

Significant others, situations and their influences on infant feeding.

Secondary analysis of data from:

A prospective study exploring the early infant feeding experiences of parents and their significant others during the first 6 months of life: what would make a difference?

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Summary

Introduction

This report describes the secondary analysis of qualitative interview data collected from 36 families to investigate perspectives on what would make a difference to the experience of infant feeding, from late pregnancy until six months after birth.

Aims and objectives

1. To understand the different patterns of significant other support for infant feeding from pregnancy to six months after birth and how they change over time.
2. To explore patterns between significant other support and decisions about breastfeeding, the introduction of other liquids and solids.
3. To understand the experiences of support provided by significant others and what families perceive would make a difference to this support.

Background literature

The literature reporting how significant others and social networks are involved with infant feeding focuses primarily on antenatal education and its impact on breastfeeding intention, and support for maintaining breastfeeding. Studies show that social norms and the feeding experiences of family and friends are important influences on a woman's feeding decisions. Far less attention has been given to influences on the introduction of solids in resource rich countries. Those studies which exist show the behaviour of the baby to be an important influence on the decision to introduce solids, together with female social norms and networks. Government policies are increasingly recognising the importance of involving the family in infant nutrition interventions. However, the current emphasis is in pregnancy rather than after birth.

Participants and methods

Thirty six pregnant women, 19 primigravida and 17 multigravida, took part in the study in 2009/10 in two areas of Scotland. All women intended to breastfeed except one who had breastfed previously. A total of 220 face to face or telephone semi-structured interviews took place. Two researchers interviewed each woman between two and eight times from the last trimester of pregnancy until six months after birth. Two families withdrew after the first postnatal interview. Twenty six partners, eight mothers, one sister and two health professionals named as significant people influencing feeding decisions also participated in interviews. At the end of each interview structured information was collected on feeding behaviour and significant others influencing feeding decisions. The Framework approach and software was used to analyse the qualitative interview data.

Findings

Women named four main categories of significant other who influenced feeding decisions: partners, themselves and their babies; female networks (relatives and friends) and health professionals. Situations were also a key influence on feeding

behaviour, often precipitating a change in feeding in order for the family to regain control. Situations were a) tangible (observable by others) for example, being in hospital, illness, routines, return to work; b) perceptual (not observable by others) for example, tiredness, pain, anxiety; c) a combination for example, baby weight, breastfeeding in public. Past experience of the woman and her social network were also important influences on behaviour. The process of influence is crucially dependent on the confidence, commitment, values and meanings associated with infant feeding. A complex and dynamic combination of these influences led either to the maintenance of optimal feeding, defined as exclusive breastfeeding for six months, or to change at three 'pivotal points' when formula milk or solids were introduced, or breastfeeding stopped.

For parents adjusting to life with a new baby, the overriding aim is to maximise emotional and physical wellbeing, with feeding being one of the few things that can be changed in an effort to control unpleasant situations (Hoddinott et al., 2012). Whereas unsupportive people and negative situations, such as anxiety about the baby's feeding and parental exhaustion may precipitate feeding changes, feeding may be maintained by social network and health professional influences which are family-centred and boost both the woman's and family's confidence. Influences on feeding behaviour were examined at four stages of the feeding journey: intention in pregnancy; maintaining optimal feeding; the lead up to feeding behaviour change and after behaviour change. At each of these stages, the process by which people, situations and experience exert their influence emerged. For example, in the lead up to behaviour change at pivotal points, when formula milk or solids were introduced, or breastfeeding stopped, the processes include anticipating, expecting, considering, planning, preparing, precipitating, advising or endorsing change. Women named as significant others those who were most likely to help them resolve decisions and maintain confidence as mothers. Health professionals who were woman-centred and endorsed the woman's own decision making were valued as significant others as they helped to resolve guilt. Resolving guilt was a priority, as it contributed to the dominant goal of family emotional wellbeing which for many superseded the feeding ideal of exclusive breastfeeding.

Conclusions and recommendations

Present maternity and infant health care is delivered predominantly to women rather than families and focuses on the health benefits of exclusive breastfeeding until six months. This study suggests that a new family-centered approach is needed, in which health professionals listen to and discuss family narratives about infant feeding. This would enable identification of women vulnerable to stopping breastfeeding or introducing formula milk or solids early. The findings suggest that women who lack positive breastfeeding experiences or experience of later introduction of solids in their immediate social network and who have low confidence are more vulnerable to changing their feeding behaviour at pivotal points. An understanding of the meaning and values attached to both perceptual and tangible situations may help health professionals to support optimal feeding behaviour.

