to supplement breastfeeding with formula milk (combination feeding), and so it is important to provide support and share information so the parent can maintain breast milk supply to successfully combination feed. Sometimes parents may have chosen to supplement with formula because of perception of insufficient breast milk supply when exclusively breastfeeding. This could be prevented with appropriate support, or some parents might want to make an informed choice to revert back to exclusive breastfeeding if they are appropriately supported.

The committee discussed the evidence from the theme B7 'unregulated marketing of breastmilk substitutes' (high confidence) showed how much confusion formula milk marketing can cause among parents. Parents felt there were too many formula milk brands, which made it difficult to understand which product to buy. Many parents reported thinking that the most expensive brand was likely to be the best product. Views about different formula milk 'stages' after infant formula (marketed as 'stage 1') varied, where some considered these to be just marketing, others considered these products to be necessary, otherwise they would not be manufactured. The committee recalled the evidence from theme A1 'accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained' (high confidence) which suggested parents preferred formula feeding guidance from reputable bodies and health professionals. Furthermore, the committee were aware of a recent quantitative study which highlighted that some formula feeding parents are unaware of the government guidance on safe preparation of powdered infant formula, or do not understand the rationale for the guidance, and therefore do not follow it (Grant 2024). The study also highlights that the advice on making up formula given by the companies, including on the labels of formula, are inconsistent with government advice which can add confusion to parents and carers. There are also formula preparation devices, which are being marketed but which do not adhere to the government guidance, this can further add to the confusion. The committee agreed it is important that parents are given advice about safe and appropriate formula feeding and additional resources that are independent and non-commercial, evidence-based and consistent to avoid confusion and misinformation. These resources could include, for example, NHS websites as well as UNICEF Baby Friendly Initiative resources on bottle feeding. The committee were also aware of the charity First Steps Nutrition Trust, which provides independent and non-commercial, evidence-based advice in line with government advice.

The committee discussed recommended practices for gradually encouraging cup feeding at the same time as introduction to solids at around 6 months and discouraging use of a bottle after a year. This is not only related to formula feeding but this information was considered important to oral health so NHS advice on this was include in the recommendation as a resource.

There was limited evidence on the theme B4 'cost of formula feeding' (moderate confidence), which reported on the impacts of the high cost of infant formula. For example, to provide infant formula women reported having to suffer deprivation themselves. The committee thought that despite the Healthy Start scheme which provides a monetary allowance for

eligible individuals to buy healthy food and milk, the current very high cost of infant formula was likely to be a barrier to safe and appropriate formula feeding. The committee discussed the harmful behaviours parents may have to resort to because of financial difficulties, cost-of-living crisis and the increase in food poverty, for example introducing cheaper cows' milk too early, giving chocolate milk, adding rusk to milk, or diluting infant formula too much. The committee also discussed the risk associated with putting solids, such as rusks, into a baby's formula feed. The committee were aware of a possible knock-on effect on unintended hospital admissions for infants (for example, cases of reflux or gastroenteritis). The committee agreed that it is important for families at risk of food insecurity to be offered appropriate support and advice. As there was very little evidence on this topic from the UK context, the committee felt a research recommendation on the topic of safe and appropriate formula feeding in the context of poverty and food insecurity was important. Further details about the research recommendation are reported in appendix K.

The review protocol did not consider single and multiple births separately; therefore, the committee did not make specific recommendations for multiple births.

Cost effectiveness and resource use

This was a qualitative review question, therefore economic evidence was not relevant. The committee agreed that providing appropriate information on formula-feeding to parents who are thinking about introducing formula milk, or to those requiring further relevant information, and directing parents who choose formula feeding to additional sources of support and government advice, entails small costs in terms of additional health professional time. However, it was noted that some information is already provided in current practice. Additional resources are also required to allow commissioners and service providers to ensure that healthcare professionals provide independent, non-commercial, evidence-based, consistent government advice on safe and appropriate formula feeding and do not inadvertently promote or advertise infant or follow-on formula. These recommendations are expected to increase parents' awareness and approaches to safe and appropriate formula feeding, leading to clinical benefits for babies that are formula-fed.

Recommendations supported by this evidence review

This evidence review supports recommendations 1.3.15 to 1.3.18 and the research recommendation on safe and appropriate formula feeding.

References – included studies

Qualitative

Conway 2023

Conway, Rana; Ritchie, Isabel; Esser, Sara; Steptoe, Andrew; Smith, Andrea D; Llewellyn, Clare; Perceived influence of commercial milk formula labelling on mothers' feeding choices in Great Britain: a qualitative study; Archives of Disease in Childhood; 2023; vol. 108 (no. 12); 1008

Guell 2018

Guell, Cornelia, Whittle, Fiona, Ong, Ken K et al. (2018) Toward Understanding How Social Factors Shaped a Behavioral Intervention on Healthier Infant Formula-Feeding. Qualitative health research 28(8): 1320-1329

Hoddinott 1999

Hoddinott P and Pill R (1999) Nobody actually tells you: a study of infant feeding. British Journal of Midwifery: 558-565

Hoddinott 2000

Hoddinott P and Pill R (2000) A qualitative study of women's views about how health professionals communicate about infant feeding. Health Expectations: 224-233

Hufton 2016

Hufton, Emily and Raven, Joanna (2016) Exploring the infant feeding practices of immigrant women in the North West of England: a case study of asylum seekers and refugees in Liverpool and Manchester. Maternal & child nutrition 12(2): 299-313

Hughes 1997

Hughes P and Rees C (1997) Artificial feeding: choosing to bottle feed. British Journal of Midwifery: 137-142

Lagan 2014

Lagan, Briege M, Symon, Andrew, Dalzell, Janet et al. (2014) 'The midwives aren't allowed to tell you': perceived infant feeding policy restrictions in a formula feeding culture - the Feeding Your Baby Study. Midwifery 30(3): e49-55

Lakshman 2012

Lakshman, R, Landsbaugh, J R, Schiff, A et al. (2012) Developing a programme for healthy growth and nutrition during infancy: understanding user perspectives. Child: care, health and development 38(5): 675-82

Martyn 1997

Martyn T (1997) How mothers choose babymilk brands. Modern midwife: 10-14

Other

Grant 2024

Grant, A, Jones, S, Sibson, V, et al. (2024). The safety of at home powdered infant formula preparation: A community science project. Maternal & Child Nutrition, 20, e13567.

Office for Health Improvement & Disparities 2023

Office for Health Improvement & Disparities (2023) [Research and analysis - Breastfeeding at 6 to 8 weeks: a comparison of methods] [online; accessed 28 February 2024]

Pérez-Escamilla 2023

Pérez-Escamilla, R, Tomori, C, Hernández-Cordero, S, et al. (2023) Breastfeeding: crucially important, but increasingly challenged in a market-driven world. The Lancet 401 (10375): 472-485

Appendices

Appendix A Review protocols

Review protocol for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

Table 4: Review protocol

ID	Field	Content
0.	PROSPERO registration number	Not applicable
1.	Review title	The facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding.
2.	Review question	What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?
3.	Objective	To determine the factors which promote or present barriers for the uptake of existing government advice on safe and appropriate formula feeding.
4.	Searches	The following databases will be searched: • MEDLINE • Embase • Emcare • CINAHL • PsycINFO Searches will be restricted by: • 1995 (rationale: this is when the Baby Friendly Initiative standards were introduced in the UK) • English language only • Human studies only

ID	Field	Content
		Other searches: • Inclusion lists of systematic reviews The full search strategies for MEDLINE database will be published in the final review. For each search, the principal database search strategy is quality assured by a second information scientist using an adaptation of the PRESS 2015 Guideline Evidence-Based Checklist.
5.	Condition or domain being studied	Facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding • Making up formula away from home: Formula milk: common questions - NHS (www.nhs.uk) • Bottle feeding leaflet (unicef.org.uk)
6.	Population	Parents and carers with formula feeding responsibilities of babies from birth.
7.	Phenomenon of Interest	Factors that facilitate or impede the uptake of existing guidance on safe and appropriate formula feeding. Themes will be identified from the available literature. The committee identified the following potential themes (however, they are aware that not all of these themes may be found in the literature and that additional themes may be identified): • Age and feeding intention (and whether that changed at any time) • Age of the mother/carer of the baby • Accessibility, completeness and relevance of guidance (both formal and informal) in places where formula feeding guidance is obtained (for example, pharmacies and the internet) • Stigmatization of feeding method • Information gaps • Unregulated marketing of breastmilk substitutes

ID	Field	Content
		• Level of awareness and understanding of government guidance • Cost of formula feeding • Time and perceived practicality of using formula in different circumstances and settings (for example, workplace) • Integration with breastfeeding • Attitudes to breastfeeding and formula feeding • Cultural beliefs • Factors related to the baby • Parental expectation of feeding patterns • Lactation support • Health visitor support
8.	Comparator	Not applicable as this is a qualitative review.
9.	Types of study to be included	• Systematic reviews of qualitative studies • Studies reporting data gathered through semi-structured and structured interviews, focus groups, observations. Note: Mixed methods studies will be included but only qualitative data will be extracted and risk of bias assessed.
10.	Other exclusion criteria	Population: • Preterm and low-birth-weight babies (defined by the World Health Organization as a birth weight less than 2,500 g) *If any study or systematic review includes <1/3 of the excluded population, it will be considered for inclusion but, if included, the evidence will be downgraded for applicability.* Setting:

ID	Field	Content
		• Studies other than those conducted in the United Kingdom as the government advice in other countries might not be representative of that in the UK and attitudes in other countries may also differ significantly *Systematic reviews or studies that include evidence from both the United Kingdom and non-United Kingdom, will only be included if the source of themes and evidence from the United Kingdom can be clearly established. Studies mixing cohorts from the United Kingdom and other countries will be excluded.* Methodological details and language: • Studies that do not include methodological details will not be included as they do not provide sufficient information to evaluate risk of bias/ study quality • Studies using quantitative methods only (including surveys that report only quantitative data). • Conference abstracts will not be included because these do not typically have sufficient information to allow full critical appraisal. • Non-English language studies
11.	Context	The population of this guideline may overlap with the population of women included in other NICE guidelines (such as postnatal care, antenatal care, intrapartum care, pregnancy and complex social factors or obesity prevention).
12.	Primary outcomes (critical outcomes)	Outcomes not applicable as this is a qualitative review. For anticipated themes, see row 7 above. 'Phenomenon of interest'.
13.	Secondary outcomes (important outcomes)	Outcomes not applicable as this is a qualitative review. For anticipated themes, see row 7 above. 'Phenomenon of interest'.
14.	Data extraction (selection and coding)	All references identified by the searches and from other sources will be uploaded into EPPI and de-duplicated. Titles and abstracts of the retrieved citations will be screened to identify studies that potentially meet the inclusion criteria outlined in the review protocol. Duplicate screening will not be undertaken for this question.

ID	Field	Content
		Full versions of the selected studies will be obtained for assessment. Studies that fail to meet the inclusion criteria once the full version has been checked will be excluded at this stage. Each study excluded after checking the full version will be listed, along with the reason for its exclusion. A standardised form will be used to extract data from studies. The following data will be extracted: study details (reference, country where study was carried out, type and dates), participant characteristics, inclusion and exclusion criteria, details of the interventions if relevant, setting and follow-up, relevant themes and source of funding. One reviewer will extract relevant data into a standardised form, and this will be quality assessed by a senior reviewer.
15.	Risk of bias (quality) assessment	Quality assessment of individual studies will be performed using the following checklists: • ROBIS for systematic reviews • CASP checklist for qualitative studies The quality assessment will be performed by one reviewer and this will be quality assessed by a senior reviewer.
16.	Strategy for data synthesis	Qualitative review: The GRADE-CERQual (Confidence in the Evidence from Reviews of Qualitative research; Lewin 2015) approach will be used to summarise the confidence in qualitative evidence. The overall confidence in evidence about each theme or sub-theme will be rated on four dimensions: methodological limitations, applicability, coherence and adequacy of data. Methodological limitations refer to the extent to which there were problems in the design or conduct of the studies and will be assessed with the Critical Appraisal Skills Programme (CASP) checklist for qualitative studies. Applicability of evidence will be assessed by determining the extent to which the body of evidence from the primary studies are applicable to the context of the review question. Coherence of findings will be assessed by examining the clarity of the data. Adequacy of data will be assessed by looking at the degree of richness and quantity of findings.
17.	Analysis of subgroups	The views and experiences of the following groups will be reviewed and analysed separately: • Women • Men • Parents • Carers

ID	Field	Content		
18.	Type and method of review	☐	Intervention	
		☐	Diagnostic	
		☐	Prognostic	
		☒	Qualitative	
		☐	Epidemiologic	
		☐	Service Delivery	
		☐	Other (please specify)	
19.	Language	English		
20.	Country	England		
21.	Anticipated or actual start date	TBC		
22.	Anticipated completion date	TBC		
23.	Stage of review at time of this submission	Review stage	Started	Completed
		Preliminary searches	☐	☑
		Piloting of the study selection process	☐	☑
		Formal screening of search results against eligibility criteria	☐	☑
		Data extraction	☐	☑
		Risk of bias (quality) assessment	☐	☑
		Data analysis	☐	☑
24.	Named contact	**5a. Named contact** National Institute for Health and Care Excellence		

ID	Field	Content
		5b. Named contact e-mail mandcnutrition@nice.org.uk **5c. Organisational affiliation of the review** National Institute for Health and Care Excellence (NICE)
25.	Review team members	From the National Institute for Health and Care Excellence: • NGA Senior Systematic Reviewer • NGA Systematic Reviewer
26.	Funding sources/sponsor	This systematic review is being completed by the National Guideline Alliance which receives funding from NICE.
27.	Conflicts of interest	All guideline committee members and anyone who has direct input into NICE guidelines (including the evidence review team and expert witnesses) must declare any potential conflicts of interest in line with NICE's code of practice for declaring and dealing with conflicts of interest. Any relevant interests, or changes to interests, will also be declared publicly at the start of each guideline committee meeting. Before each meeting, any potential conflicts of interest will be considered by the guideline committee Chair and a senior member of the development team. Any decisions to exclude a person from all or part of a meeting will be documented. Any changes to a member's declaration of interests will be recorded in the minutes of the meeting. Declarations of interests will be published with the final guideline.
28.	Collaborators	Development of this systematic review will be overseen by an advisory committee who will use the review to inform the development of evidence-based recommendations in line with section 3 of Developing NICE guidelines: the manual. Members of the guideline committee are available on the NICE website: https://www.nice.org.uk/guidance/indevelopment/gid-ng10191
29.	Other registration details	None
30.	Reference/URL for published protocol	Not applicable

ID	Field	Content	
31.	Dissemination plans	NICE may use a range of different methods to raise awareness of the guideline. These include standard approaches such as: • notifying registered stakeholders of publication • publicising the guideline through NICE's newsletter and alerts • issuing a press release or briefing as appropriate, posting news articles on the NICE website, using social media channels, and publicising the guideline within NICE.	
32.	Keywords	Facilitators; barriers; formula feeding	
33.	Details of existing review of same topic by same authors	Not applicable	
34.	Current review status	☐	Ongoing
		☐	Completed but not published
		☒	Completed and published
		☐	Completed, published and being updated
		☐	Discontinued
35.	Additional information	None	
36.	Details of final publication	www.nice.org.uk	

CDSR: Cochrane Database of Systematic Reviews; CENTRAL: Cochrane Central Register of Controlled Trials; DARE: Database of Abstracts of Reviews of Effects; GRADE-CERQual: Grading of Recommendations Assessment, Development and Evaluation (Confidence in the Evidence from Reviews of Qualitative research; HTA: Health Technology Assessment; NGA: National Guideline Alliance; NHS: National health service; NICE: National Institute for Health and Care Excellence

Appendix B Literature search strategies

Literature search strategies for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

Database: Medline

Date of last search: 16/10/2023

#	Searches
1	exp Parents/
2	family relations/ or exp maternal behavior/ or exp parent-child relations/ or parenting/ or paternal behavior/ or Infant Care/ or Grandparents/ or caregivers/ or legal guardians/ or spouses/
3	(famil* or father* or husband* or mother* or partner* or spous* or maternal* or parent* or paternal* or grandparent* or grandfather* or grandmother* or care giver* or caregiver* or guardian*).tw,kf.
4	exp Child/
5	exp Infant/
6	exp Pediatrics/ or pediatric nursing/
7	(child* or baby or babies or boy? or girl? or infan* or juvenile? or kid? or kindergar* or minors or neonat* or newborn? or p?ediatric* or preschool* or pre school* or toddler* or young).tw,kf.
8	(child* or baby or babies or infan* or kindergar* or neonat* or newborn or newborns or pediatric* or paediatric*).jw,nw.
9	or/1-8
10	child nutritional physiological phenomena/ or infant nutritional physiological phenomena/ or weaning/
11	Maternal Nutritional Physiological Phenomena/
12	exp Infant Food/
13	Milk Substitutes/
14	Bottle Feeding/
15	((synthetic or substitute or artificial or hydrolys* or plant or powder*) adj2 (milk* or breastmilk*)).tw,kf.
16	(((formula* or bottle or cup or spoon or syringe) adj3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*).tw,kf.
17	or/10-16
18	9 and 17
19	"treatment adherence and compliance"/ or Guideline Adherence/
20	exp "Patient Acceptance of Health Care"/
21	exp Nutrition Policy/
22	(treatment* or guid* or nutriti* or diet* or supplement* or recommend* or policy or policies or requir* or allow* or protocol*).ti.
23	(guid* or recommend* or policy* or policies* or protocol*).ab. /freq=2
24	or/19-23
25	18 and 24
26	(barrier* or hinder* or block* or obstacle* or limit* or restrict* or restrain* or obstruct* or inhibit* or imped* or delay* or constrain* or hindrance* or refus* or decreas* or reduc* or discourag* or prevent* or disparit* or challeng* or impact* or inequalit* or deter* or inaccessib* or prohibit* or unaffordab* or unavailab* or dissatisf* or nonadher* or noncomply* or non comply* or noncomplian* or non complian* or ignor* or inconvenien*).tw,kf.
27	(facilitat* or uptak* or up-tak* or takeup* or tak*-up* or awar* or increas* or impact* or effect* or improv* or enhanc* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisf* or complian* or comply* or complie* or adopt* or implement* or availab* or provision or provid* or convenience or convenient or offer or incentiv* or start* or attend* or utiliz* or utilis* or sustain* or maintain* or deter* or identif* or adequa* or persuad* or persuasion or help* or enabl* or eligib* or decid* or decision* or afford* or deliver* or equalit* or behav* or influenc*).tw,kf.
28	Stress, Psychological/ or Financial Stress/
29	Adaptation, Psychological/
30	emotions/
31	Anxiety/
32	Fear/

#	Searches
33	motivation/ or intention/
34	attitude to health/ or health knowledge, attitudes, practice/ or exp patient satisfaction/ or treatment refusal/
35	decision making/ or choice behavior/
36	(prefer* or experience* or value* or perspective* or perception* or perceiv* or expectation* or choice* or choos* or willingness or attitud* or know* or belief* or believ* or opinion* or understand* or stress* or emotion* or anx* or fear* or concern* or uncertain* or unsure or thought* or feeling* or felt* or view* or aware* or priorit*).tw,kf.
37	exp Communication/ or Consumer Behavior/
38	education/ or teaching/
39	health education/ or exp consumer health information/ or exp health promotion/ or exp patient education as topic/
40	Health Behavior/
41	(advis* or advice* or counsel* or educat* or communicat* or inform* or miscommunicat* or misinform* or learn* or lesson* or material* or resource* or teach* or tool* or train* or tutorial* or knowledg*).tw,kf.
42	age factors/ or maternal age/ or paternal age/
43	(age* or teenage* or young* or matur* or old*).tw,kf.
44	social stigma/
45	exp shame/
46	Social Norms/
47	Perception/ or exp Social Perception/
48	(stigma* or shame* or embarrass* or percepti* or perceiv*).tw,kf.
49	exp Commerce/
50	Capitalism/
51	(commerc* or market* or telemarket* or advertis* or consumer*).tw,kf.
52	Economics/
53	income/ or remuneration/ or exp "salaries and fringe benefits"/
54	health expenditures/
55	((cost* or price* or pricing or expens* or income* or salar* or budget*) adj3 (((formula* or bottle or cup) adj3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*)).tw,kf.
56	exp Population Groups/
57	exp Culture/
58	(race* or racial* or ethnic* or cultur* or religio* or custom* or ancest* or minorit* or multiracial* or multiethnic* or multicultural*).tw,kf.
59	"ethnic and racial minorities"/ or minority groups/ or Minority Health/ or exp social environment/ or exp socioeconomic factors/
60	exp "Health Disparate, Minority and Vulnerable Populations"/
61	"Social Determinants of Health"/
62	(communit* or environment* or social* or socioeconom* or econom* or demograph* or sociodemograph* or neighbo?rhood* or poverty or impoverish* or hardship* or privation* or income* or depriv* or financ*).tw,kf.
63	exp Social Support/
64	Time Factors/
65	Women, Working/
66	(work* or job* or paid or employ* or student*).tw,kf.
67	Feeding Behavior/ or Feeding Methods/
68	((feed* or fed or breast* or formula* or bottle*) adj2 (mix* or combin* or combo or supplement* or pattern* or practi?* or characteristic* or behavio?r* or expect*)).tw,kf.
69	(time* or availab* or ease or easy or issue* or problem* or difficult*).tw,kf.
70	exp Lactation/
71	((cessat* or continu* or difficult* or discontinu*) adj3 (breastfeed* or breast feed* or breastfed* or breast fed* or lactat*)).tw,kf.
72	((express* or pump*) adj2 milk).tw,kf.
73	Nurses, Community Health/ or community health nursing/
74	House Calls/
75	((nurs* or visitor*) adj2 (home or visit* or health or communit*)).tw,kf.
76	or/26-75
77	25 and 76

#	Searches
78	animals/ not humans/
79	exp Animals, Laboratory/
80	exp Animal Experimentation/
81	exp Models, Animal/
82	exp Rodentia/
83	(rat or rats or rodent* or mouse or mice).ti.
84	or/78-83
85	77 not 84
86	limit 85 to English language
87	ANTHROPOLOGY, CULTURAL/ or CLUSTER ANALYSIS/ or FOCUS GROUPS/ or GROUNDED THEORY/ or HEALTH CARE SURVEYS/ or interview.pt. or "INTERVIEWS AS TOPIC"/ or NARRATION/ or NURSING METHODOLOGY RESEARCH/ or OBSERVATION/ or "PERSONAL NARRATIVES AS TOPIC"/ or PERSONAL NARRATIVE/ or QUALITATIVE RESEARCH/ or "SURVEYS AND QUESTIONNAIRES"/ or SAMPLING STUDIES/ or TAPE RECORDING/ or VIDEODISC RECORDING/
88	(qualitative* or interview* or focus or questionnaire* or narrative* or narration* or survey* or experience* or themes).tw.
89	(ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic adj4 analys*) or theoretical sampl* or purposive sampl*).tw.
90	(hermeneutic* or heidegger* or husser* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).tw.
91	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them*).tw.
92	(critical interpretive synthes* or (realist adj (review* or synthes*)) or (noblit and hare) or (meta adj (method or triangulation)) or (cerqual or conqual) or ((thematic or framework) adj synthes*)).tw.
93	or/87-92
94	86 and 93
95	exp United Kingdom/
96	(national health service* or nhs*).ti,ab,in.
97	(english not ((published or publication* or translat* or written or language* or speak* or literature or citation*) adj5 english)).ti,ab.
98	(gb or "g.b." or britain* or (british* not "british columbia") or uk or "u.k." or united kingdom* or (england* not "new england") or northern ireland* or northern irish* or scotland* or scottish* or ((wales or "south wales") not "new south wales") or welsh*).ti,ab,jw,in.
99	(bath or "bath's" or ((birmingham not alabama*) or ("birmingham's" not alabama*) or bradford or "bradford's" or brighton or "brighton's" or bristol or "bristol's" or carlisle* or "carlisle's" or (cambridge not (massachusetts* or boston* or harvard*)) or ("cambridge's" not (massachusetts* or boston* or harvard*)) or (canterbury not zealand*) or ("canterbury's" not zealand*) or chelmsford or "chelmsford's" or chester or "chester's" or chichester or "chichester's" or coventry or "coventry's" or derby or "derby's" or (durham not (carolina* or nc)) or ("durham's" not (carolina* or nc)) or ely or "ely's" or exeter or "exeter's" or gloucester or "gloucester's" or hereford or "hereford's" or hull or "hull's" or lancaster or "lancaster's" or leeds* or leicester or "leicester's" or (lincoln not nebraska*) or ("lincoln's" not nebraska*) or (liverpool not (new south wales* or nsw)) or ("liverpool's" not (new south wales* or nsw)) or ((london not (ontario* or ont or toronto*)) or ("london's" not (ontario* or ont or toronto*)) or manchester or "manchester's" or (newcastle not (new south wales* or nsw)) or ("newcastle's" not (new south wales* or nsw)) or norwich or "norwich's" or nottingham or "nottingham's" or oxford or "oxford's" or peterborough or "peterborough's" or plymouth or "plymouth's" or portsmouth or "portsmouth's" or preston or "preston's" or ripon or "ripon's" or salford or "salford's" or salisbury or "salisbury's" or sheffield or "sheffield's" or southampton or "southampton's" or st albans or stoke or "stoke's" or sunderland or "sunderland's" or truro or "truro's" or wakefield or "wakefield's" or wells or westminster or "westminster's" or winchester or "winchester's" or wolverhampton or "wolverhampton's" or (worcester not (massachusetts* or boston* or harvard*)) or ("worcester's" not (massachusetts* or boston* or harvard*)) or (york not ("new york*" or ny or ontario* or ont or toronto*)) or ("york's" not ("new york*" or ny or ontario* or ont or toronto*))))).ti,ab,in.
100	(bangor or "bangor's" or cardiff or "cardiff's" or newport or "newport's" or st asaph or "st asaph's" or st davids or swansea or "swansea's").ti,ab,in.
101	(aberdeen or "aberdeen's" or dundee or "dundee's" or edinburgh or "edinburgh's" or glasgow or "glasgow's" or inverness or (perth not australia*) or ("perth's" not australia*) or stirling or "stirling's").ti,ab,in.
102	(armagh or "armagh's" or belfast or "belfast's" or lisburn or "lisburn's" or londonderry or "londonderry's" or derry or "derry's" or newry or "newry's").ti,ab,in.
103	or/95-102
104	(exp africa/ or exp americas/ or exp antarctic regions/ or exp arctic regions/ or exp asia/ or exp australia/ or exp oceania/) not (exp United Kingdom/ or europe/)
105	103 not 104

#	Searches
106	94 and 105
107	limit 106 to ed=19950101-20231031
108	limit 106 to dt=19950101-20231031
109	107 or 108

Database: Embase

Date of last search: 16/10/2023

#	Searches
1	exp parent/
2	family relation/ or exp child parent relation/ or infant care/
3	exp grandparent/
4	caregiver/
5	legal guardian/
6	exp spouse/
7	(famil* or father* or husband* or mother* or partner* or spous* or maternal* or parent* or paternal* or grandparent* or grandfather* or grandmother* or care giver* or caregiver* or guardian*).tw,kf.
8	child/ or exp infant/ or preschool child/ or toddler/ or "minor (person)"/
9	pediatrics/ or exp neonatology/ or pediatric emergency medicine/ or pediatric nursing/
10	(child* or baby or babies or boy? or girl? or infan* or juvenile? or kid? or kindergar* or minors or neonat* or newborn? or p?ediatric* or preschool* or pre school* or toddler* or young).tw,kf.
11	(child* or baby or babies or infan* or kindergar* or neonat* or newborn or newborns or pediatric* or paediatric*).jw.
12	or/1-11
13	exp child nutrition/
14	weaning/
15	maternal nutrition/
16	baby food/ or artificial milk/
17	milk substitute/
18	((synthetic or substitute or artificial or hydrolys* or plant or powder*) adj2 (milk* or breastmilk*)).tw,kf.
19	(((formula* or bottle or cup or spoon or syringe) adj3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*).tw,kf.
20	or/13-19
21	12 and 20
22	patient attitude/ or exp patient compliance/ or patient participation/ or patient engagement/
23	protocol compliance/
24	nutrition policy/
25	(treatment* or guid* or nutriti* or diet* or supplement* or recommend* or policy or policies or requir* or allow* or protocol*).ti.
26	(guid* or recommend* or policy* or policies* or protocol*).ab. /freq=2
27	or/22-26
28	21 and 27
29	(barrier* or hinder* or block* or obstacle* or limit* or restrict* or restrain* or obstruct* or inhibit* or imped* or delay* or constrain* or hindrance* or refus* or decreas* or reduc* or discourag* or prevent* or disparit* or challeng* or impact* or inequalit* or deter* or inaccessib* or prohibit* or unaffordab* or unavailab* or dissatisf* or nonadher* or noncomply* or non comply* or noncomplian* or non complian* or ignor* or inconvenien*).tw,kf.
30	(facilitat* or uptak* or up-tak* or takeup* or tak*-up* or awar* or increas* or impact* or effect* or improv* or enhanc* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisf* or complian* or comply* or complie* or adopt* or implement* or availab* or provision or provid* or convenience or convenient or offer or incentiv* or start* or attend* or utiliz* or utilis* or sustain* or maintain* or deter* or identif* or adequa* or persuad* or persuasion or help* or enabl* or eligib* or decid* or decision* or afford* or deliver* or equalit* or behav* or influenc*).tw,kf.
31	mental stress/
32	financial stress/
33	psychological adjustment/
34	emotion/

#	Searches
35	anxiety/
36	fear/
37	motivation/
38	behavior/
39	attitude to health/
40	patient preference/ or patient satisfaction/ or treatment refusal/
41	decision making/ or patient decision making/
42	(prefer* or experience* or value* or perspective* or perception* or perceiv* or expectation* or choice* or choos* or willingness or attitud* or know* or belief* or believ* or opinion* or understand* or stress* or emotion* or anx* or fear* or concern* or uncertain* or unsure or thought* or feeling* or felt* or view* or aware* or priorit*).tw,kf.
43	exp interpersonal communication/ or consumer attitude/
44	consumer health information/ or information dissemination/ or information gap/ or knowledge gap/ or exp information seeking/ or medical information/ or patient information/
45	education/ or teaching/
46	health education/ or exp health literacy/ or exp health promotion/ or parenting education/ or patient education/
47	health behavior/
48	(advis* or advice* or counsel* or educat* or communicat* or inform* or miscommunicat* or misinform* or learn* or lesson* or material* or resource* or teach* or tool* or train* or tutorial* or knowledg*).tw,kf.
49	age/
50	exp parental age/
51	(age* or teenage* or young* or matur* or old*).tw,kf.
52	social preference/ or social stigma/
53	social stress/
54	shame/
55	social norm/
56	perception/
57	(stigma* or shame* or embarrass* or percepti* or perceiv*).tw,kf.
58	commercial phenomena/ or exp advertising/ or marketing/ or social marketing/
59	capitalism/
60	(commerc* or market* or telemarket* or advertis* or consumer*).tw,kf.
61	economics/
62	income/ or exp household income/ or remuneration/ or "salary and fringe benefit"/
63	"health care cost"/
64	((cost* or price* or pricing or expens* or income* or salar* or budget*) adj3 (((formula* or bottle or cup) adj3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*)).tw,kf.
65	exp population group/
66	cultural anthropology/
67	exp social background/
68	(race* or racial* or ethnic* or cultur* or religio* or custom* or ancest* or minorit* or multiracial* or multiethnic* or multicultural*).ti,ab,kf.
69	minority health/
70	exp social environment/
71	exp socioeconomics/
72	exp vulnerable population/
73	"social determinants of health"/
74	(communit* or environment* or social* or socioeconom* or econom* or demograph* or sociodemograph* or neighbo?rhood* or poverty or impoverish* or hardship* or privation* or income* or depriv* or financ*).ti,ab,kf.
75	exp social support/
76	time factor/
77	female worker/
78	(work* or job* or paid or employ* or student*).tw,kf.
79	feeding behavior/
80	food intake/

#	Searches
81	((feed* or fed or breast* or formula* or bottle*) adj2 (mix* or combin* or combo or supplement* or pattern* or practi?* or characteristic* or behavio?r* or expect*)).tw,kf.
82	(time* or availab* or ease or easy or issue* or problem* or difficult*).tw,kf.
83	lactation/
84	((cessat* or continu* or difficult* or discontinu*) adj3 (breastfeed* or breast feed* or breastfed* or breast fed* or lactat*)).tw,kf.
85	((express* or pump*) adj2 milk).tw,kf.
86	nurse/
87	health visitor/
88	home visit/
89	community health nursing/
90	lactation consultant/
91	((nurs* or visitor*) adj2 (home or visit* or health or communit*)).tw,kf.
92	or/29-91
93	28 and 92
94	animal/ not human/
95	nonhuman/
96	exp Animal Experiment/
97	exp Experimental Animal/
98	animal model/
99	exp Rodent/
100	(rat or rats or rodent* or mouse or mice).ti.
101	or/94-100
102	93 not 101
103	(conference abstract* or conference review or conference paper or conference proceeding).db,pt,su.
104	102 not 103
105	limit 104 to English language
106	CLUSTER ANALYSIS/ or CONTENT ANALYSIS/ or DISCOURSE ANALYSIS/ or ETHNOGRAPHY/ or GROUNDED THEORY/ or HEALTH CARE SURVEY/ or exp INTERVIEWS/ or NARRATIVE/ or NURSING METHODOLOGY RESEARCH/ or OBSERVATION/ or PERSONAL EXPERIENCE/ or PHENOMENOLOGY/ or QUALITATIVE RESEARCH/ or QUESTIONNAIRE/ or exp RECORDING/
107	(qualitative* or interview* or focus or questionnaire* or narrative* or narration* or survey* or experience* or themes).tw.
108	(ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic adj4 analys*) or theoretical sampl* or purposive sampl*).tw.
109	(hermeneutic* or heidegger* or husser* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).tw.
110	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them*).tw.
111	(critical interpretive synthes* or (realist adj (review* or synthes*)) or (noblit and hare) or (meta adj (method or triangulation)) or (cerqual or conqual) or ((thematic or framework) adj synthes*)).tw.
112	or/106-111
113	105 and 112
114	exp United Kingdom/
115	(national health service* or nhs*).ti,ab,in,ad.
116	(english not ((published or publication* or translat* or written or language* or speak* or literature or citation*) adj5 english)).ti,ab.
117	(gb or "g.b." or britain* or (british* not "british columbia") or uk or "u.k." or united kingdom* or (england* not "new england") or northern ireland* or northern irish* or scotland* or scottish* or ((wales or "south wales") not "new south wales") or welsh*).ti,ab,jx,in,ad.
118	(bath or "bath's" or ((birmingham not alabama*) or ("birmingham's" not alabama*) or bradford or "bradford's" or brighton or "brighton's" or bristol or "bristol's" or carlisle* or "carlisle's" or (cambridge not (massachusetts* or boston* or harvard*)) or ("cambridge's" not (massachusetts* or boston* or harvard*)) or (canterbury not zealand*) or ("canterbury's" not zealand*) or chelmsford or "chelmsford's" or chester or "chester's" or chichester or "chichester's" or coventry or "coventry's" or derby or "derby's" or (durham not (carolina* or nc)) or ("durham's" not (carolina* or nc)) or ely or "ely's" or exeter or "exeter's" or gloucester or "gloucester's" or hereford or "hereford's" or hull or "hull's" or lancaster or "lancaster's" or leeds* or leicester or "leicester's" or (lincoln not nebraska*) or ("lincoln's" not nebraska*) or (liverpool not (new south wales* or nsw)) or ("liverpool's" not (new south wales* or nsw)) or ((london not (ontario*