This study highlights the importance of interactions after behavioural change has taken place, as how this change is resolved is likely to affect how women portray

feeding within their social network and influence feeding decisions with future children and grandchildren. However, this has received little attention to date.

Further research is required to design and deliver family-centered infant feeding interventions which listen to family narratives and concerns about situations that are such important determinants of feeding outcome. This should focus on effective, and cost effective ways of helping families most vulnerable to feeding change, how feeding change can be resolved, and its impact on future feeding behaviour.

Definitions

Pregnant women recruited to the study were considered as the index cases and relationships are described in relation to them, i.e. partner, son, daughter, mother, mother-in-law, sister and friend.

The following definitions are used in this study:

- *Breastfeeding initiation* refers to the baby receiving any breast milk, even if only once.
- *Exclusive breastfeeding* is the reference, or optimal feeding behaviour for this paper as recommended by international guidelines on infant feeding (WHO, 2003) as optimal for the health of mothers and infants. It is defined as the infant receiving only breast milk since birth with no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements, or medicines.
- *Introduction of formula milk* is defined as the first formula milk offered to and taken by the baby, even if it is only given once.
- *Introduction of solids* is defined as the first ever solid food offered to and taken by the baby, even if it is only a small amount.
- *Significant other(s)* is the person(s) identified by the woman who has the strongest influence on feeding decisions, regardless of the direction of influence (either for or against the decision).
- *Social network* includes significant others and includes all people mentioned by women and/or their significant others when talking about infant feeding.
- *Woman-centered* approach is to facilitate a woman's own decision making, accept whatever decision she makes and to focus on the woman and her needs rather than solely on breastfeeding.
- *Breastfeeding-centered* approach is to prioritise the goal of continued breastfeeding above all else.
- *Pivotal points* (Hoddinott et al., 2012) are when physical, emotional or social difficulties arise in the first six months after birth and there are conflicts between ideals and reality which results in behaviour change.
- *Self-efficacy* is defined as the belief that one is capable of performing in a certain manner to attain a certain set of goals (Bandura, 1977).
- *Overt influence* is when the woman names a significant other and/or a situation as directly influencing her feeding decision.

- *Covert influence* is when the woman describes social network members and situations in relation to her infant feeding experiences that can be interpreted as influencing her feeding decision.
- A *typology* is a classification system made up of categories emerging from the data that break up the complexity of data into meaningful parts.
- A *situation* is the context at a particular point in time. It can be considered at the macro level for example, there may be a media scare about either breast or formula milk; the meso level for example, the hospital environment or the micro level for example, an unsettled baby.
- A *tangible situation* is observable by others, for example the baby's weight, being in hospital, illness, return to work.
- A *perceptual situation* is not observable and relates to sensations, thoughts or emotions, such as pain, tiredness, loss of confidence or anxiety.
- A *primigravida* is a woman who is pregnant for the first time.
- A *multigravida* is a pregnant woman who has had one or more previous pregnancies.
- A *primiparous* woman is someone who has given birth once.
- A *multiparous* woman is someone who has given birth two or more times.

1. Introduction

1.1. Infant feeding policy review

Optimal infant feeding is recognised as exclusive breastfeeding for the first six months of life followed by the introduction of appropriate solids and continued breastfeeding into the second year and beyond (WHO, 2003). According to the World Health Organisation (WHO) 'virtually all mothers can breastfeed provided they have accurate information, and support within their families and communities and from the health care system.' (WHO, 2003). All the UK countries are falling some way short of the goal of optimal feeding, with less than 1% of women exclusively breastfeeding to six months (84% losing their exclusive status through introduction of infant formula or other liquids) and only 2% delaying the introduction of solids until six months (Bolling et al., 2007). Information Services Division (ISD part of NHS National Services Scotland) data for 2010-2011 which from 2010, covers all health board areas in Scotland, indicates that at around 10 days 46.8% of babies were breastfed (36.3% exclusively) and that by 6-8 weeks 37.1% of babies were breastfed (26.5% exclusively). It noted variation by health board area and maternal factors such as age, socio-economic status and smoking status (ISD, 2011). In order to address the deficits in infant feeding many countries and health organisations have adopted the UNICEF Baby Friendly Initiative (BFI) best practice standards enshrined in the Ten Steps to Successful Breastfeeding (WHO/UNICEF, 1989) and additionally, in the UK, the Seven Point Plan for Sustaining Breastfeeding in the Community (UNICEF UK, undated). The current UK recommendation is that maternity service providers should adopt the UNICEF BFI standards as their minimum standard of best practice (The Scottish Government, 2011a; NICE, 2006). While promotion and support of breastfeeding and the appropriate introduction of solid foods is emphasised as a public health priority (The Scottish Government, 2011a & b; EU Project on Promotion of Breastfeeding in Europe, 2004; WHO, 2003) there is increasing recognition of the influence of the family and the social context on feeding decisions, including initiation and continuation of breastfeeding and introduction of solid foods.