#	Searches
	or ont or toronto*)) or ("london's" not (ontario* or ont or toronto*)) or manchester or "manchester's" or (newcastle not (new south wales* or nsw)) or ("newcastle's" not (new south wales* or nsw)) or norwich or "norwich's" or nottingham or "nottingham's" or oxford or "oxford's" or peterborough or "peterborough's" or plymouth or "plymouth's" or portsmouth or "portsmouth's" or preston or "preston's" or ripon or "ripon's" or salford or "salford's" or salisbury or "salisbury's" or sheffield or "sheffield's" or southampton or "southampton's" or st albans or stoke or "stoke's" or sunderland or "sunderland's" or truro or "truro's" or wakefield or "wakefield's" or wells or westminster or "westminster's" or winchester or "winchester's" or wolverhampton or "wolverhampton's" or (worcester not (massachusetts* or boston* or harvard*)) or ("worcester's" not (massachusetts* or boston* or harvard*)) or (york not ("new york*" or ny or ontario* or ont or toronto*)) or ("york's" not ("new york*" or ny or ontario* or ont or toronto*))))).ti,ab,in,ad.
119	(bangor or "bangor's" or cardiff or "cardiff's" or newport or "newport's" or st asaph or "st asaph's" or st davids or swansea or "swansea's").ti,ab,in,ad.
120	(aberdeen or "aberdeen's" or dundee or "dundee's" or edinburgh or "edinburgh's" or glasgow or "glasgow's" or inverness or (perth not australia*) or ("perth's" not australia*) or stirling or "stirling's").ti,ab,in,ad.
121	(armagh or "armagh's" or belfast or "belfast's" or lisburn or "lisburn's" or londonderry or "londonderry's" or derry or "derry's" or newry or "newry's").ti,ab,in,ad.
122	or/114-121
123	(exp "arctic and antarctic"/ or exp oceanic regions/ or exp western hemisphere/ or exp africa/ or exp asia/) not (exp united kingdom/ or europe/)
124	122 not 123
125	113 and 124
126	limit 125 to dc=19950101-20231031

Database: Emcare

Date of last search: 16/10/2023

#	Searches
1	exp parent/
2	family relation/ or exp child parent relation/ or infant care/
3	exp grandparent/
4	caregiver/
5	legal guardian/
6	exp spouse/
7	(famil* or father* or husband* or mother* or partner* or spous* or maternal* or parent* or paternal* or grandparent* or grandfather* or grandmother* or care giver* or caregiver* or guardian*).tw,kf.
8	child/ or exp infant/ or preschool child/ or toddler/ or "minor (person)"/
9	pediatrics/ or exp neonatology/ or pediatric emergency medicine/ or pediatric nursing/
10	(child* or baby or babies or boy? or girl? or infan* or juvenile? or kid? or kindergar* or minors or neonat* or newborn? or p?ediatric* or preschool* or pre school* or toddler* or young).tw,kf.
11	(child* or baby or babies or infan* or kindergar* or neonat* or newborn or newborns or pediatric* or paediatric*).jw.
12	or/1-11
13	exp child nutrition/
14	weaning/
15	maternal nutrition/
16	baby food/ or artificial milk/
17	milk substitute/
18	((synthetic or substitute or artificial or hydrolys* or plant or powder*) adj2 (milk* or breastmilk*)).tw,kf.
19	(((formula* or bottle or cup or spoon or syringe) adj3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*).tw,kf.
20	or/13-19
21	12 and 20
22	patient attitude/ or exp patient compliance/ or patient participation/ or patient engagement/
23	protocol compliance/
24	nutrition policy/
25	(treatment* or guid* or nutriti* or diet* or supplement* or recommend* or policy or policies or requir* or allow* or protocol*).ti.
26	(guid* or recommend* or policy* or policies* or protocol*).ab. /freq=2

#	Searches
27	or/22-26
28	21 and 27
29	(barrier* or hinder* or block* or obstacle* or limit* or restrict* or restrain* or obstruct* or inhibit* or imped* or delay* or constrain* or hindrance* or refus* or decreas* or reduc* or discourag* or prevent* or disparit* or challeng* or impact* or inequalit* or deter* or inaccessib* or prohibit* or unaffordab* or unavailab* or dissatisf* or nonadher* or noncomply* or non comply* or noncomplian* or non complian* or ignor* or inconvenien*).tw,kf.
30	(facilitat* or uptak* or up-tak* or takeup* or tak*-up* or awar* or increas* or impact* or effect* or improv* or enhanc* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisf* or complian* or comply* or complie* or adopt* or implement* or availab* or provision or provid* or convenience or convenient or offer or incentiv* or start* or attend* or utiliz* or utilis* or sustain* or maintain* or deter* or identif* or adequa* or persuad* or persuasion or help* or enabl* or eligib* or decid* or decision* or afford* or deliver* or equalit* or behav* or influenc*).tw,kf.
31	mental stress/
32	financial stress/
33	psychological adjustment/
34	emotion/
35	anxiety/
36	fear/
37	motivation/
38	behavior/
39	attitude to health/
40	patient preference/ or patient satisfaction/ or treatment refusal/
41	decision making/ or patient decision making/
42	(prefer* or experience* or value* or perspective* or perception* or perceiv* or expectation* or choice* or choos* or willingness or attitud* or know* or belief* or believ* or opinion* or understand* or stress* or emotion* or anx* or fear* or concern* or uncertain* or unsure or thought* or feeling* or felt* or view* or aware* or priorit*).tw,kf.
43	exp interpersonal communication/ or consumer attitude/
44	consumer health information/ or information dissemination/ or information gap/ or knowledge gap/ or exp information seeking/ or medical information/ or patient information/
45	education/ or teaching/
46	health education/ or exp health literacy/ or exp health promotion/ or parenting education/ or patient education/
47	health behavior/
48	(advis* or advice* or counsel* or educat* or communicat* or inform* or miscommunicat* or misinform* or learn* or lesson* or material* or resource* or teach* or tool* or train* or tutorial* or knowledg*).tw,kf.
49	age/
50	exp parental age/
51	(age* or teenage* or young* or matur* or old*).tw,kf.
52	social preference/ or social stigma/
53	social stress/
54	shame/
55	social norm/
56	perception/
57	(stigma* or shame* or embarrass* or percepti* or perceiv*).tw,kf.
58	commercial phenomena/ or exp advertising/ or marketing/ or social marketing/
59	capitalism/
60	(commerc* or market* or telemarket* or advertis* or consumer*).tw,kf.
61	economics/
62	income/ or exp household income/ or remuneration/ or "salary and fringe benefit"/
63	"health care cost"/
64	((cost* or price* or pricing or expens* or income* or salar* or budget*) adj3 (((formula* or bottle or cup) adj3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*)).tw,kf.
65	exp population group/
66	cultural anthropology/
67	exp social background/
68	(race* or racial* or ethnic* or cultur* or religio* or custom* or ancest* or minorit* or multiracial* or multiethnic* or multicultural*).ti,ab,kf.

#	Searches
69	minority health/
70	exp social environment/
71	exp socioeconomics/
72	exp vulnerable population/
73	"social determinants of health"/
74	(communit* or environment* or social* or socioeconom* or econom* or demograph* or sociodemograph* or neighbo?rhood* or poverty or impoverish* or hardship* or privation* or income* or depriv* or financ*).ti,ab,kf.
75	exp social support/
76	time factor/
77	female worker/
78	(work* or job* or paid or employ* or student*).tw,kf.
79	feeding behavior/
80	food intake/
81	((feed* or fed or breast* or formula* or bottle*) adj2 (mix* or combin* or combo or supplement* or pattern* or practi?* or characteristic* or behavio?r* or expect*)).tw,kf.
82	(time* or availab* or ease or easy or issue* or problem* or difficult*).tw,kf.
83	lactation/
84	((cessat* or continu* or difficult* or discontinu*) adj3 (breastfeed* or breast feed* or breastfed* or breast fed* or lactat*)).tw,kf.
85	((express* or pump*) adj2 milk).tw,kf.
86	nurse/
87	health visitor/
88	home visit/
89	community health nursing/
90	lactation consultant/
91	((nurs* or visitor*) adj2 (home or visit* or health or communit*)).tw,kf.
92	or/29-91
93	28 and 92
94	animal/ not human/
95	nonhuman/
96	exp Animal Experiment/
97	exp Experimental Animal/
98	animal model/
99	exp Rodent/
100	(rat or rats or rodent* or mouse or mice).ti.
101	or/94-100
102	93 not 101
103	(conference abstract* or conference review or conference paper or conference proceeding).db,pt,su.
104	102 not 103
105	limit 104 to English language
106	CLUSTER ANALYSIS/ or CONTENT ANALYSIS/ or DISCOURSE ANALYSIS/ or ETHNOGRAPHY/ or GROUNDED THEORY/ or HEALTH CARE SURVEY/ or exp INTERVIEWS/ or NARRATIVE/ or NURSING METHODOLOGY RESEARCH/ or OBSERVATION/ or PERSONAL EXPERIENCE/ or PHENOMENOLOGY/ or QUALITATIVE RESEARCH/ or QUESTIONNAIRE/ or exp RECORDING/
107	(qualitative* or interview* or focus or questionnaire* or narrative* or narration* or survey* or experience* or themes).tw.
108	(ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic adj4 analys*) or theoretical sampl* or purposive sampl*).tw.
109	(hermeneutic* or heidegger* or husser* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).tw.
110	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them*).tw.
111	(critical interpretive synthes* or (realist adj (review* or synthes*)) or (noblit and hare) or (meta adj (method or triangulation)) or (cerqual or conqual) or ((thematic or framework) adj synthes*)).tw.
112	or/106-111

#	Searches
113	105 and 112
114	exp United Kingdom/
115	(national health service* or nhs*).ti,ab,in,ad.
116	(english not ((published or publication* or translat* or written or language* or speak* or literature or citation*) adj5 english)).ti,ab.
117	(gb or "g.b." or britain* or (british* not "british columbia") or uk or "u.k." or united kingdom* or (england* not "new england") or northern ireland* or northern irish* or scotland* or scottish* or ((wales or "south wales") not "new south wales") or welsh*).ti,ab,jx,in,ad.
118	(bath or "bath's" or ((birmingham not alabama*) or ("birmingham's" not alabama*) or bradford or "bradford's" or brighton or "brighton's" or bristol or "bristol's" or carlisle* or "carlisle's" or (cambridge not (massachusetts* or boston* or harvard*)) or ("cambridge's" not (massachusetts* or boston* or harvard*)) or (canterbury not zealand*) or ("canterbury's" not zealand*) or chelmsford or "chelmsford's" or chester or "chester's" or chichester or "chichester's" or coventry or "coventry's" or derby or "derby's" or (durham not (carolina* or nc)) or ("durham's" not (carolina* or nc)) or ely or "ely's" or exeter or "exeter's" or gloucester or "gloucester's" or hereford or "hereford's" or hull or "hull's" or lancaster or "lancaster's" or leeds* or leicester or "leicester's" or (lincoln not nebraska*) or ("lincoln's" not nebraska*) or (liverpool not (new south wales* or nsw)) or ("liverpool's" not (new south wales* or nsw)) or ((london not (ontario* or ont or toronto*)) or ("london's" not (ontario* or ont or toronto*)) or manchester or "manchester's" or (newcastle not (new south wales* or nsw)) or ("newcastle's" not (new south wales* or nsw)) or norwich or "norwich's" or nottingham or "nottingham's" or oxford or "oxford's" or peterborough or "peterborough's" or plymouth or "plymouth's" or portsmouth or "portsmouth's" or preston or "preston's" or ripon or "ripon's" or salford or "salford's" or salisbury or "salisbury's" or sheffield or "sheffield's" or southampton or "southampton's" or st albans or stoke or "stoke's" or sunderland or "sunderland's" or truro or "truro's" or wakefield or "wakefield's" or wells or westminster or "westminster's" or winchester or "winchester's" or wolverhampton or "wolverhampton's" or (worcester not (massachusetts* or boston* or harvard*)) or ("worcester's" not (massachusetts* or boston* or harvard*)) or (york not ("new york*" or ny or ontario* or ont or toronto*)) or ("york's" not ("new york*" or ny or ontario* or ont or toronto*))))).ti,ab,in,ad.
119	(bangor or "bangor's" or cardiff or "cardiff's" or newport or "newport's" or st asaph or "st asaph's" or st davids or swansea or "swansea's").ti,ab,in,ad.
120	(aberdeen or "aberdeen's" or dundee or "dundee's" or edinburgh or "edinburgh's" or glasgow or "glasgow's" or inverness or (perth not australia*) or ("perth's" not australia*) or stirling or "stirling's").ti,ab,in,ad.
121	(armagh or "armagh's" or belfast or "belfast's" or lisburn or "lisburn's" or londonderry or "londonderry's" or derry or "derry's" or newry or "newry's").ti,ab,in,ad.
122	or/114-121
123	(exp "arctic and antarctic"/ or exp oceanic regions/ or exp western hemisphere/ or exp africa/ or exp asia/) not (exp united kingdom/ or europe/)
124	122 not 123
125	113 and 124

Database: PsycINFO

Date of last search: 16/10/2023

#	Searches
1	grandparents/ or exp parents/ or exp spouses/
2	family relations/ or exp parent child relations/
3	exp parenting/
4	child care/
5	caregivers/
6	guardianship/
7	(famil* or father* or husband* or mother* or partner* or spous* or maternal* or parent* or paternal* or grandparent* or grandfather* or grandmother* or care giver* or caregiver* or guardian*).tw.
8	pediatrics/
9	(child* or baby or babies or boy? or girl? or infan* or juvenile? or kid? or kindergar* or minors or neonat* or newborn? or p?ediatric* or preschool* or pre school* or toddler* or young).tw.
10	(child* or baby or babies or infan* or kindergar* or neonat* or newborn or newborns or pediatric* or paediatric*).jx,jn.
11	or/1-10
12	early childhood development/ or infant development/
13	Childhood Development/
14	weaning/
15	bottle feeding/
16	((synthetic or substitute or artificial or hydrolys* or plant or powder*) adj2 (milk* or breastmilk*)).tw.

#	Searches
17	(((formula* or bottle or cup or spoon or syringe) adj3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*).tw.
18	or/12-17
19	11 and 18
20	exp Compliance/
21	health care policy/
22	Client Attitudes/
23	(treatment* or guid* or nutriti* or diet* or supplement* or recommend* or policy or policies or requir* or allow* or protocol*).ti.
24	(guid* or recommend* or policy* or policies* or protocol*).ab. /freq=2
25	or/20-24
26	19 and 25
27	(barrier* or hinder* or block* or obstacle* or limit* or restrict* or restrain* or obstruct* or inhibit* or imped* or delay* or constrain* or hindrance* or refus* or decreas* or reduc* or discourag* or prevent* or disparit* or challeng* or impact* or inequalit* or deter* or inaccessib* or prohibit* or unaffordab* or unavailab* or dissatisf* or nonadher* or noncomply* or non comply* or noncomplian* or non complian* or ignor* or inconvenien*).tw.
28	(facilitat* or uptak* or up-tak* or takeup* or tak*-up* or awar* or increas* or impact* or effect* or improv* or enhanc* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisf* or complian* or comply* or complie* or adopt* or implement* or availab* or provision or provid* or convenience or convenient or offer or incentiv* or start* or attend* or utiliz* or utilis* or sustain* or maintain* or deter* or identif* or adequa* or persuad* or persuasion or help* or enabl* or eligib* or decid* or decision* or afford* or deliver* or equalit* or behav* or influenc*).tw.
29	Psychological Stress/
30	Financial Strain/
31	Coping Behavior/
32	Emotions/
33	Anxiety/
34	fear/
35	intention/ or motivation/
36	childrearing attitudes/ or health attitudes/ or exp parental attitudes/
37	health knowledge/ or health awareness/ or health behavior/
38	client satisfaction/
39	treatment barriers/ or exp health care utilization/ or treatment refusal/
40	decision making/ or choice behavior/
41	(prefer* or experience* or value* or perspective* or perception* or perceiv* or expectation* or choice* or choos* or willingness or attitud* or know* or belief* or believ* or opinion* or understand* or stress* or emotion* or anx* or fear* or concern* or uncertain* or unsure or thought* or feeling* or felt* or view* or aware* or priorit*).tw.
42	exp communication/
43	education/ or client education/
44	teaching/
45	health education/ or health literacy/ or health promotion/
46	health information/
47	(advis* or advice* or counsel* or educat* or communicat* or inform* or miscommunicat* or misinform* or learn* or lesson* or material* or resource* or teach* or tool* or train* or tutorial* or knowledg*).tw.
48	age differences/
49	mothers/ or adolescent mothers/
50	(age* or teenage* or young* or matur* or old*).tw.
51	stigma/
52	shame/ or embarrassment/
53	social norms/
54	perception/ or social perception/
55	(stigma* or shame* or embarrass* or percepti* or perceiv*).tw.
56	exp Commerce/
57	Capitalism/
58	(commerc* or market* or telemarket* or advertis* or consumer*).tw.
59	Economics/

#	Searches
60	exp "income (economic)"/
61	poverty/
62	health care costs/
63	((cost* or price* or pricing or expens* or income* or salar* or budget*) adj3 (((formula* or bottle or cup) adj3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*)).tw.
64	exp "racial and ethnic groups"/
65	exp sociocultural factors/
66	psychosocial factors/
67	(race* or racial* or ethnic* or cultur* or religio* or custom* or ancest* or minorit* or multiracial* or multiethnic* or multicultural*).tw.
68	minority groups/
69	health disparities/ or cross cultural differences/
70	racial disparities/ or "racial and ethnic differences"/
71	exp social environments/
72	exp socioeconomic factors/
73	at risk populations/
74	(communit* or environment* or social* or socioeconom* or econom* or demograph* or sociodemograph* or neighbo?rhood* or poverty or impoverish* or hardship* or privation* or income* or depriv* or financ*).tw.
75	social support/
76	time/
77	working women/
78	(work* or job* or paid or employ* or student*).tw.
79	food intake/ or eating behavior/
80	((feed* or fed or breast* or formula* or bottle*) adj2 (mix* or combin* or combo or supplement* or pattern* or practi?* or characteristic* or behavio?r* or expect*)).tw.
81	(time* or availab* or ease or easy or issue* or problem* or difficult*).tw.
82	Lactation/
83	((cessat* or continu* or difficult* or discontinu*) adj3 (breastfeed* or breast feed* or breastfed* or breast fed* or lactat*)).tw.
84	((express* or pump*) adj2 milk).tw.
85	Home Visiting Programs/
86	public health service nurses/
87	((nurs* or visitor*) adj2 (home or visit* or health or communit*)).tw.
88	or/27-87
89	26 and 88
90	animal.po.
91	(rat or rats or rodent* or mouse or mice).ti.
92	or/90-91
93	89 not 92
94	limit 93 to English language
95	"EXPERIENCES (EVENTS)"/ or CLUSTER ANALYSIS/ or FOCUS GROUP/ or CONTENT ANALYSIS/ or DISCOURSE ANALYSIS/ or ETHNOGRAPHY/ or GROUNDED THEORY/ or INTERVIEWERS/ or INTERVIEWING/ or INTERVIEWS/ or NARRATIVES/ or OBSERVATION METHODS/ or PHENOMENOLOGY/ or QUALITATIVE METHODS/ or QUESTIONNAIRES/ or QUESTIONING/ or exp SURVEYS/ or TAPE RECORDERS/
96	(qualitative* or interview* or focus or questionnaire* or narrative* or narration* or survey* or experience* or themes).tw.
97	(ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic adj4 analys*) or theoretical sampl* or purposive sampl*).tw.
98	(hermeneutic* or heidegger* or husser* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).tw.
99	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them*).tw.
100	(critical interpretive synthes* or (realist adj (review* or synthes*)) or (noblit and hare) or (meta adj (method or triangulation)) or (cerqual or conqual) or ((thematic or framework) adj synthes*)).tw.
101	or/95-100
102	94 and 101

#	Searches
103	(national health service* or nhs*).ti,ab,in,cq.
104	(english not ((published or publication* or translat* or written or language* or speak* or literature or citation*) adj5 english)).ti,ab.
105	(gb or "g.b." or britain* or (british* not "british columbia") or uk or "u.k." or united kingdom* or (england* not "new england") or northern ireland* or northern irish* or scotland* or scottish* or ((wales or "south wales") not "new south wales") or welsh*).ti,ab,jx,in,cq.
106	(bath or "bath's" or ((birmingham not alabama*) or ("birmingham's" not alabama*) or bradford or "bradford's" or brighton or "brighton's" or bristol or "bristol's" or carlisle* or "carlisle's" or (cambridge not (massachusetts* or boston* or harvard*)) or ("cambridge's" not (massachusetts* or boston* or harvard*)) or (canterbury not zealand*) or ("canterbury's" not zealand*) or chelmsford or "chelmsford's" or chester or "chester's" or chichester or "chichester's" or coventry or "coventry's" or derby or "derby's" or (durham not (carolina* or nc)) or ("durham's" not (carolina* or nc)) or ely or "ely's" or exeter or "exeter's" or gloucester or "gloucester's" or hereford or "hereford's" or hull or "hull's" or lancaster or "lancaster's" or leeds* or leicester or "leicester's" or (lincoln not nebraska*) or ("lincoln's" not nebraska*) or (liverpool not (new south wales* or nsw)) or ("liverpool's" not (new south wales* or nsw)) or ((london not (ontario* or ont or toronto*)) or ("london's" not (ontario* or ont or toronto*)) or manchester or "manchester's" or (newcastle not (new south wales* or nsw)) or ("newcastle's" not (new south wales* or nsw)) or norwich or "norwich's" or nottingham or "nottingham's" or oxford or "oxford's" or peterborough or "peterborough's" or plymouth or "plymouth's" or portsmouth or "portsmouth's" or preston or "preston's" or ripon or "ripon's" or salford or "salford's" or salisbury or "salisbury's" or sheffield or "sheffield's" or southampton or "southampton's" or st albans or stoke or "stoke's" or sunderland or "sunderland's" or truro or "truro's" or wakefield or "wakefield's" or wells or westminster or "westminster's" or winchester or "winchester's" or wolverhampton or "wolverhampton's" or (worcester not (massachusetts* or boston* or harvard*)) or ("worcester's" not (massachusetts* or boston* or harvard*)) or (york not ("new york*" or ny or ontario* or ont or toronto*)) or ("york's" not ("new york*" or ny or ontario* or ont or toronto*))))).ti,ab,in,cq.
107	(bangor or "bangor's" or cardiff or "cardiff's" or newport or "newport's" or st asaph or "st asaph's" or st davids or swansea or "swansea's").ti,ab,in,cq.
108	(aberdeen or "aberdeen's" or dundee or "dundee's" or edinburgh or "edinburgh's" or glasgow or "glasgow's" or inverness or (perth not australia*) or ("perth's" not australia*) or stirling or "stirling's").ti,ab,in,cq.
109	(armagh or "armagh's" or belfast or "belfast's" or lisburn or "lisburn's" or londonderry or "londonderry's" or derry or "derry's" or newry or "newry's").ti,ab,in,cq.
110	or/103-109
111	102 and 110
112	limit 111 to up=19950101-20231031

Database: CINAHL (Cumulated Index to Nursing and Allied Health Literature)

Date of last search: 16/10/2023

#	Searches
S82	S29 AND S80 Limiters - Published Date: 19950101-20231031; English Language; Exclude MEDLINE records; Human; Clinical Queries: Qualitative - High Sensitivity; Geographic Subset: UK & Ireland
S81	S29 AND S80
S80	S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76 OR S77 OR S78 OR S79
S79	TI (((nurs* or visitor*) N2 (home or visit* or health or communit*))) OR AB (((nurs* or visitor*) N2 (home or visit* or health or communit*)))
S78	(MH "Community Health Nurses") OR (MH "Community Health Nursing")
S77	TI (((express* or pump*) N2 milk)) OR AB (((express* or pump*) N2 milk))
S76	TI (((cessat* or continu* or difficult* or discontinu*) N3 (breastfeed* or "breast feed*" or breastfed* or "breast fed*" or lactat*))) OR AB (((cessat* or continu* or difficult* or discontinu*) N3 (breastfeed* or "breast feed*" or breastfed* or "breast fed*" or lactat*)))
S75	(MH "Lactation")
S74	TI ((time* or availab* or ease or easy or issue* or problem* or difficult*)) OR AB ((time* or availab* or ease or easy or issue* or problem* or difficult*).)
S73	TI (((feed* or fed or breast* or formula* or bottle*) N2 (mix* or combin* or combo or supplement* or pattern* or practi?* or characteristic* or behavio?r* or expect*))) OR AB (((feed* or fed or breast* or formula* or bottle*) N2 (mix* or combin* or combo or supplement* or pattern* or practi?* or characteristic* or behavio?r* or expect*)))
S72	(MH "Eating Behavior") OR (MH "Feeding Methods")
S71	TI ((work* or job* or paid or employ* or student*)) OR AB ((work* or job* or paid or employ* or student*))
S70	(MH "Women, Working+")
S69	(MH "Time Factors")

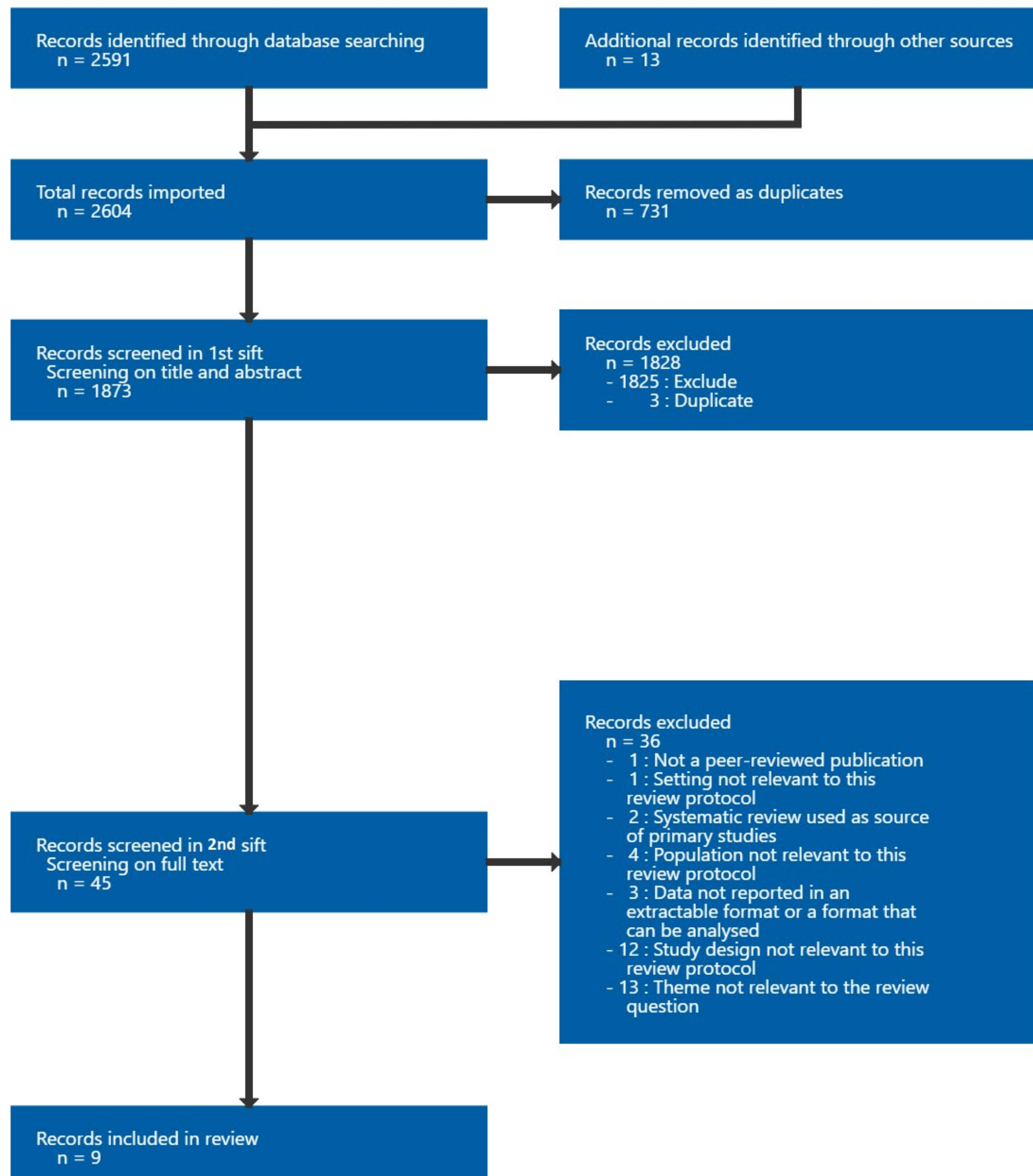
#	Searches
S68	(MH "Support, Social+")
S67	TI ((communit* or environment* or social* or socioeconom* or econom* or demograph* or sociodemograph* or neighbo?rhood* or poverty or impoverish* or hardship* or privation* or income* or depriv* or financ*)) OR AB ((communit* or environment* or social* or socioeconom* or econom* or demograph* or sociodemograph* or neighbo?rhood* or poverty or impoverish* or hardship* or privation* or income* or depriv* or financ*))
S66	(MH "Social Determinants of Health")
S65	(MH "Health Status Disparities+")
S64	(MH "Minority Groups") OR (MH "Social Environment+") OR (MH "Socioeconomic Factors+")
S63	TI ((race* or racial* or ethnic* or cultur* or religio* or custom* or ancest* or minorit* or multiracial* or multiethnic* or multicultural*)) OR AB ((race* or racial* or ethnic* or cultur* or religio* or custom* or ancest* or minorit* or multiracial* or multiethnic* or multicultural*))
S62	(MH "Culture+")
S61	TI (((cost* or price* or pricing or expens* or income* or salar* or budget*) N3 (((formula* or bottle or cup) N3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*))) OR AB (((cost* or price* or pricing or expens* or income* or salar* or budget*) N3 (((formula* or bottle or cup) N3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*)))
S60	(MH "Poverty")
S59	(MH "Income+")
S58	(MH "Economics")
S57	TI ((commerc* or market* or telemarket* or advertis* or consumer*)) OR AB ((commerc* or market* or telemarket* or advertis* or consumer*))
S56	(MH "Business") OR (MH "Electronic Commerce")
S55	TI ((stigma* or shame* or embarrass* or percepti* or perceiv*)) OR AB ((stigma* or shame* or embarrass* or percepti* or perceiv*))
S54	(MH "Perception") OR (MH "Social Perception+")
S53	(MH "Shame+")
S52	(MH "Stigma") OR (MH "Social Norms") OR (MH "Social Attitudes")
S51	TI ((age* or teenage* or young* or matur* or old*)) OR AB ((age* or teenage* or young* or matur* or old*))
S50	(MH "Maternal Age+") OR (MH "Paternal Age")
S49	(MH "Age Factors")
S48	TI ((advis* or advice* or counsel* or educat* or communicat* or inform* or miscommunicat* or misinform* or learn* or lesson* or material* or resource* or teach* or tool* or train* or tutorial* or knowledg*)) OR AB ((advis* or advice* or counsel* or educat* or communicat* or inform* or miscommunicat* or misinform* or learn* or lesson* or material* or resource* or teach* or tool* or train* or tutorial* or knowledg*))
S47	(MH "Health Behavior")
S46	(MH "Health Education") OR (MH "Childbirth Education") OR (MH "Parenting Education") OR (MH "Patient Education") OR (MH "Nutrition Education")
S45	(MH "Health Promotion+")
S44	(MH "Information Literacy") OR (MH "Consumer Health Information+") OR (MH "Access to Information+")
S43	(MH "Education") OR (MH "Teaching")
S42	(MH "Communication+")
S41	TI ((prefer* or experience* or value* or perspective* or perception* or perceiv* or expectation* or choice* or choos* or willingness or attitud* or know* or belief* or believ* or opinion* or understand* or stress* or emotion* or anx* or fear* or concern* or uncertain* or unsure or thought* or feeling* or felt* or view* or aware* or priorit*)) OR AB ((prefer* or experience* or value* or perspective* or perception* or perceiv* or expectation* or choice* or choos* or willingness or attitud* or know* or belief* or believ* or opinion* or understand* or stress* or emotion* or anx* or fear* or concern* or uncertain* or unsure or thought* or feeling* or felt* or view* or aware* or priorit*))
S40	(MH "Decision Making, Patient") OR (MH "Decision Making")
S39	(MH "Treatment Refusal")
S38	(MH "Health Knowledge")
S37	(MH "Attitude to Health") OR (MH "Patient Satisfaction+") OR (MH "Consumer Attitudes") OR (MH "Patient Attitudes")
S36	(MH "Motivation") OR (MH "Intention")
S35	(MH "Emotions") OR (MH "Anxiety") OR (MH "Fear")
S34	(MH "Adaptation, Psychological")
S33	(MH "Financial Stress")
S32	(MH "Stress, Psychological")