The influence of the social network on infant feeding decisions and behaviours is now acknowledged and in some cases may be more important than health service influence (McInnes & Chambers, 2008). Women coming from a breastfeeding culture or who have a social network with breastfeeding experience are more likely to plan to breastfeed (Bolling et al., 2007). Furthermore being personally breastfed as an infant is associated with continuing to breastfeed (Bolling et al., 2007; Scott et al., 2001) and women who indicate that most of their friends have breastfed are more likely to breastfeed during and beyond the first fortnight compared with women whose friends have mostly formula fed (Bolling et al., 2007). UK survey data indicates that the decision to introduce solids early (before six months) is based on a perception that the baby is not satisfied with milk feeds and on social network advice (Bolling et al., 2007). By contrast delaying introduction to six months tends to be health professional mediated (Bolling et al., 2007). Although most policies emphasise the woman as the recipient of educational interventions and postnatal support they also highlight the importance of providing correct and appropriate information on optimal feeding to

women **and** their families to enable informed decisions (EU Project on Promotion of Breastfeeding in Europe, 2004; WHO, 2003). Involving the extended family in feeding in the early days encourages a more supportive network for the new mother (EU Project on Promotion of Breastfeeding in Europe, 2004) and in particular support and companionship from partners can improve breastfeeding (WHO, 2003). As part of their policy framework the WHO states that women and their babies are 'an inseparable biological and social unit' with the health and nutrition of one bound to the other (WHO, 2003).

Recently published Scottish Government policy reflects much of the global recognition of the influence of partners and the social network on infant feeding choices. The Refreshed Framework for Maternity Care (The Scottish Government, 2011b) recognises the importance of including the whole family in the maternity services. The Framework has moved from a traditional 'deficits model' of health to adopting a 'strengths based approach' which recognises the influence of individual circumstances, social networks and the environment in which families are situated. Although individual behaviour changes are required to improve maternal and child health the Framework acknowledges that motivation to change increases if maternity services address emotional wellbeing and social circumstances (The Scottish Government, 2011b: 16). Before birth, the Framework recommends involving the partner and/or other social networks (father/ partner/ family/ friend) in supporting the woman during pregnancy through antenatal education or birth planning (Principle 10: 31). However after birth, the emphasis of the Framework is on the woman and her baby and there is no mention of the partner and/or social networks.

The Scottish Government, (2011a) nutrition strategy (Improving Maternal and Infant Nutrition: A Framework For Action) aims to enable parents to make an informed choice about infant feeding; support women to initiate and continue breastfeeding for as long as they wish and ensure that infants are given appropriate and timely solid foods. Actions to achieve these aims include workforce education; UNICEF BFI accreditation for hospitals; community health partnerships; university based midwifery and public health nursing programmes; antenatal education; structured breastfeeding support; information and support on formula feeding and practical information or support for the introduction of solids/healthy eating. The strategy acknowledges the 'vital role of significant others' in feeding choices made by parents however, significant other is not defined. The strategy suggests that the provision of full information will ensure parents understand feeding and make informed choices. The strategy recommends involving the woman's significant others (e.g. partners, mother, mother-in-law) in antenatal education (Activity 5.1), but postnatal breastfeeding support, which includes formal peer or mother-to-mother support, is directed at the woman alone (Activities 5.2 - 5.3). Practical postnatal support is recommended for both parents who have chosen to formula feed (Activity 5.4) and during the introduction of solids (Activities 5.5 - 5.6). The Scottish Government has fully endorsed the UNICEF BFI in its recent policies (The Scottish Government, 2011a & b) however, the practical applications of both the '10 Steps' and the '7 Point Plan' are directed at health professionals, women and formal organised peer support programmes, with little reference to family or social network involvement.

1.2. Background and literature review methods

A review of the literature was conducted to explore the published evidence in relation to the report's findings. Specifically a search was done for studies which addressed the significant other (SO) or social network (SN) influences or support for feeding decisions and feeding behaviour change across the infant feeding journey from pregnancy until the introduction of solids. The review updates part of an existing review (McInnes & Chambers, 2006) and was undertaken after data analysis was complete.

The existing review (McInnes & Chambers, 2006) was conducted on behalf of NHS Health Scotland to explore psychosocial issues related to feeding choices as this was considered key to understanding infant feeding choices. The literature search identified journal articles published between 1990 and 2005 which addressed breastfeeding and psychosocial issues including knowledge, attitudes, health beliefs, self-esteem, self-efficacy, confidence, body image, sexuality, anxiety and depression. To ensure relevance to the UK, papers were included in the review if they were located in westernised countries and published in English. This review identified a number of qualitative papers exploring the infant feeding experiences and opinions of women and their social networks. These papers formed a qualitative synthesis (McInnes & Chambers, 2006) which was then updated for journal publication to include articles published after 2005 up until 2007 (McInnes & Chambers, 2008). This qualitative synthesis was used to extend understanding of the current literature by sourcing qualitative studies published since 2007 and by reviewing all papers (from 1990 until 2011) to assess the fit of the data analysis.

The predominant focus in the literature is on education or support delivered to either women or health professionals with the aim of influencing uptake and maintenance of breastfeeding (Hoddinott et al., 2011). As the literature on health professional interventions targeting the initiation of breastfeeding (Dyson et al., 2008) and support for continuing to breastfeed (Chung et al., 2008; Britton et al., 2007) is extensive and has been systematically reviewed, it has not been included. Of note, there have been two UK trials, both reporting no significant effects on breastfeeding outcomes, where antenatal interventions have been delivered to women and their significant others; one to women and mothers (Winterburn et al., 2003) and one to women and their named midwife (Lavender et al., 2005). However, although health professionals have been excluded from this literature review, it is important to recognise that some women consider their health professional or a breastfeeding support group as a significant influence on infant feeding. As well as excluding the health professional literature, different styles of feeding were not focused on in this study for example, breastfeeding on demand, routines, expressing milk, changing the make of formula milk or the types of solids, amounts, and the frequency or utensils used for delivering feeds.

The aspects of infant feeding behaviour that dominate the literature are the decision to initiate breastfeeding and support for continuing to breastfeed. Several authors in the field of infant feeding have defined social support, for instance Dennis et al. (2002) defined social support as: informational, appraisal

and emotional assistance. Both Hall Moran et al. (2006 & 2004) and Dykes et al. (2003) identified the components of support for breastfeeding women, based on Sarafino's 5-category model of support (Sarafino, 1994), as including emotional (e.g. empathy), esteem (e.g. encouragement), instrumental (practical assistance), informational (e.g. advice) and network support (e.g. sense of membership of a group). Support may be targeted at the feeding behaviour for example, supporting a woman to continue breastfeeding. Alternatively, the support may be for the woman herself, supporting her to make her own decisions and choices in accordance with the principles of woman-centered care.

In this review findings are presented for the social network described in relation to the woman who is pregnant or has given birth (her mother, her partner who is usually the father of the baby, her sister etc.). Although an inclusive approach was taken, in the review the woman's partner was male in all papers identified. The review findings are grouped by behaviour stages with reference to optimal feeding (defined as exclusive breastfeeding until 6 months, with introduction of solids at this time (WHO, 2003)). The behaviour stages are: intention to breastfeed in pregnancy; initiation of breastfeeding and the early days; maintaining breastfeeding to six months; the introduction of formula or solids and ceasing to breastfeed.

1.3. Significant others and social networks in relation to infant feeding

The literature relating to social network influences on milk feeding and that relating to solids are very separate, with an extensive literature on breastfeeding but less overall attention on the introduction of solids. The predominant terms in the literature are 'social network' or specific relatives (fathers, or mothers for example), with the term 'significant other' only appearing more recently. Social network support is important for all women (Marchand & Morrow, 1994) and social support networks vary by culture, ethnicity (Marchand & Morrow, 1994; Baranowski et al., 1983; Bryant, 1982) and age of woman (Dykes et al., 2003). Mothers, sisters, aunts and other female relatives are influential but the degree of influence is determined by culture and accessibility (Barona-Vilar et al., 2009; Bryant, 1982). Partners are influential but may have less influence than mothers and other female relatives though this varies by social group (Barona-Vilar et al., 2009). Partners' influence may be stronger in 'nuclear' families, higher socio-economic groups (Aubel, 2012; Entwistle et al., 1982), white cultures (Moore & Coty, 2006; Baranowski et al., 1983) and urban rather than rural families (Reid et al., 2010). Influence is also related to proximity (Bryant, 1982) and for some women the most important influence is their baby and their perception and interpretation of feeding cues and behaviours (McInnes & Chambers, 2006). Having a large social network does not necessarily increase support. Instead, it is more important to have a network, which is congruent with the woman's expectations and goals (McInnes & Chambers, 2006).