#	Searches
S31	TI ((facilitat* or uptak* or up-tak* or takeup* or tak*-up* or awar* or increas* or impact* or effect* or improv* or enhanc* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisf* or complian* or comply* or complie* or adopt* or implement* or availab* or provision or provid* or convenience or convenient or offer or incentiv* or start* or attend* or utiliz* or utilis* or sustain* or maintain* or deter* or identif* or adequa* or persuad* or persuasion or help* or enabl* or eligib* or decid* or decision* or afford* or deliver* or equalit* or behav* or influenc*)) OR AB ((facilitat* or uptak* or up-tak* or takeup* or tak*-up* or awar* or increas* or impact* or effect* or improv* or enhanc* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisf* or complian* or comply* or complie* or adopt* or implement* or availab* or provision or provid* or convenience or convenient or offer or incentiv* or start* or attend* or utiliz* or utilis* or sustain* or maintain* or deter* or identif* or adequa* or persuad* or persuasion or help* or enabl* or eligib* or decid* or decision* or afford* or deliver* or equalit* or behav* or influenc*))
S30	TI ((barrier* or hinder* or block* or obstacle* or limit* or restrict* or restrain* or obstruct* or inhibit* or imped* or delay* or constrain* or hindrance* or refus* or decreas* or reduc* or discourag* or prevent* or disparit* or challeng* or impact* or inequalit* or deter* or inaccessib* or prohibit* or unaffordab* or unavailab* or dissatisf* or nonadher* or noncomply* or "non comply*" or noncomplian* or "non complian*" or ignor* or inconvenien*)) OR AB ((barrier* or hinder* or block* or obstacle* or limit* or restrict* or restrain* or obstruct* or inhibit* or imped* or delay* or constrain* or hindrance* or refus* or decreas* or reduc* or discourag* or prevent* or disparit* or challeng* or impact* or inequalit* or deter* or inaccessib* or prohibit* or unaffordab* or unavailab* or dissatisf* or nonadher* or noncomply* or "non comply*" or noncomplian* or "non complian*" or ignor* or inconvenien*))
S29	S22 AND S28
S28	S23 OR S24 OR S25 OR S26 OR S27
S27	AB (guid* or recommend* or policy* or policies* or protocol*)
S26	TI (treatment* or guid* or nutriti* or diet* or supplement* or recommend* or policy or policies or requir* or allow* or protocol*)
S25	(MH "Nutrition Policy+")
S24	(MH "Attitude to Medical Treatment")
S23	(MH "Patient Compliance+") OR (MH "Guideline Adherence")
S22	S15 AND S21
S21	S16 OR S17 OR S18 OR S19 OR S20
S20	TI ((((formula* or bottle or cup or spoon or syringe) N3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*)) OR AB ((((formula* or bottle or cup or spoon or syringe) N3 (infant or fed or feed*)) or formulafed or bottlefed or bottlefeed* or cupfeed* or cupfed or spoonfed or spoonfeed*))
S19	TI (((synthetic or substitute or artificial or hydrolys* or plant or powder*) N2 (milk* or breastmilk*))) OR AB (((synthetic or substitute or artificial or hydrolys* or plant or powder*) N2 (milk* or breastmilk*)))
S18	(MH "Milk Substitutes")
S17	(MH "Infant Food+")
S16	(MH "Child Nutritional Physiology") OR (MH "Infant Nutritional Physiology") OR (MH "Maternal Nutritional Physiology") OR (MH "Infant Weaning") OR (MH "Bottle Feeding")
S15	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14
S14	SO (child* or baby or babies or infan* or kindergar* or neonat* or newborn or newborns or pediatric* or paediatric*)
S13	TI ((child* or baby or babies or boy#? or girl#? or infan* or juvenile#? or kid#? or kindergar* or minors or neonat* or newborn#? or p?ediatric* or preschool* or pre school* or toddler* or young)) OR AB ((child* or baby or babies or boy#? or girl#? or infan* or juvenile#? or kid#? or kindergar* or minors or neonat* or newborn#? or p?ediatric* or preschool* or pre school* or toddler* or young))
S12	(MH "Pediatric Nursing")
S11	(MH "Pediatrics+")
S10	(MH "Child+")
S9	TI ((famil* or father* or husband* or mother* or partner* or spous* or maternal* or parent* or paternal* or grandparent* or grandfather* or grandmother* or care giver* or caregiver* or guardian*)) OR AB ((famil* or father* or husband* or mother* or partner* or spous* or maternal* or parent* or paternal* or grandparent* or grandfather* or grandmother* or care giver* or caregiver* or guardian*))
S8	(MH "Spouses")
S7	(MH "Guardianship, Legal")
S6	(MH "Caregivers")
S5	(MH "Grandparents")
S4	(MH "Infant Care")
S3	(MH "Parenting")
S2	(MH "Family Relations") OR (MH "Maternal Behavior") OR (MH "Paternal Behavior") OR (MH "Parent-Child Relations+") OR (MH "Parent-Infant Relations+")
S1	(MH "Parents+")

Appendix C Qualitative evidence study selection

Study selection for: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

Figure 3: Study selection flow chart



Appendix D Evidence tables

Evidence tables for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

Table 5: Evidence tables

Conway, 2023

Bibliographic Reference	Conway, Rana; Ritchie, Isabel; Esser, Sara; Steptoe, Andrew; Smith, Andrea D; Llewellyn, Clare; Perceived influence of commercial milk formula labelling on mothers' feeding choices in Great Britain: a qualitative study; Archives of Disease in Childhood; 2023; vol. 108 (no. 12); 1008

Study Characteristics

Study type	General qualitative inquiry
Country/ies where study was carried out	United Kingdom
Setting	**Setting** Interviews were conducted via Microsoft Teams or Zoom. **Aim** To understand how mothers use commercial milk formula (CMF) labels to inform their feeding choices and explore mothers' understanding of differences between CMF products.
Data collection and analysis	**Data collection**

	Virtual semi-structured interviews were conducted to collect data and were recorded and transcribed verbatim. The interviews lasted a mean of 54 minutes (SD 6). **Data analysis** Interpretivist thematic analysis was used to analyse the data and two researchers worked to corroborate the findings.
Recruitment strategy	Quota sampling was used to recruit participants through social media (primarily Facebook). Purposive sampling was also used to choose participants from different ethnicities and household composition.
Study dates	September to December 2021
Sources of funding	Not industry funded
Inclusion criteria	• >18 years old • Parent or main caregiver to a child <3 years old • Child currently taking commercial milk formula • UK resident • Able to speak English
Exclusion criteria	Not reported
Sample size	N=25 women
Participant characteristics	**Mean age of participant, years (SD):** 29.9 (5.1) **Mean age of infant, years (SD):** 10.4 (8.4) **Feeding: mixed commercial formula milk and breastfeeding, n (%):** 7 (28) **Number of children, n (%):**

	One: 17 (68) Two: 5 (20) Three or more: 3 (12) **Socioeconomic status, n (%):** Low: 9 (36) Medium: 8 (32) High: 8 (32) **Annual household income below £30,000, n (%):** 8 (32)
Results	Author's themes: 1. It's all about the brand 2. Formula stages exist for a reason 3. Presentation matters <u>It's all about the brand</u> Participants were aware of the leading brands of commercial milk formula (CMF) and perceived them to be a 'safe choice' and thought the companies had 'done their research'. Participants described advertisements and proactive information about CMF from friends and family, brand websites, and social media. Participants reported that the consideration for swapping formula brands was done carefully, where mothers who had no feeding problems rarely considered it and those with feeding problems viewed swapping formula as a solution.

	Many formula feeding mothers wanted more support from HCPs, as they felt this stopped abruptly after they were no longer viewed as breastfeeding. When they asked a midwife or health visitor to recommend a brand, the HCPs reported they were not allowed to do this and therefore participants turned to other information sources (for example, friends, brand websites) Participants reported feeling overwhelmed by the number of different formula brands and the products available, which required some research to pick 'the best one'. When told products were all relatively similar, participants felt confident to pick the cheapest one, although there was still some uncertainty. Participants reflected on their thoughts and beliefs about CMF and considered marketing to be the only real difference between products. *‘To be honest, I think most of it just came up from actually what I'd seen over just my lifetime of adverts actually and TV things, and what became like a familiar sort of brand that you'd heard of. So, I'd seen a lot of [brand X] adverts, I’d seen a lot of I think it’s the [Brand Y] one as well, I’ve seen quite a few adverts…It’s actually literally just been from advertising, sort of, I guess a trusted brand name that you've kind of heard, especially being a new mum, you want something you know.’* (P14, 2 months) *‘If she wasn’t happy with it then, yes I would have changed but she actually likes it. She is very, very healthy so I just stayed with the [Brand X].’* (P01, 27 months) *‘It was more friends and family rather than the midwife with what formula feed is best….They were saying [Brand X] was best with less chance of getting colic for the babies, so in the end they said [Brand X] has got the same breast nutritions in it too.’* (P25, 0.5 months) *‘it definitely appeased something in me that I was getting [Brand X]…. I thought in my head at that time, well, if I was going to formula feed, then I had the best on the market and that was it. But, if I wasn’t a mum at 4am in [supermarket], I would tell myself that is absolute nonsense, and there’s probably little to no difference in any of them’.* (P09, 8 months) [Quotes: page 1011, table 2] <u>Formula stages exist for a reason</u> Participants described the importance of starting with products labelled as 'suitable from birth' but there were different views about stages of formula milk. First time mothers reported it was best to follow the guidance on the formula milk label, and they felt that if different stages of formula milk were not required, the products would not exist. However, one mother

	described FOF as ‘just marketing fluff ’ and those who said ‘all they need is first milk’ often based this on a single conversation with a health visitor or friend, or reading a particular article. Those participants who were convinced that the formula milk stages were different struggled to articulate how, despite having looked at the ingredient or nutrient panels. There was also confusion about when specialist formula was required and participants reported that the formula tins should have clearer explanations on the pack. *‘with my other two I put them onto cows’ milk at one. But I know now [Brand X] has stage three and it’s got more vitamins in it. So, depending on how money is I might, we might carry on with stage three but it is so expensive [laughs] not going to lie.’* (P15, 3 months) *‘I find that information quite confusing actually because some of the products market formula milk that you’re meant to start at 6 months and then some of the guidance is actually you’re weaning solids at 6 months but keeping them on the same milk. So yes, no, we need to do some research on that, I need some more guidance on that.’* (P17, 4 months) *‘I don't know what the difference is with the toddler milks to be honest. But for me, because I'm an anxious person, if it said don’t use it, use this after six months and use this after a year, I would go by what it said, rather than using my own judgement type thing.’* (P18, 15 months) *‘I asked the health visitor and she just said, “Oh keep him on stage one, that’s fine.” But then I’m like, that’s all well and good but why is there then a stage two? She didn’t explain.’* (P23, 8 months) *'the [Brand X] Comfort – what does that one say on it? “For colic”. Okay.’* (P12, 10 months) *‘so the Comfort I know is good if they suffer with constipation or reflux…and obviously [Brand X] Lactose Free would be good if you thought they had an allergy.’* (P08, 8 months) *‘[Brand X] Comfort is like the one for keeping the babies fuller for longer.’* (P13, 8 months) [Quotes: page 1011, table 2] <u>Presentation matters</u>

	The appearance of packs, including colours and images, was fundamental to mothers' understanding of the differences between products. Products which had baby friendly images (for example, teddy bears, pictures of animals) were perceived to be warm and friendly by some, and cheap by others. Some people wanted packaging that was more formal and scientific, and knew that these products were more expensive. Participants considered these products to be superior but were unsure why or how. Mothers described different messaging features being particularly important, for example those labelled as organic with pictures of the countryside were described as more natural, more nutrient rich, healthier, having 'more properties' or 'just better'. *'you want to make sure they are getting the best, I suppose and you want to have some faith in the product. I don't think [Brand X] product really screams– I don't know. I don't know. I just don't like it. I look at it and I think it's childish.'* (P20, 3 months) *'It is up to you, I suppose, to do your research. Because if they are all the same, then why don't we just go for the cheapest? That's the question. We are programmed to think one is better than the other and they are probably not, are they?'* (P12, 10 months) *'to me, "leading baby nutrition research for over 100 years" is way more important, and way more grabbing and confidence building. There's certain things you would just expect there to be and Omega 3 and 6 is probably one of the things that I would just not be shocked is in there, that's great. What would sway me more to buy this is definitely if they're leaders for 100 years.'* (P09, 8 months) *'for me that was something I would look quite closely, as a breastfeeding mum, on the packaging if it says it's "breastfeeding friendly", it tells me that it's really close, in like to likeness to breastmilk.'* (P12, 10 months) ['Breastmilk substitute' was written on product viewed] *'[Brand X logo] stands out because it's very simple but it proper stands out. It looks like a mother but then her breast, so it's showing it's similar to breast milk.'* (P25, 0.5 months) *'the M in the middle kind of looks like a breast feeding mum so I kind of look at that and think oh maybe it's good because it's kind of got that breast feeding association with it so you are giving a pure feed kind of, that's kind of what I get from seeing that.'* (P10, 9 months) [Quotes: page 1011, table 2]

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	No or very minor concerns
Overall risk of bias and relevance	Relevance	Highly relevant

Guell, 2018

Bibliographic Reference	Guell, Cornelia; Whittle, Fiona; Ong, Ken K; Lakshman, Rajalakshmi; Toward Understanding How Social Factors Shaped a Behavioral Intervention on Healthier Infant Formula-Feeding.; Qualitative health research; 2018; vol. 28 (no. 8); 1320-1329

Study Characteristics

Study type	General qualitative inquiry Semi-structured interviews
Country/ies where study was carried out	United Kingdom (England)
Setting	**Setting** A convenient location for the participants (usually their home with their infant present). **Aim** To examine whether the intervention (to educate new mothers about healthy ways of formula feeding) was delivered as intended, to unpack processes of implementation and behaviour change, and to explore the views of intervention facilitators and recipients and experiences of delivering and taking part in the trial.

Data collection and analysis	**Data collection** Semi-structured interviews conducted in person. Interviews lasted between 32 and 77 minutes and were audio-recorded and transcribed verbatim. **Data analysis** Thematic analysis was conducted by two researchers, who double-coded participant transcripts, developed a coding tree, and finalised the code book. The researchers identified an initial set of themes for the results.
Recruitment strategy	Participants were recruited from the 'Baby-Milk Trial', from the last wave of families that had just completed the trial protocol. The participants had been initially recruited to the trial if identified as formula feeding by research staff or health professionals.
Study dates	July to October 2015
Sources of funding	Not industry funded
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Sample size	N=19 women (all formula feeding)
Participant characteristics	**First time mothers, n:** 11/19
Results	Authors themes: 1. Receiving Professional Attention When Support Was Felt Withheld 2. Receiving Trial Advice on the Backdrop of Disparate, Informal, and Often Conflicting Information 3. Joining the trial with an older infant demanded too much change of entrenched practices **Receiving professional attention when support was felt withheld** Participants reported they wanted to join the intervention trial 'Baby-Milk Trial' to get more information and support on infant formula feeding. The trial was a source of reliable information that was tailored to them, something which the participants had not encountered beforehand.

	'Yeah, very good, very interesting [taking part in the study], I liked it, yeah, because I had the support of [the facilitator] and she said to me "If you need me just send me an email or call me and I will be there," . . . so yeah, I liked it very much.' (Control Group Participant C) [Quote: page 1322] The participants expressed the lack of advice on formula-feeding and having to rely on sparse information provided on leaflets or formula milk tins, or advice that was perceived to come reluctantly from healthcare professionals. All participants felt that healthcare professionals were too busy to give information about formula feeding or reluctant because they wanted to promote breastfeeding. *'Well, . . . it was offering quite a lot of advice that I hadn't been given by any other health . . . professionals . . . it's very difficult because you're led to believe that breastfeeding is best and that's the way to do it, but obviously from my point-of-view, it didn't happen, it was bottle-feeding and it was like, "I don't know how much to give," when we left the hospital it wasn't very clear, how often do I do it, do I feed on demand or do I do sort of set feeds, you know, and for a first-time mum, it was just very confusing. To have something there that could offer that sort of support and advice and a bit of guidance, was just great, to be honest. (I)'* [Quote: page 1322] Participants also reported negative reactions from their friends and the public when expressing their desire to formula-feed, which made the participants feel the need to constantly justify why they were formula feeding. *'...it's like other parents looking down on you, that are breastfeeding, I found that that was a major thing. If I went to any baby groups, I'd try and make sure that she'd already had a bottle.' (I)* [Quote: page 1323] **Receiving trial advice on the backdrop of disparate, informal, and often conflicting information** Participants were given guidance recommended by the WHO on healthy formula milk amounts, recognising infant's satiety cues, and understanding that an infant was not always crying due to hunger. Prior to the trial, women recounted how they had used their own experience with previous children, or that of family and friends, to make decisions about how to feed their infants. *'In terms of, you know, bottle-feeding and what formulas and how much and all that kind of stuff, I mean the internet really has been a really good source. As I said, friends, my two best friends had exclusively bottle-fed . . . so a combination of the internet and other friends and your gut really.' (C)* [Quote: page 1323] Participants also reported receiving inconsistent information from healthcare professionals.

	'...this is the problem, I don't think there's a great deal of guidance, obviously you get what's on the tin which tells you a rough idea of how much you should be feeding your baby, but what I got was conflicting information between the health visitor, a midwife and my GP, because I found it really hard to work out "do I stick to the tin" . . . 'cos that's what my midwife told me to do, "feed him every couple of hours and make sure he doesn't go no longer than this amount of time," which was fine in the beginning and then the health visitor comes round "no, no, no, you should feed on demand 'cos he's crying he's hungry." . . . Yeah, you do feel a bit in the dark and you've only got what's, as I say, the guidance on the tin and then guidance from the healthcare professionals that see you, but they don't always think on the same hymn sheet . . .' (C) [Quote: page 1323] Participants reported receiving conflicting information from external sources, which also conflicted with the information given during the Baby-Milk trial. *'. . . when I left hospital with him, he was underweight and the hospital were saying, "You know, you've got to feed him on demand" and [the facilitator] was saying to me "Well do you think you can feed him less," but when I told her what the hospital said, she said "Well, we can't really ignore the hospital." (I)* [Quote: page 1324] Participants felt there was a lot of focus on weight gain of their child being a positive outcome. Some women reported on their initial experience of failing to give their infants enough breastmilk—which had been assessed by the weight gained by the infant. *'He doesn't gain weight very quickly, he's right at the bottom on the percentiles and there was like one week where he lost weight when he was ill and I was really worried about him I was really struggling, I was in a lot of pain and that was the main issue actually, she wasn't putting on as much weight as they wanted her to and we'd got to kind of a crisis point where . . . I was told by the breastfeeding lady that I needed to give her formula top-ups.' (C)* [Quote: page 1324] **Joining the trial with an older infant demanded too much change of entrenched practices** Women appreciated personalised support that they received from this study. After being given information about recommended feeding amounts, women in this study realised that they were already exceeding the guidance. Rather than decreasing the amount they fed their infant, women stuck to the feeding amount until their infant had caught up with the trial recommendations. *'I think had we been recruited onto the study earlier, then we might not have been in that set routine and I might have been a bit more receptive to changing things.'* (I) [Quote: page 1324]

	Note: the author's theme 'Joining the trial with an older infant demanded too much change of entrenched practices' also represents views of the intervention facilitator, which are not being considered in this evidence synthesis.