From a UK perspective the social network members known to influence infant feeding outcomes are mothers and friends (Bolling et al., 2007) and women also list partners, mothers and mothers-in-law, other female family members as affecting their feeding decisions or providing support (Entwistle et al., 2010; Bailey et al., 2004; Anderson et al., 2001; Dykes & Williams, 1999). In addition to

friends and family, women also source support from health professionals, support groups and websites (Grassley & Eschiti, 2008; Deave et al., 2008). Within the UK there are differences relating to age, socio-economic and marital status e.g. the mother may be more influential for adolescents (Dykes et al., 2003). Women's perception of the relative importance of support from different social network members may also be related to the type of support needed or given (Dykes & Williams, 1999). There is less research on influences on male partners but they tend to have smaller social networks (Tohotoa et al., 2009; Deave et al., 2008; Deave & Johnson, 2008) and may receive support from their partner and work colleagues (Deave et al., 2008; Fletcher et al., 2004).

1.4. Infant feeding intentions in pregnancy

The 2005 UK Infant Feeding Survey (Bolling et al., 2007) showed that 70% of women planned to breastfeed, with 60% intending to breastfeed exclusively and 10% planning to combine breast with formula. Most women who decide to breastfeed know that it is best for baby and will improve their baby's health (Hoddinott & Pill, 1999).

1.4.1 Involvement of the partner

Studies exploring antenatal decisions and expectations suggest that while the decision to breastfeed may be made jointly (Laantera et al., 2010; Voss et al., 1993), some partners are more likely to be 'neutral', stating that it is really the woman's choice or it is her body (Barona-Vilar et al., 2009; Rempel & Rempel, 2004) and that he will support her in whatever she chooses (Avery & Magnus 2011; Sheehan et al., 2003). Some women may indicate a belief that their partner expects them to breastfeed (Marshall et al., 2007; Sheehan et al., 2003) or to formula feed (Scott et al., 2001). There is evidence of correspondence between women's and their partner's beliefs (Rempel & Rempel, 2004; Wolfberg, 2004; Scott et al., 2004) and Rempel & Rempel (2004) indicate that a partner's antenatal opinions about how long the mother should breastfeed have a greater effect on feeding duration than her perceptions of partner approval or support. In some cases partners directly influence a woman's decision to breastfeed (Marshall et al., 2007; Bailey et al., 2004; Stewart-Knox et al., 2003).

1.4.2 Involvement of the female social network

Women are more likely to plan to breastfeed if breastfeeding is the 'norm' in their social network and they have had positive exposure to breastfeeding (Entwhistle et al., 2010; Barona-Vilar et al., 2009; Grassley & Nelms, 2008; Marshall et al., 2007; McFadden & Toole, 2006; Dykes et al., 2003; Ekström et al., 2003; Sheehan et al., 2003; Hoddinott & Pill, 1999). Observing family members or friends breastfeed increases a woman's confidence in her breastfeeding ability and this may have a stronger influence on the decision to breastfeed than promoting knowledge about breastfeeding benefits (Hoddinott & Pill, 1999). Mothers may influence the initial feeding decision (Andrew & Harvey, 2011; Dykes & Griffiths, 1998) although they may suggest that the decision is ultimately the woman's own (Andrew & Harvey, 2011). How the woman herself was fed is a major influence on her own decision about how to feed (Andrew & Harvey, 2011; Bolling et al., 2007; Dykes & Griffiths, 1998) and some women state that how their mother fed was a direct influence on their decision to initiate breastfeeding

(Andrew & Harvey, 2011). Family preference (expressed or otherwise) for using a bottle may lead women to choose formula milk feeding (Entwhistle et al., 2010; McFadden & Toole, 2006; Guttman & Zimmerman, 2000).

1.5. Initiation and establishing breastfeeding in the early days

In the UK initiation of breastfeeding usually takes place during close contact with maternity services and often within the hospital or birthing centre environment. Much of the practice around initiating breastfeeding is informed by the UNICEF 10 Steps to Successful Breastfeeding. In the most recent UK infant feeding survey (Bolling et al., 2007), 76% of women in the UK (70% in Scotland) started breastfeeding but 17% had stopped at one week, with 6% having stopped at only two days. Stopping breastfeeding before hospital discharge is significantly related to a woman's perception that her partner or mother prefers formula milk feeding and to her own mother not breastfeeding (Scott & Mostyn, 2003; Scott et al., 2001). Establishing breastfeeding is a time of significant stress for women (Razurel et al., 2011; Schmied et al., 2002) and strongly related to ideals about motherhood (Razurel et al., 2011) and breastfeeding as symbolic of the good mother (Earle, 2000). For some, formula milk feeding eases the transition to motherhood (Earle, 2000).