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	Minor concerns *(It is unclear whether the researcher critically examined their own role, potential bias and influence during the study.)*
Overall risk of bias and relevance	Relevance	Highly relevant

Hoddinott, 1999

Bibliographic Reference	Hoddinott P; Pill R; Nobody actually tells you: a study of infant feeding; British Journal of Midwifery; 1999; (no. 7); 558-565

Study Characteristics

Study type	Grounded theory Semi-structured interviews
Country/ies where study was carried out	United Kingdom
Setting	**Setting** Interviews carried out 6-10 weeks after birth. Participants chose time and place of the interviews. Most of the participants (n=17) chose to be interviewed at home.

	Aim To examine antenatal expectations and postnatal experiences of first-time mothers.
Data collection and analysis	**Data collection** Participants chose whether they were interviewed alone or with another person. Interviews were face-to-face, tape-recorded, and fully transcribed. Data were collected in an iterative manner. **Data analysis** The framework method was applied systematically, both within and across cases using categories and themes identified by reading the transcripts. The data were analysed by one researcher.
Recruitment strategy	Purposeful sampling was used to recruit women from a deprived inner London health authority, by GPS and midwives known to the primary researcher.
Study dates	Not reported
Sources of funding	Not industry funded
Inclusion criteria	• Lower socio-economic status • Lower educational levels • Primigravida
Exclusion criteria	Not reported
Sample size	N=19 women (mixed, formula feeding and breastfeeding)
Participant characteristics	**Ethnicity, white, n:** 19
Results	Author's themes: 1. Coping with being a new parent by changing feeding behaviour **Coping with being a new parent by changing feeding behaviour**

	In the immediate days after birth, women described feeling ‘fragile’ and ‘vulnerable’, with their confidence being intimately related to their baby’s behaviour. For example, a happy, sleeping baby reassured the mother that she is satisfying and pleasing her baby. A baby’s behaviour was most often attributed to feeding, rather than other factors, and was an important motivator for changing behaviour. For example, one woman who formula fed her baby reported changing the brand of formula she used. *'Well I got recommended SMA because that’s what the hospital used for the babies. I tried that — SMA Gold — and he’s bringing the whole bottle up, like a fountain, and in the end the midwife said it’s probably too rich for him, change his milk. So I changed it to Cow and Gate Premium and he’s having a bottle every hour, every two hours and it wasn’t filling him up. So I changed it again’.* Natasha (formula feeding) [Quote: pages 562 & 563] Note: the author reported the themes 'Unmet expectations — feeling a failure', 'Preparation for Motherhood and infant feeding' and 'A perceived secrecy about the realities of the first few weeks after birth', which did not report on any relevant data for this review question.

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	No or very minor concerns
Overall risk of bias and relevance	Relevance	Highly relevant

Hoddinott, 2000

Bibliographic Reference	Hoddinott P; Pill R; A qualitative study of women's views about how health professionals communicate about infant feeding; Health Expectations; 2000; (no. 3); 224-233

Study Characteristics

Study type	Grounded theory Semi-structured interviews
Country/ies where study was carried out	United Kingdom
Setting	**Setting** Participants chose time and place of the interviews. Most of the participants (n=17) chose to be interviewed at home. **Aim** To look at how communication by health professionals about infant feeding is perceived by first time mothers.
Data collection and analysis	**Data collection** Participants chose whether they were interviewed alone or with another person. Interviews were face-to-face, tape-recorded, and fully transcribed. Data were collected in an iterative manner. **Data analysis** The framework method was applied systematically, both within and across cases using categories and themes identified by reading the transcripts. The data were analysed by two researchers.
Recruitment strategy	Purposeful sampling was used to recruit women from a deprived inner London health authority, by GPS and midwives known to the primary researcher. Note: Same participants as Hoddinott 1999.
Study dates	Not reported
Sources of funding	Not industry funded.
Inclusion criteria	• Lower socio-economic status • Lower educational levels • Primigravida

Exclusion criteria	Not reported
Sample size	N=19 women (mixed, formula feeding and breastfeeding)
Participant characteristics	**Ethnicity, white, n:** 19
Results	Author's themes: 1. Words are not enough **Words are not enough** Participants distinguished between health professionals who seemed to really care and those who appeared more impersonal. The majority of women waited for health professionals to be proactive and offer support with both breast and bottle feeding. *'The midwife in the Hospital ... I think she had a bit of a hump about breastfeeding. She asked me if I was going to do breastfeeding, I said "no, I'd rather bottle feed" and she just bunged the bottles on to me and walked off... I think they do prefer you breastfeeding because the lady in front of me, she was breastfeeding and she got visited about three times in the morning and no-one ever come to me. The midwife came up to show me ... about 24 hours later... I had to make up my own bottles in that time, so lucky that mum was there.'* Natalie: formula feeding [Quote: pages 228] Note: the author reported the themes 'Differing goals', 'Perceived pressures' and 'Show, inform, suggest but don't advise' which did not report on any relevant data for this review question.

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	No or very minor concerns
Overall risk of bias and relevance	Relevance	Highly relevant

Hufton, 2016

Bibliographic Reference	Hufton, Emily; Raven, Joanna; Exploring the infant feeding practices of immigrant women in the North West of England: a case study of asylum seekers and refugees in Liverpool and Manchester.; Maternal & child nutrition; 2016; vol. 12 (no. 2); 299-313

Study Characteristics

Study type	General qualitative inquiry Focus groups and semi-structured interviews
Country/ies where study was carried out	United Kingdom
Setting	**Setting** A convenient location for the researcher and the participant, usually a private room or discrete area at a support venue (for example, a community centre or church hall. **Aim** To explore an unmet need in understanding the issues surrounding infant feeding practices of refugee mothers.
Data collection and analysis	**Data collection** Semi-structured interviews and focus groups were used to collect data, by one researcher with a nursing background. Focus groups roughly lasted 1 hour and both interviews and focus groups were conducted in English. **Data analysis** Framework analysis was used the analyse the data. The first author read the transcripts, identified emerging themes, developed a coding framework, and found explanations and associations between data to generate themes.

	Note: data were collected for the views of healthcare professionals but not extracted as they are not relevant to this evidence synthesis.
Recruitment strategy	Purposive sampling used to recruit women who were refugees and had a child born in the UK in the last 4 years or were at least 6 months pregnant.
Study dates	Not reported
Sources of funding	Not industry funded
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Sample size	N=30 women (mixed, formula feeding and breastfeeding)
Participant characteristics	Not reported Note: 11 participants in this study were HIV positive. Population included UK-based refugee mothers
Results	Author's themes: 1. Awareness of feeding guidelines for HIV-positive mothers 2. Challenges to following desired infant feeding practice **Awareness of feeding guidelines for HIV-positive mothers** Women who were HIV positive reported that they formula fed their child because of advice given to them by their healthcare professionals, in order to avoid transmission of the virus through their breast milk. *No supporting quote.* **Challenges to following desired infant feeding practice** <u>Isolation and lack of support</u>

	HIV positive participants in this study were single parents and reported the difficulties of raising a child with little or no support network. *'If I had my mother here I think it would have been different.' (R.16)* [Quote: p. 306] <u>Lack of milk</u> Participants who were presumed to be HIV negative and who formula fed reported that they felt their breast milk supply was inadequate and therefore believed their child was still hungry and was not putting on enough weight. Resultantly, they chose to supplement their breastfeeding with formula milk. Some participants, who had previous experiences with breastfeeding considered their supply to be less in the UK than in their home country because of differences in diet and lifestyle, and increased levels of stress. *No supporting quote.* <u>Expense</u> Participants frequently mentioned the cost of formula milk, which made it heard to provide enough formula for their child. Often these participants had no recourse to public funds and needed to buy the formula, bottles, and sterilising equipment themselves, which often meant that in order to provide their child with formula they had to suffer themselves. *'Mother 1: It's not everybody who can afford to buy the milk. I remember with my child you know, they said I should feed him, but I didn't have any money. . . . There was no formula in the house, so it will be better for me to open a can of soup and give to him.'* *'Mother 2: 'Yes, sometimes you just take a cup of tea, in order to keep the money for the formula, that's what we do. . . . sometimes you will starve yourself to feed the baby*.' (FGD. 2) [Quotes: pages 307] Note: the author reported the themes 'Infant feeding trends', 'Views on feeding methods', 'Feeding influences', 'Realities of following desired infant feeding practice', 'Challenges of caring for refugee mothers', and 'Suggestions for improvement' which did not report on any relevant data for this review question. Additionally, the study reports the views of healthcare professionals, which have not been extracted as it is not relevant to the evidence synthesis.

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	Minor concerns *(It is unclear whether the researcher critically examined their own role, potential bias and influence during the study.)*
Overall risk of bias and relevance	Relevance	Highly relevant

Hughes, 1997

Bibliographic Reference	Hughes P; Rees C; Artificial feeding: choosing to bottle feed; British Journal of Midwifery; 1997; (no. 5); 137-142

Study Characteristics

Study type	Phenomenological Interviews
Country/ies where study was carried out	United Kingdom
Setting	**Setting** Postnatal wards of one maternity unit in Wales. **Aim** To identify the factors which influence bottle feeding.
Data collection and analysis	**Data collection**

	Data were collected using a guided conversation and recorded by handwritten notes. Interviews lasted between 45 and 90 minutes. **Data analysis** Content analysis was used to analyse the data. No further details are reported.
Recruitment strategy	Participants were recruited through convenience sampling, where the researcher asked staff on the maternity ward if any primiparous women had chosen to bottle feed and had done so for at least a day. The staff member would see if anyone sit this criteria and then ask for consent to the interview.
Study dates	Not reported
Sources of funding	Not reported
Inclusion criteria	• Primiparous • Bottle fed for at least day after birth
Exclusion criteria	Not reported
Sample size	N=20 women (all formula feeding)
Participant characteristics	**Age (years), n:** <20: 13 >20: 7
Results	The study did not report findings in subheadings representing themes. Participants reported their priority was their employment and their wish to keep their financial security. Formula feeding supported this decision. Participants were asked their experiences of how healthcare professionals responded when told they wished to formula feed their child. This varied by age, where the younger women were met with indifference and the most common response was 'if that is what you want to do'. The interviews revealed that younger women had received no information from healthcare professionals on how to make a bottle of formula during their antenatal care. Participants had been shown how to prepare formula from friends and family members, but desired confirmation that it was correct from a healthcare professional. For women who were >20 years, healthcare professionals response to their desire to formula feed was met

	with 'disapproval and coercion'. In their experience of antenatal care, after the session on breastfeeding they asked when the formula feeding session would be, only to be told that 'midwives did not do that'. Participants reported that more than being exposed to adverts and images of bottle feeding, they were 'bombarded with images of breastfeeding'. Participants noted that their decision to feed was not easily influenced by watching tv shows where women were bottle or breastfeeding.

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	Moderate concerns *(There are issues with the recruitment strategy used to recruit participants. It is unclear whether the researcher critically examined their own role, potential bias and influence during the study.)*
Overall risk of bias and relevance	Relevance	Highly relevant

Lagan, 2014

Bibliographic Reference	Lagan, Briege M; Symon, Andrew; Dalzell, Janet; Whitford, Heather; 'The midwives aren't allowed to tell you': perceived infant feeding policy restrictions in a formula feeding culture - the Feeding Your Baby Study.; Midwifery; 2014; vol. 30 (no. 3); e49-55

Study Characteristics

Study type	General qualitative inquiry Focus groups and interviews

Country/ies where study was carried out	United Kingdom
Setting	**Setting** Interviews either took place in the participant's home or at the university. Focus groups took place at a central location. **Aim** To explore the expectations and experiences of postnatal mothers in relation to infant feeding, and to identify how care could be improved.
Data collection and analysis	**Data collection** Data were collected through interviews and focus groups. All discussions were digitally recorded and transcribed verbatim by a transcriber. **Data analysis** All transcripts were analysed using NVivo software. Data were analysed following the framework approach by 3 independent researchers.
Recruitment strategy	A prior quantitative longitudinal study was conducted and participants were asked at the exit point about taking part in this study. Purposive sampling was used to recruit participants for this study.
Study dates	May to September 2010
Sources of funding	Not industry funded
Inclusion criteria	• Any infant feeding practice
Exclusion criteria	• Baby under the care of social services • Baby still in hospital • Stillbirth or neonatal death.
Sample size	N=78 women (mixed, formula feeding and breastfeeding)

	n=38 took part in focus groups n=40 were interviewed
Participant characteristics	**Age (years), [range], mean:** [19-41], 31 **Parity, n:** 1: 49 >1: 29
Results	Author's themes: 1. Mixed and missing messages 2. Conflicting advice 3. Information gaps 4. Unrealistic preparation and the pressure to breast feed 5. Emotional costs **Mixed and missing messages** Some women reported positive experiences with healthcare professionals but most women reported that the infant feeding support and advice they received was ineffective. This was because of conflicting or confusing advice, inconsistent support, and limited availability of information about formula feeding. *No supporting quote.* **Conflicting advice** Many women reported being given contradictory information by different members or staff, which was confusing and demoralising.

'One of them said I was feeding her too much; the other one said let her have it.' JL Formula Fed (FG) [Quote: p.e51]

There was a need for more consistent advice, improved continuity of staff, and better communication skills. However, some women reported having a good experience with healthcare professionals, who provided consistent approaches to care.

'It's not your fault you get different midwives in every day. I know how that works, but you just felt there wasn't any consistency in support and that's what really frustrated me… I got very blunt conflicting advice rather than support.' NB Breast to Formula Fed (FG) [Quote: page e51]

More practical health and support in the postnatal period was highlighted by many participants.

'… It's the aftercare I think is far more important than what anything they can tell you beforehand… For the support to be there from the professionals, I think is more important than handing you a piece of paper that tells you why you should do this.' FN Breast to Formula Fed (FG) [Quote: page e51]

Information gaps

Those who formula fed experienced a lack of support from healthcare professionals on practical aspects of feeding, such as how to prepare bottles, how much to feed their infant, and how to interpret infant behaviour and respond accordingly.

'...2 weeks after she was born and we were still feeding her 40 mls and she (midwife)'s saying, 'No you should be going up 5 mls every day', and I think, 'Well, nobody told me this'. No wonder she was screaming.' NB Formula Fed (FG) [Quote: page e52]

It was felt that there was more information given about breastfeeding than bottle feeding.

'… there's all the information about breastfeeding, which is great because I feel that if you do choose to breastfeed, you do need all that information. But it was kind of like – 'Well, you know formula feeding is bad? We'll not bother telling you anything about that', and just push that to the side…it was almost like the midwives are not allowed to say anything.' JM Formula Fed (FG)

'I was literally reading the boxes on the steriliser, you know, to know what to do…. there isn't that information available or given to you.' DS Breast to Formula Fed (FG) [Quotes: page e52]

	It seemed that health professionals were reluctant to provide advice about formula feeding, so those that needed this information felt alienated. Participants also felt that this reinforced the message about breast feeding being 'best'. It was suggested that the way information is provided could change to create a more meaningful and realistic understanding of infant feeding, for example, pregnant women sharing information and experiences with each other. *'I think certainly in parent education… if you had a mother who could come in and talk about her experiences of breastfeeding– I know it's very early but if you could have a sort of one-tone sort of face on experiences of someone who successful breastfed, that would be useful too. Someone at 6 weeks who was still breastfeeding who could come in and, you know, answer other women's concerns if they had problems as well, that would be useful.' VG Mixed-Fed (1–1)* [Quote: page e52] **Unrealistic preparation and the pressure to breast feed** Some women felt the realities of formula feeding were not known before birth. *'Straightforward mostly but could have been a more enjoyable experience for the baby and for me if we'd known some of the pitfalls to look for upfront.' GW Formula Fed (FG)* [Quote: page e52] Some women felt pressured to breastfeed by health professionals, which alienated those who had chosen to formula feed, and led to strong feelings of guilt and self-blame. *'Basically it's always drummed into you from, you know, TV and the antenatal classes that, you know, 'breast is best' and all that… I thought, right, I'll have to breastfeed. LS Breastfed for 4 days.' (1–1)* *'The whole 'breast is best' thing is so exclusive and it makes you feel like if you can't do it, then you're not giving the absolute best to your child and you're some sort of – how excluded from this club of people who can do the best thing for their baby.' JL Formula Fed (FG)* [Quotes: pages e52] **Emotional costs** For women who initiated breastfeeding but could not continue, care and support provided by health professionals was considered inadequate, leading to feelings of guilt and shame. This difficult transition from breastfeeding to formula feeding was made worse by the perception that healthcare professionals would judge and be unsupportive.