1.5.1 Involvement of the partner

Many women express a need to have their partner present during the early days as they adjust to motherhood and establish breastfeeding (Persson et al., 2011) and learning to breastfeed is described as 'an interaction between the mother, the child, the father, the midwife and their environment' (Johansson et al., 2010). However, it is more likely that her partner is excluded from postnatal care in the hospital environment (Entwhistle et al., 2010; Elberg et al., 2010; Rudman & Waldenstrom, 2007; Dykes et al., 2003). It has been shown that women benefit from having their partners alongside them while they are learning to breastfeed as their partner then learns how to support them, receives the same information and becomes a breastfeeding champion (Nickerson et al., 2012). Routine home based support following early hospital discharge in Sweden is viewed favourably as it enables shared responsibility for early infant feeding (Johansson et al., 2010).

1.5.2 Involvement of the female social network

This receives little attention in the literature relevant to the immediate postnatal period in the UK (or similar countries). The new mother often anticipates a number of support needs during the early days and particularly while she is trying to establish breastfeeding (Sheehan et al., 2003). There is some evidence that the social network is excluded from the postnatal or hospital environment (Entwhistle et al., 2010; Dykes et al., 2003) and women often feel lonely and isolated (Entwhistle et al., 2010; Elberg et al., 2010; Dykes et al., 2003). Conversely, Gill (2001) describes how women identify that assistance with breastfeeding in hospital comes mainly from their social network rather than health professionals.

1.6. Maintaining breastfeeding

1.6.1 Involvement of the partner

Following the arrival of the baby the expectation of and emphasis on sharing can exert a strong influence on parenting and on feeding decisions in particular. Breastfeeding may be viewed as teamwork with the partner fully supporting the breastfeeding woman (Rempel & Rempel, 2011; Bailey, 2007). A close relationship between the woman and her partner and his backing to breastfeed are important in its continuation (Dykes et al., 2003).

Partners often identify a 'special relationship' between the breastfed infant and its mother (Rempel & Rempel, 2011; Pontes et al., 2009; Nystrom & Ohrling, 2004; Voss et al., 1993; Gamble & Morse, 1992) and this is further emphasised in promotional literature highlighting the importance of breastfeeding for bonding. He can then make a choice about how to establish a relationship with his infant although this may not always be a choice made consciously. To support breastfeeding he may choose to develop this relationship by being closely involved with the breastfeeding woman referred to as being 'in the zone' (Rempel & Rempel, 2011). He may postpone the development of his relationship with the baby in order to support breastfeeding and his partner or develop it through other infant care activities such as bathing or playing (Rempel & Rempel, 2011; Pontes et al., 2009; Gamble & Morse, 1992). The importance to partners of the relationship with the baby and the recognition of the importance of breastfeeding in creating this relationship varies. These values may also be affected by the style of parenting he develops, which may in turn be influenced by his experiences of fatherhood and his own upbringing (Gamble & Morse, 1992).

One of the key needs identified especially by women (Persson et al., 2011; Tohotoa et al., 2009; Barona-Vilar et al., 2009), and sometimes by partners, is practical support around the house with household chores, baby care and help with older siblings (Rempel & Rempel, 2011). Some partners prefer to be directly involved in providing breastfeeding support to the mother and this can be beneficial especially if they have attended antenatal classes or been actively included in breastfeeding support in the immediate postnatal period (Nickerson et al., 2012). Some partners may identify a role as breastfeeding advocate and protector e.g. defending their partner from unwanted advice or comments or enabling her to breastfeed in public (Rempel & Rempel, 2011; Tohotoa et al., 2009; Nystrom & Ohrling, 2004).

Women appreciate emotional support from their partners particularly when they value breastfeeding or express pride in women's achievements (Nickerson et al., 2012; Tohotoa et al., 2009) and while some partners may highlight this as an important part of their role (Rempel & Rempel, 2011) it is also clear that often the emotional needs of partners themselves are not being met (Tohotoa et al., 2009; Deave & Johnson, 2008), which suggests that they may not be able to support the breastfeeding woman effectively.

1.6.2 Involvement of the female social network

Postnatal support from the female social network may include direct feeding support, other practical support such as housework and emotional support. If breastfeeding is the social network norm women will be more confident in their ability to breastfeed and the adequacy of their milk supply (Entwhistle et al., 2010; Hoddinott & Pill, 1999). Close repeated contact with a supportive network

is reassuring and can help women manage other conflicts (Hauck & Irurita, 2003). Women recognise the importance of support (Moore & Coty, 2006) and rate emotional social support highly (Razurel et al., 2011; Tohotoa et al., 2009; Barona-Vilar et al., 2009). Sources of support change over time (Matich & Sims, 1992) and support networks can change from being supportive to unsupportive (Scott & Mostyn, 2003).

The woman's mother in particular is an important source of feeding support and advice (Andrew & Harvey, 2011; Razurel et al., 2011; Entwistle et al., 2010; Grassley & Eschiti, 2008; Grassley & Eschiti, 2007; Hall Moran et al., 2007; Lavender, 2006; Dykes et al., 2003; Pain et al., 2001; Dykes & Williams, 1999; Whelan & Lupton, 1998) and a woman's mother's own feeding experience is highly influential on breastfeeding continuing (Dykes & Williams, 1999) and the nature of the support offered (Ekström et al., 2003). Mothers who have breastfed transmit knowledge and confidence that breastfeeding is normal (Whelan & Lupton, 1998), communicate the value of breastfeeding to their daughter (Grassley & Eschiti, 2008) and provide emotional, informational, practical and esteem support (Entwistle et al., 2010; Reid et al., 2010; Grassley & Nelms, 2008; Ingram & Johnston, 2004; Isabella & Isabella, 1994). Having a supportive mother or friend is associated with breastfeeding success (Whelan & Lupton, 1998) and satisfaction with emotional support is associated with longer breastfeeding (Isabella & Isabella, 1994). Social network support (emotional and practical) is particularly important for adolescent women (Nelson & Sethi, 2005; Dykes et al., 2003).

1.6.3 Involvement of the baby

The WHO refers to the mother-infant dyad as an inseparable unit (WHO, 2003) reflecting their close and interdependent relationship. Some women identify that it is the baby who drives feeding and the baby's behaviour can bring about change in feeding (McInnes & Chambers, 2006) for example, positive feedback from the baby is important to adolescents (Dykes et al., 2003). The wellbeing of the baby is an important influence and women feel reassured about their feeding decisions if the baby is settled and thriving (Entwistle et al., 2010; Marshall et al 2007; Bailey et al., 2004). Some of the decisions about feeding are related to the interpretation of infant behaviour, for instance if the woman is confident about her milk supply she may view frequent feeding positively as it increases milk supply (Entwistle et al., 2010; Dykes & Williams, 1999). Weight gain can be used as a gauge for social network members to assess baby wellbeing and the success of feeding (Marshall et al., 2007; Whelan & Lupton, 1998).

1.7. Introduction of formula or ceasing breastfeeding

Recent UK survey data recorded that only 1% of women exclusively breastfed for six months and 75% of all women had given milk other than breast milk (mainly formula) by the age of six weeks and 92% by six months (Bolling et al., 2007). While many studies have explored the reasons women introduce formula, few have explored the trajectory that leads to complete cessation of breastfeeding. To some degree, this trajectory can be inferred from interview studies where women's experiences are reported alongside feeding status. In many cases it appears that the factors that influence women to introduce formula are the same

as those that influence women to stop breastfeeding. These include: a lack of social support or skilled support; concerns over the adequacy of milk supply; pain (Entwhistle et al., 2010; Cloherty et al., 2004; Bailey et al., 2004; Pain et al., 2001; Whelan & Lupton, 1998); and concerns over infant and/or family wellbeing (Bailey et al., 2004; Hauck & Irurita, 2003; Whelan & Lupton, 1998). If formula is given to 'fix a problem' or in response to pressures from the social network or health professionals and the baby appears content (Dykes & Williams, 1999) or the problem resolves then the woman may decide to stop breastfeeding (Entwhistle et al., 2010; Whelan & Lupton, 1998). Other factors relating to lifestyle include the embarrassment of breastfeeding in public or in front of social network members (Hoddinott & Pill, 1999), which may encourage women to introduce formula or stop breastfeeding (Marshall et al., 2007; Nelson & Sethi, 2005). If a woman is not happy with being encouraged to give formula she may reverse her decision and seek help to reintroduce breastfeeding alone (Marshall et al., 2007).

1.7.1 Involvement of the partner

Some partners may be ambivalent about feeding and await the decision to be made by the woman (Pontes et al., 2009) but the woman's perception of her partner's ambivalence to breastfeeding may be associated with early cessation of breastfeeding (Scott et al., 2001).