	'I wanted to give up in the hospital……I couldn't get any sleep, I had a C/Section and my third night there I was like, 'I want to change to bottle', and the midwife told me I wasn't allowed. KA Breast to Formula Fed (1–1) [Quote: page e53]

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	Minor concerns *(It is unclear whether the researcher critically examined their own role, potential bias and influence during the study.)*
Overall risk of bias and relevance	Relevance	Highly relevant

Lakshman, 2012

Bibliographic Reference	Lakshman, R; Landsbaugh, J R; Schiff, A; Cohn, S; Griffin, S; Ong, K K; Developing a programme for healthy growth and nutrition during infancy: understanding user perspectives.; Child: care, health and development; 2012; vol. 38 (no. 5); 675-82

Study Characteristics

Study type	General qualitative inquiry Focus groups
Country/ies where study was carried out	United Kingdom
Setting	**Setting** Focus groups were held at the MRC Epidemiology Unit in Cambridge.

	Aim To understand users' perspectives about the programme for healthy growth and nutrition in formula milk-fed babies. Note: healthcare professionals were interviewed for their views, however this information was not extracted.
Data collection and analysis	**Data collection** Interviews were recorded on a digital voice recorder and transcribed verbatim by an independent transcriber. Focus groups lasted approximately 2 hours. **Data analysis** The framework approach was used to analyse data by two researchers, who red the transcripts and developed themes using a thematic framework.
Recruitment strategy	Participants were recruited by invitation letters, which were sent by hospital to women who had given birth in the last 6 months.
Study dates	Not reported
Sources of funding	Not industry funded
Inclusion criteria	• Women who had given birth to a full-term, healthy, singleton baby • Women who were formula-feeding their baby on discharge from hospital
Exclusion criteria	Not reported
Sample size	N=11 women (all formula feeding)
Participant characteristics	**Age (years), n:** 25-≤30: 2 31-≤35: 4 36-≤40: 3

	41-≤45: 2 **Ethnicity (white), n:** 11 **Parity, n:** 1: 3 2: 3 3: 4 (data for 1 woman not reported)
Results	Author's themes: 1. It is too early to worry about obesity 2. Blowing things up 3. Conflicting messages 4. Formula milk quantities 5. Types of formula milk, bottles, and teats 6. Recruitment to the trial 7. Intervention delivery **It is too early to worry about obesity** Women reported that it was not possible to overfeed their baby and for them to gain too much weight when they were still an infant. *'I think it's a bit too early to worry about obesity at this stage . . . I do worry about people worrying that they're making their child fat, it's a baby.'* (Mum07) [Quote: page 4]

	Blowing things up Many women felt that outside of this study, information about bottle feeding was exaggerated. They reported that they had to support their decision to bottle-feed with anecdotal evidence. Often, they felt worried at the thought of discussing bottle-feeding with healthcare professionals but happily welcomed support from other formula feeding mothers. *'You're made to feel as if it's like smoking around a child . . . A lot of feeding (goes) underground.'* (Mum11) [Quote: page 4] **Conflicting messages** Women reported receiving conflicting information on feeding from healthcare professionals, magazines, and other sources. They reported the need for consistent messages and to consider differences that may exist among babies and family situations. For example, some women were instructed not to give their baby water, and there were inconsistencies on when and how to introduce solid food. *'It's weird how people get so much different advice.'* (Mum04) [Quote: page 5] **Formula milk quantities** Women reported that there was insufficient information for them to know how much formula to feed their babies. They followed instructions printed on formula milk tins but also decided based on their child's appetite and other cues from their child. Women reported that there should be a general guideline on the number and quantity of feeds per day, whilst acknowledging that all babies were different (in that some may want small, more frequent feeds and others may want larger, less frequent feeds). Other women reported that the instructions on formula tins were misleading, especially if their baby was consuming less than what was recommended on the tin, which lead to some anxiety, or taking more than recommended by 6 months. *'I had no advice on bottle feeding and he was crying so much that I was feeding him every 10 minutes.'* (Mum04) [Quote: page 5] **Types of formula milk, bottles and teats** Some participants said they would like more information on different types of formula milk, bottles and teats.

	'Something definitely just to explain a bit about the different milks that are available, if there is a difference between them.' (Mum04) [Quote: page 5] **Recruitment to the trial** Participants reported that there was insufficient information given about formula feeding when compared to breastfeeding, and wanted this information to be given in the antenatal period. *No supporting quote.* **Intervention delivery** Participants thought having a helpline number to call in case of any issues would be very helpful and suggested monthly contacts would be beneficial, if they were delivered in a non-judgmental manner. *No supporting quote.* Note: the authors reported the themes 'Growth charts' and 'Perceived main messages' which did not report on any relevant data for this review question.

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	Minor concerns *(It is unclear whether the researcher critically examined their own role, potential bias and influence during the study.)*
Overall risk of bias and relevance	Relevance	Highly relevant

Martyn, 1997

Bibliographic Reference Martyn T; How mothers choose babymilk brands; Modern midwife; 1997; (no. 7); 10-14

Study Characteristics

Study type	General qualitative inquiry Semi-structured interviews
Country/ies where study was carried out	United Kingdom
Setting	**Setting** Not reported **Aim** To explore the influences determining how and why mothers choose one brand of baby milk rather than another.
Data collection and analysis	**Data collection** Semi-structured interviews were conducted, consisting of predominantly open-ended questions. Interviews were conducted in the woman's own home. Interviews were tape recorded and transcribed after the interview. **Data analysis** Data were analysed using a 'sorting and coding' system, which enabled the researcher to categorise responses and classify them under various headings and subheadings. Some of the categories were established prior to analysis, since they were based on components of the Health Action Model, whereas others arose as a result of the open-ended exploratory nature of the questionnaire.
Recruitment strategy	Health visitors from five health centres within the same health authority were contacted and asked to participate in the study. They were considered to be in an ideal position to select and contact appropriate women. They would also allay any fears of 'bogus health workers', that might occur if the researcher contacted the women directly..
Study dates	Not reported

Sources of funding	Not reported, however the author worked for Baby Milk Action.
Inclusion criteria	• Healthy infant aged ≤10 weeks • Infant birth at >37 gestational weeks and <43 gestational weeks • Fully formula fed from at least 3 weeks of age
Exclusion criteria	Not reported
Sample size	N=20 women (all formula feeding)
Participant characteristics	Not reported
Results	Author's themes: 1. Nutrition seen as important 2. Friends and family before health professionals 3. Brand placement in wards **Nutrition seen as important** There was widespread confusion and little knowledge regarding the nutritional content, or differences, between baby milks. Information concerning the nutritional content of baby milks was either non-existent or difficult to understand, and therefore not very useful. Many of the women commented that they would have liked more information regarding the nutritional content and in a more user friendly format. *No supporting quotes.* **Friends and family before health professionals** Friends tended to have a considerable influence on women who had little support or advice from their families; they were especially valuable to primiparous women who had no prior experience of infant feeding. It was often the case that friends or family were consulted for advice about which baby milk to use and sometimes even in place of a health professional. However, women preferred this information to come primarily from the health professionals. *No supporting quotes.*

	Brand placement in wards Experiences on the postnatal ward influenced women's intention towards choosing the brand of formula they would use for feeding, for example formula used by other women and advertising in the ward. One woman recalled a midwife using a tourniquet that had the name of a well-known baby milk manufacturer. *No supporting quotes.* The author's theme 'Multiple personal influences' did not report any relevant findings for this review question.

Critical appraisal - Qualitative Critical Appraisal Skills Programme (CASP) checklist

Section	Question	Answer
Overall risk of bias and relevance	Overall risk of bias	Moderate concerns *(Authors do not present results clearly and provided limited quotes. The credibility of the findings was not discussed.)*
Overall risk of bias and relevance	Relevance	Highly relevant

Appendix E Forest plots

Forest plots for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

No meta-analysis was conducted for this review question and so there are no forest plots.

Appendix F GRADE-CERQual tables

GRADE-CERQual tables for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

Table 6: Evidence profile for facilitators for following existing government advice on safe and appropriate formula feeding

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
Theme A1. Accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained						
3 studies Guell 2018 General qualitative inquiry with semi-structured interviews. N=19 women. Hufton 2016 General qualitative inquiry with focus groups and semi-structured interviews. N=30 women. Lakshman 2012 General qualitative inquiry with focus groups. N=11 women.	3 studies reported participants preferred formula feeding guidance from bodies such as the World Health Organisation, health professionals, or a helpline. This included information on issues such as formula milk amounts, recognising infant's satiety cues, and understanding that an infant was not always crying due to hunger. For example, women who were HIV positive formula fed their child to avoid transmission of the virus through their breast milk, as advised by health professionals. Women reported that information delivered in a non-judgemental manner was very helpful. Additionally, women described how they had used their own experience with previous children, that of family and friends, or information from the internet to supplement their knowledge on feeding. *No supporting quote.*	Minor concerns[1]	No or very minor concerns	Minor concerns[2]	No or very minor concerns	HIGH

1 Minor concerns about methodological limitations as per CASP qualitative checklist
2 Studies contributing to the theme offer moderately rich data

Table 7: Evidence profile for barriers to following existing government advice on safe and appropriate formula feeding

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
Theme B1. Accessibility, completeness and relevance of guidance in places where formula feeding guidance is obtained						
Subtheme B1.1 Limited formal support						
3 studies Conway 2023 General qualitative inquiry with semi-structured interviews. N=25 women. Lagan 2014 General qualitative inquiry with focus groups and interviews. N=78 women. Lakshman 2012 General qualitative inquiry with focus groups. N=11 women.	3 studies reported that women wanted more practical health and support in the postnatal period for formula feeding. Women reported that support ended abruptly when they were seen as 'not breastfeeding'. Those who formula fed experienced a lack of support from healthcare professionals on practical aspects of feeding, such as how to prepare bottles, how much to feed their infant, and how to interpret infant behaviour and respond accordingly. In one study, when participants asked a midwife or health visitor to recommend a formula milk brand, they were told 'it was not allowed', so participants turned to other sources for information (for example, friends, brand websites). Many women felt that outside of this study, information about bottle feeding was exaggerated. They reported that they had to support their decision to bottle-feed with anecdotal evidence. Often, they felt worried at the thought of discussing bottle-feeding with healthcare professionals but happily welcomed support from other formula feeding mothers. 1 study reported women received conflicting information on feeding from healthcare professionals, magazines, and other sources. They reported the need for consistent messages and to consider differences that may exist among babies and family situations. For example, some women were instructed not to give their baby water, and there were inconsistencies on when and how to introduce solid food. *'...2 weeks after she was born and we were still feeding her 40 mls and she (midwife)'s saying, 'No you should be going up 5 mls every day', and*	Minor concerns[1]	No or very minor concerns	Minor concerns[3]	No or very minor concerns	HIGH

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
	I think, 'Well, nobody told me this'. No wonder she was screaming.' NB Formula Fed (FG) [Quote: Lagan 2014, p.e52]					
Subtheme B1.2 Limited informal support						
3 studies Guell 2018 General qualitative inquiry with semi-structured interviews. N=19 women. Lakshman 2012 General qualitative inquiry with focus groups. N=11 women. Martyn 1997 General qualitative inquiry with semi-structured interviews. N=20 women.	3 studies reported that there was a lack of advice on formula-feeding and that participants had to rely on sparse information provided on leaflets or formula milk tins. If they received advice from healthcare professionals, it was perceived to come reluctantly. All participants felt that healthcare professionals were too busy to give information about formula feeding or reluctant because they wanted to promote breastfeeding. Women reported that there was insufficient information for them to know how much formula to feed their babies. They followed instructions printed on formula milk tins but also decided based on their child's appetite and other cues from their child. Women reported that there should be a general guideline on the number and quantity of feeds per day, whilst acknowledging that all babies were different (in that some may want small, more frequent feeds and others may want larger, less frequent feeds). Other women reported that the instructions on formula tins were misleading, especially if their baby was consuming less than what was recommended on the tin, which lead to some anxiety, or taking more than recommended by 6 months. Friends tended to have a considerable influence on those women who had little support or advice from their families; they were especially valuable to primiparous women who had no prior experience of infant feeding. It was often the case that friends or family were consulted before	Moderate concerns[4]	No or very minor concerns	Minor concerns[3]	No or very minor concerns	MODERATE

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
	approaching health professionals for advice about which baby milk to use and some-times even in lieu of a health professional. It should be noted that, despite this, several women commented that they would have preferred this information to come primarily from the health professionals. *'I had no advice on bottle feeding and he was crying so much that I was feeding him every 10 minutes.'* (Mum04) [Quote: Lakshman 2012, p.5]					
Theme B2. Age of the mother/carer of the baby						
1 study Hughes 1997 Phenomenological study with interviews. N=20 women.	Participants in 1 study reported their experiences of how healthcare professionals responded when told they wished to formula feed their child. This varied by age, where the younger women were met with indifference and the most common response was 'if that is what you want to do'. Younger women received no information from healthcare professionals on how to make a bottle of formula during their antenatal care. Participants had been shown how to prepare formula from friends and family members, but desired confirmation that it was correct from a healthcare professional. For women who were >20 years, healthcare professionals' response to their desire to formula feed was met with 'disapproval and coercion'. In their experience of antenatal care, after the session on breastfeeding they asked when the formula feeding session would be, only to be told that 'midwives did not do that'. *No supporting quote.*	Moderate concerns[4]	No or very minor concerns	Moderate concerns[2]	No or very minor concerns	LOW
Theme B3. Attitudes to breastfeeding and formula feeding						

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
1 study Hoddinott 2000 Grounded theory study with semi-structured interviews. N=19 women.	1 study reported that participants could distinguish health professionals who seemed to really care and those who appeared more impersonal. The majority of women waited for health professionals to be proactive and offer support with both breast and bottle feeding. *'The midwife in the Hospital ... I think she had a bit of a hump about breastfeeding. She asked me if I was going to do breastfeeding, I said "no, I'd rather bottle feed" and she just bunged the bottles on to me and walked off... I think they do prefer you breastfeeding because the lady in front of me, she was breastfeeding and she got visited about three times in the morning and no-one ever come to me. The midwife came up to show me ... about 24 hours later... I had to make up my own bottles in that time, so lucky that mum was there.'* Natalie: formula feeding. [Quote: Hoddinott 2000, p.228]	No or very minor concerns	No or very minor concerns	Moderate concerns[2]	No or very minor concerns	MODERATE
Theme B4. Cost of formula feeding						
1 study Hufton 2016 General qualitative inquiry with focus groups and semi-structured interviews. N=30 women.	1 study reported that participants frequently mentioned the cost of formula milk, which made it hard to provide enough formula for their child. Often these participants had no recourse to public funds and needed to buy the formula, bottles, and sterilising equipment themselves, which often meant that in order to provide their child with formula they had to suffer themselves. *'Mother 1: It's not everybody who can afford to buy the milk. I remember with my child you know; they said I should feed him, but I didn't have any money. . .. There was no formula in the house, so it will be better for me to open a can of soup and give to him'.* [Quote: Hufton 2016, p.307]	Minor concerns[1]	No or very minor concerns	Moderate concerns[2]	No or very minor concerns	MODERATE
Theme B5. Information gaps						
5 studies Guell 2018	5 studies reported that women considered information and support for formula feeding to be ineffective. This was because of conflicting or confusing advice, inconsistent support, and	Moderate concerns[4]	No or very minor concerns	No or very minor concerns	No or very minor concerns	MODERATE

Study information	**Description of review finding**	**CERQual Quality Assessment**				
		Methodological limitations	**Coherence of finding**	**Adequacy**	**Relevance of evidence**	**Overall confidence**
General qualitative inquiry with semi-structured interviews. N=19 women. Hoddinott 2000 Grounded theory study with semi-structured interviews. N=19 women. Lagan 2014 General qualitative inquiry with focus groups and interviews. N=78 women. Lakshman 2012 General qualitative inquiry with focus groups. N=11 women. Martyn 1997 General qualitative inquiry with semi-structured interviews. N=20 women.	limited availability of information. Women reported that they generally received more information about breastfeeding than formula feeding, and therefore didn't know what to expect or how to initiate formula feeding. Women wanted more information on different types of formula milk, bottles, and teats, especially in the antenatal period. They received inconsistent information from healthcare professionals and external sources of information tended to conflict advice given by healthcare professionals, and therefore women did not know which sources were reliable and whom to trust. For example, 1 study reported that women felt that a baby's behaviour was most often attributed to feeding, rather than other factors, and was an important motivator for changing behaviour. One woman who formula fed her baby reported repeatedly changing the brand of formula she used because she received little guidance. There was widespread confusion and little knowledge regarding the nutritional content, or differences, between baby milks. Information concerning the nutritional content of baby milks was either non-existent or difficult to understand, and therefore not very useful. In 1 study, women appreciated personalised support that they received from this study. After being given information about recommended feeding amounts, women in this study realised that they were already exceeding the guidance. Rather than decreasing the amount they fed their infant, women stuck to the feeding amount until their infant had caught up with the trial recommendations. Some women, from another study, reported that they felt it was not possible to overfeed their baby and for them to gain too much weight when they were still an infant. Overall, there was a need for more consistent advice, improved continuity of staff, and better communication skills. *'Well I got recommended SMA because that's what the hospital used for the babies. I tried that*					

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
	— SMA Gold — and he's bringing the whole bottle up, like a fountain, and in the end the midwife said it's probably too rich for him, change his milk. So I changed it to Cow and Gate Premium and he's having a bottle every hour, every two hours and it wasn't filling him up. So I changed it again'. Natasha (formula feeding) [Quote: Hoddinott 1999, p. 562 & 563] *'It's not your fault you get different midwives in every day. I know how that works, but you just felt there wasn't any consistency in support and that's what really frustrated me… I got very blunt conflicting advice rather than support*.' NB Breast to Formula Fed (FG) [Quote: Lagan 2014, p. e51] *'I was literally reading the boxes on the steriliser, you know, to know what to do…. there isn't that information available or given to you.'* DS Breast to Formula Fed (FG) [Quote: Lagan 2014, p. e52]					
Theme B6. Stigmatisation of feeding method						
2 studies Guell 2018 General qualitative inquiry with semi-structured interviews. N=19 women. Lagan 2014 General qualitative inquiry with focus groups and interviews. N=78 women.	2 studies reported negative reactions from participant's friends and the public when expressing their desire to formula-feed, which made them feel the need to constantly justify why they were formula feeding. It seemed that health professionals were reluctant to provide advice about formula feeding, so those that needed this information felt alienated. It was suggested that the way information is provided could change to create a more meaningful and realistic understanding of infant feeding, for example, pregnant women sharing information and experiences with each other. Some women felt pressured to breastfeed by health professionals, which alienated those who had chosen to formula feed, and led to strong feelings of guilt and self-blame. For women who initiated breastfeeding but could not continue, care and support provided by health	Minor concerns[1]	No or very minor concerns	Minor concerns[3]	No or very minor concerns	HIGH

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
	professionals was considered inadequate, leading to feelings of guilt and shame. This difficult transition from breastfeeding to formula feeding was made worse by the perception that healthcare professionals would judge and be unsupportive. '*...it's like other parents looking down on you, that are breastfeeding, I found that that was a major thing. If I went to any baby groups, I'd try and make sure that she'd already had a bottle.*' (I) [Quote: Guell 2018, p.1323] *'I wanted to give up in the hospital……I couldn't get any sleep, I had a C/Section and my third night there I was like, 'I want to change to bottle', and the midwife told me I wasn't allowed.'* KA Breast to Formula Fed (1–1) [Quote: Lagan 2014, p.e53]					
Theme B7. Unregulated marketing of breastmilk substitutes						
2 studies Conway 2023 General qualitative inquiry with semi-structured interviews. N=25 women. Martyn 1997 General qualitative inquiry with semi-structured interviews. N=20 women.	1 study reported that experiences on the postnatal ward influenced women's intentions towards choosing the brand of formula they would use for feeding, for example formula used by other women and advertising in the ward. One woman recalled a midwife using a tourniquet that had the name of a well-known baby milk manufacturer. Generally, participants felt there were too many formula milk brands, and the choice was overwhelming, especially when deciding which was 'the best one'. The appearance of packs, including colours and images, was fundamental to mothers' understanding of the differences between products. Products which had baby friendly images (for example, teddy bears, pictures of animals) were perceived to be warm and friendly by some, and cheap by others. Some participants wanted packaging that was more formal and scientific and knew that these products were more expensive.	Minor concerns[1]	No or very minor concerns	Minor concerns[3]	No or very minor concerns	HIGH

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
	Participants considered these products to be superior but were unsure why or how. Mothers described different messaging features being particularly important, for example those labelled as organic with pictures of the countryside were described as more natural, more nutrient rich, healthier, having 'more properties' or 'just better'. Overall, participants felt the most expensive brands were the best quality and were hesitant to purchase cheaper brands. When asked by study authors to reflect on why this was the case, participants considered that the only difference between products were the way they were marketed. On the whole, participants reported trusting leading brands of formula milk and perceived them to be a 'safe choice' because they believed that the companies had 'done their research'. Participants described how often they saw adverts for formula milk and the proactive information they received from formula milk brands (e.g., through social media). Participants reported that they seldom changed formula brands, unless they experienced an issue when they viewed changing formula milk brands as the solution. Views about stages of formula milk varied, where some considered it to be 'just marketing fluff' and others thought that if these different products weren't required, they wouldn't be manufactured. However, those participants who were convinced that the formula milk stages were different struggled to articulate how, despite having looked at the ingredient or nutrient panels. Furthermore, there was confusion about when specialist formula milk was required. Overall, participants thought that formula tins should have clearer instructions on the tin. *"To be honest, I think most of it just came up from actually what I'd seen over just my lifetime of adverts actually and TV things, and what became*					

Study information	Description of review finding	CERQual Quality Assessment				
		Methodological limitations	Coherence of finding	Adequacy	Relevance of evidence	Overall confidence
	like a familiar sort of brand that you'd heard of. So, I'd seen a lot of [brand X] adverts, I'd seen a lot of I think it's the [Brand Y] one as well, I've seen quite a few adverts…It's actually literally just been from advertising, sort of, I guess a trusted brand name that you've kind of heard, especially being a new mum, you want something you know." (P14, 2 months) [Quote: Conway 2023, p.1011]					

1 Minor concerns about methodological limitations as per CASP qualitative checklist
2 Studies contributing to the theme offer some rich data
3 Studies contributing to the theme offer moderately rich data
4 Moderate concerns about methodological limitations as per CASP qualitative checklist

Appendix G Economic evidence study selection

Study selection for: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

This was a qualitative review question, therefore economic evidence was not relevant and thus no economic evidence searches were conducted.

Appendix H Economic evidence tables

Economic evidence tables for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

This was a qualitative review question, therefore economic evidence was not relevant.

Appendix I Economic model

Economic model for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

No economic analysis was conducted for this review question.

Appendix J Excluded studies

Excluded studies for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

Excluded qualitative studies

Table 8: Excluded studies and reasons for their exclusion

Study	Code
Brown, Amy; Raynor, Peter; Lee, Michelle (2011) Healthcare professionals' and mothers' perceptions of factors that influence decisions to breastfeed or formula feed infants: a comparative study. Journal of advanced nursing 67(9): 1993-2003	- Theme not relevant to the review question *Study focuses on factors that influence the decision to breastfeed or formula feed an infant.*
Cescutti-Butler, Luisa; Hemingway, Ann; Hewitt-Taylor, Jaqui (2019) "His tummy's only tiny" - Scientific feeding advice versus women's knowledge. Women's experiences of feeding their late preterm babies. Midwifery 69: 102-109	- Population not relevant to this review protocol *Included population: women who are caring for late preterm baby/babies.*
Clifton, Emma A D, Ahern, Amy L, Day, Felix R et al. (2021) Positive maternal attitudes to following healthy infant feeding guidelines attenuate the associations between infant appetitive traits and both infant milk intake and weight. Appetite 161: 105124	- Study design not relevant to this review protocol *Cross-sectional: questionnaire.*
Cloherty, Michele; Alexander, Jo; Holloway, Immy (2004) Supplementing breast-fed babies in the UK to protect their mothers from tiredness or distress. Midwifery 20(2): 194-204	- Theme not relevant to the review question *Study aimed to explore mothers and healthcare professionals beliefs, expectations and experiences in relation to supplementation of breast fed babies.*
Cloherty, Michele, Alexander, Jo, Holloway, Immy et al. (2005) The cup-versus-bottle debate: a theme from an ethnographic study of the supplementation of breastfed infants in hospital in the United kingdom. Journal of human lactation : official journal of International Lactation Consultant Association 21(2): 151-6	- Theme not relevant to the review question *Study describes the experiences, expectations, and beliefs of mothers and health care professionals concerning supplementation of breastfed infants.*
Daly, A.; MacDonald, A.; Booth, I.W. (1998) Diet and disadvantage: Observations on infant feeding from an inner city. Journal of Human Nutrition and Dietetics 11(5): 381-389	- Study design not relevant to this review protocol *Cohort study: questionnaire.*

Study	Code
Davie, P.; Bick, D.; Chilcot, J. (2019) To what extent does maternal body mass index predict intentions, attitudes, or practices of early infant feeding?. Maternal and Child Nutrition 15(4): e12837	- Study design not relevant to this review protocol *Data was collected via validated questionnaire.*
Dykes, Fiona, Richardson-Foster, Helen, Crossland, Nicola et al. (2012) 'Dancing on a thin line': Evaluation of an infant feeding information team to implement the WHO code of marketing of breast-milk substitutes. Midwifery 28(6): 765-771	- Population not relevant to this review protocol *Population of the study was health-care staff.*
Fahlquist, Jessica Nihlén (2016) Experience of non-breastfeeding mothers. Nursing Ethics 23(2): 231-241	- Study design not relevant to this review protocol *Survey.*
Fallon, Victoria, Komninou, Sophia, Bennett, Kate M et al. (2017) The emotional and practical experiences of formula-feeding mothers. Maternal & child nutrition 13(4)	- Study design not relevant to this review protocol *Cohort study: survey.*
Gallagher, Justine (2023) A biographical narrative exploration of infant feeding in an area with low breastfeeding rates. Dissertation Abstracts International: Section B: The Sciences and Engineering 84(12b): no-specified	- Not a peer-reviewed publication *Doctoral thesis.*
Graffy J and Taylor J (2005) What information, advice, and support do women want with breastfeeding?. Birth: 179-186	- Study design not relevant to this review protocol *Study design is a survey or questionnaire*
Grant, Aimee, Jones, Sara, Sibson, Vicky et al. (2023) The safety of at home powdered infant formula preparation: A community science project. Maternal & child nutrition: e13567	- Study design not relevant to this review protocol *Questionnaire.*
Hoddinott, P., Craig, L.C.A., Britten, J. et al. (2012) A serial qualitative interview study of infant feeding experiences: Idealism meets realism. BMJ Open 2(2): e000504	- Theme not relevant to the review question *Study reports themes on barriers to breastfeeding*
Jones, Shirley R and Stoppard, Miriam (2011) Baby friendly hospitals: are we failing mothers who formula feed their babies?. The journal of family health care 21(1): 12-4	- Study design not relevant to this review protocol *Narrative essay.*

Study	Code
Keely A, Lawton J, Swanson V et al. (2015) Barriers to breast-feeding in obese women: A qualitative exploration. Midwifery: 532-539	- Theme not relevant to the review question *Study reports themes on barriers to successful breastfeeding*
Lakhanpaul, Monica, Benton, Lorna, Lloyd-Houldey, Oliver et al. (2020) Nurture Early for Optimal Nutrition (NEON) programme: qualitative study of drivers of infant feeding and care practices in a British-Bangladeshi population. BMJ open 10(6): e035347	- Data not reported in an extractable format or a format that can be analysed *Study does not focus on formula feeding.*
Leung, Georgine (2017) Cultural considerations in postnatal dietary and infant feeding practices among Chinese mothers in London. British Journal of Midwifery 25(1): 18-24	- Data not reported in an extractable format or a format that can be analysed *Study does not focus on formula feeding.*
Levy, BT, Bergus, GR, Levy, SM et al. (1996) Longitudinal feeding patterns of infants...including commentary by Elliman D. Ambulatory Child Health 2(1): 25-34	- Study design not relevant to this review protocol *Cohort study: questionnaire.*
McInnes, Rhona J, Hoddinott, Pat, Britten, Jane et al. (2013) Significant others, situations and infant feeding behaviour change processes: a serial qualitative interview study. BMC pregnancy and childbirth 13: 114	- Theme not relevant to the review question *Study explored how parents and their significant others influence feeding behaviour change.*
Murphy E (2000) Risk, responsibility, and rhetoric in infant feeding. Journal of Contemporary Ethnography: 291-325	- Theme not relevant to the review question *The study reports themes for why women chose not to breastfeed.*
North, K.; Emmett, P.; Noble, S. (2000) Types of drinks consumed by infants at 4 and 8 months of age: Sociodemographic variations. Journal of Human Nutrition and Dietetics 13(2): 71-82	- Study design not relevant to this review protocol *Cohort study: survey.*
O'Key, Victoria and Hugh-Jones, Siobhan (2010) I don't need anybody to tell me what I should be doing'. A discursive analysis of maternal accounts of (mis)trust of healthy eating information. Appetite 54(3): 524-32	- Population not relevant to this review protocol *Children of recruited parents were not formula fed.*
Redsell, Sarah A, Slater, Vicki, Rose, Jennie et al. (2021) Barriers and enablers to caregivers' responsive feeding behaviour: A systematic review to inform childhood obesity prevention. Obesity reviews : an official journal of the	- Systematic review used as source of primary studies *All qualitative papers identified in this systematic review were assessed individually. Relevant Guell 2018 paper included via primary sift.*

Study	Code
International Association for the Study of Obesity 22(7): e13228	
Redshaw M and Henderson J (2012) Learning the Hard Way: Expectations and Experiences of Infant Feeding Support. Birth-Issues in Perinatal Care: 21-29	- Study design not relevant to this review protocol *Study design is a survey or questionnaire*
Roberts A, Hoddinott P, Heaney D et al. (2009) The use of video support for infant feeding after hospital discharge: A study in remote and rural Scotland. Maternal and Child Nutrition: 347-357	- Theme not relevant to the review question *Explores the feasibility of an infant feeding intervention*
Roberts, Dean, Jackson, Leanne, Davie, Philippa et al. (2023) Exploring the reasons why mothers do not breastfeed, to inform and enable better support. Frontiers in global women's health 4: 1148719	- Theme not relevant to the review question *Study explored infant feeding experiences and difficulties of women in their first six months postpartum.*
Roll, Coralie L and Cheater, Francine (2016) Expectant parents' views of factors influencing infant feeding decisions in the antenatal period: A systematic review. International journal of nursing studies 60: 145-55	- Systematic review used as source of primary studies *Screened for relevant references. None of the studies in the review met our review protocol criteria.*
Schmid, Martina A, von Rosen-von Hoewel, Julia, Martin-Bautista, Elena et al. (2009) Infant feeding and the concept of early nutrition programming: a comparison of qualitative data from four European countries. Advances in experimental medicine and biology 646: 183-7	- Population not relevant to this review protocol *Government organizations and agencies were interviewed and study does not focus on formula feeding.*
Shaw, RL; Wallace, LM; Bansal, M (2003) Is breast best? Perceptions of infant feeding. Community Practitioner 76(8): 299-303	- Theme not relevant to the review question *Not relevant to safe practices related to formula feeding. This study explored the reasons why young women from low-income areas are amongst those least likely to breastfeed.*
Sherriff N; Hall V; Pickin M (2009) Fathers' perspectives on breastfeeding: ideas for intervention. British Journal of Midwifery: 223-227	- Theme not relevant to the review question *Study reports themes on barriers to successful breastfeeding*
Stewart-Knox B; Gardiner K; Wright M (2003) What is the problem with breast-feeding? A qualitative analysis of infant feeding perceptions. Journal of Human Nutrition and Dietetics: 265-273	- Theme not relevant to the review question *Study reports themes on barriers to successful breastfeeding*

Study	Code
Synnott, K, Bogue, J, Edwards, C A et al. (2007) Parental perceptions of feeding practices in five European countries: an exploratory study. European journal of clinical nutrition 61(8): 946-56	- Data not reported in an extractable format or a format that can be analysed *Study was conducted in 5 European countries. Not enough information on responses from UK (Schotland) parents.*
van Zyl, Z, Maslin, K, Dean, T et al. (2016) The accuracy of dietary recall of infant feeding and food allergen data. Journal of human nutrition and dietetics : the official journal of the British Dietetic Association 29(6): 777-785	- Study design not relevant to this review protocol *Cohort study: questionnaire.*
Weber, Mary Beth, Palmer, Wendy, Griffin, Monica et al. (2023) Infant and young child feeding practices and the factors that influence them: a qualitative study. Journal of health, population, and nutrition 42(1): 32	- Setting not relevant to this review protocol *Study was conducted in US.*
Williamson I, Leeming D, Lyttle S et al. (2012) 'It should be the most natural thing in the world': Exploring first-time mothers' breastfeeding difficulties in the UK using audio-diaries and interviews. Maternal and Child Nutrition: 434-447	- Theme not relevant to the review question *Study reports themes on barriers to successful breastfeeding*

Excluded economic studies

This was a qualitative review question, therefore economic evidence was not relevant.

Appendix K Research recommendations – full details

Research recommendations for review question: What are the facilitators and barriers for parents to follow existing government advice on safe and appropriate formula feeding?

Research recommendation

What are the facilitators and barriers for safe and appropriate formula feeding in the context of poverty and food insecurity?

Why this is important

Most parents/carers formula feed their infants and without understanding the factors influencing formula feeding within the context of poverty and food insecurity it is difficult to support parents/carers to do this safely and appropriately.

Rationale for research recommendation

Table 9: Research recommendation rationale

Importance to 'patients' or the population	To tailor support for safe and appropriate formula feeding, we must first understand the barriers and facilitators impacting on this behaviour.
Relevance to NICE guidance	There were very little UK data available on the factors influencing safe and appropriate formula feeding in the context of poverty and food insecurity to assist the committee when making their recommendations.
Relevance to the NHS	Healthcare professionals are tasked with supporting safe and appropriate formula feeding, to do this effectively we must first understand the behaviour.
National priorities	High- safe and appropriate formula feeding is a national priority.
Current evidence base	Very little UK qualitative evidence was found regarding formula feeding, and none that examined safe and appropriate formula feeding in the context of poverty and food insecurity.
Equality considerations	Ethnicity and socio-economic factors

Modified PICO table

Table 10: Research recommendation modified PICO table

Population	Inclusion: Parents and carers with formula feeding responsibilities of babies from birth to 1 year of age. This will include the following population groups: • Parents and carers from deprived socio-economic groups. • Parents and carers having difficulty in accessing and/or affording infant formula. • Parents and carers from minority ethnic groups • Parents and carers with disabilities and other physical and mental health conditions • Parents and carers with neuro divergence
Phenomenon of Interest	Factors that facilitate or impede safe and appropriate formula feeding in the context of poverty and food insecurity.

Context	Research conducted in the UK
Study design	• Studies using qualitative methods: focus groups, semi-structured and structured interviews, observations. • Surveys conducted using open ended questions and a qualitative analysis of responses.
Timeframe	Short term and medium term
Additional information	Sub-group analysis: none identified