For many partners the relationship with their infant is a priority (Gamble & Morse, 1992) and those who sense being left out, uninvolved or ignored in the mother-infant relationship (Tohotoa et al., 2009; Nystrom & Ohrling, 2004; Jordan & Wall, 1990) may seek this relationship through using a bottle (Sherriff & Hall, 2011; Voss et al., 1993; Jordan & Wall, 1990). This may lead to the cessation of breastfeeding if formula milk feeding is seen as easier (Sherriff & Hall, 2011). Although the experience or relationship through formula milk feeding is recognised as being inferior to that of breastfeeding (Rempel & Rempel, 2011), partners indicate the value and enjoyment they get from bottle feeding their baby (Bailey, 2007) and women may also think it is nice for their partner to be able to bottle feed (Earle, 2000). Concerns about the partner bonding with the baby may be expressed more by women than by their partners (Avery & Magnus, 2011), but for the partner who wishes to share everything there may be no substitute for the relationship established through actively feeding their baby with a bottle (Tohotoa et al., 2009; Nystrom & Ohrling, 2004; Jordan & Wall, 1990). Partners may also identify a change in their relationship with the breastfeeding woman (Rempel & Rempel, 2011; Deave & Johnson, 2008) who may also experience conflicts in her relationships with both her infant and her partner (Nystrom & Ohrling, 2004). If the woman perceives her partner to be excluded she may experience feelings of guilt and may advocate the introduction of bottles to involve him (Bailey et al., 2004; Dykes et al., 2003; Stewart-Knox et al., 2003; Pain et al., 2001; Earle, 2000).

If a woman's support needs are not met (Barona-Vilar et al., 2009; Nystrom & Ohrling, 2004) she may feel overwhelmed, unsupported and resentful (Nystrom & Ohrling, 2004) and may introduce formula to 'share accountability' or the load with her partner (Barona-Vilar et al., 2009; Dykes et al., 2003:399). Partners do not always identify housework or child care as an important form of support

(Nystrom & Ohrling, 2004) but may prefer to be directly involved in breastfeeding by helping and supporting the woman to breastfeed (Sherriff & Hall, 2011; Rempel & Rempel, 2011; Tohotoa et al., 2009). At the same time partners frequently emphasise a sense of inadequacy in their breastfeeding support role (Avery & Magnus, 2011; Sherriff & Hall, 2011; Tohotoa et al., 2009) stating that they don't have the knowledge or technical skills (Pontes et al., 2009) since they were not involved in classes or education; found literature to be mainly directed at women (Sherriff & Hall, 2011; Tohotoa et al., 2009) and were not present in the immediate postnatal period while women were learning to breastfeed (Nickerson et al., 2012). Some partners may advocate bottle feeding to support or help the woman (Avery & Magnus 2011; Sherriff & Hall, 2011; McInnes & Chambers, 2006; Voss et al., 1993) particularly if she appears tired, upset or is having difficulty feeding (Entwhistle et al., 2010; Bailey et al., 2004). Both parents may express a wish for the partner to bottle feed to give the woman breastfeeding free time (Avery & Magnus, 2011; Nelson & Sethi, 2005; Dykes et al., 2003; Earle, 2000).

1.7.2 Involvement of the female social network

Women from social networks where formula milk feeding is the norm receive less support to breastfeed, are less confident about their ability to breastfeed and the adequacy of their milk supply (Entwhistle et al., 2010; Guttman & Zimmerman, 2000). Women's 'mastery of breastfeeding' may be interrupted by their social network (Entwhistle et al., 2010; Pain et al., 2001) as the pressures and expectations from the social network may undermine breastfeeding and encourage women to give formula (especially where the baby is perceived as hungry) (Nelson & Sethi, 2005; Graffy & Taylor, 2005). Social network pressures may cause women to change their behaviour, i.e. stop breastfeeding, or to distance themselves from unsupportive members while creating new supportive friendships (McInnes & Chambers, 2006). There is evidence of conflicting beliefs over what might be considered to be an 'acceptable duration' of breastfeeding and some women may feel pressurised by friends and family to stop once the child is older (McInnes & Chambers, 2006).

Many women depend on help from their social network but their network may actively discourage breastfeeding (Guttman & Zimmerman, 2000). For other women social network support may disappear after the initial weeks leaving her juggling tasks. This lack of support may cause woman to limit the frequency or duration of feeds (Dykes & Williams, 1999). Even where there is a perception of needs being met the social network may not always be supportive of breastfeeding (Lavender et al., 2006) for example, social network members might suggest giving formula milk to enable rest. The ways the social network may undermine breastfeeding may be overt, unconscious or subtle (Reid et al., 2010; McFadden & Toole, 2006; Lavender et al., 2006; Dykes & Williams, 1999). For instance, breastfeeding may be undermined through language and comments from social network members (Hauck & Irurita, 2003; Scott & Mostyn 2003) or family members may give direct instructions to stop breastfeeding (Scott & Mostyn, 2003). If the source is a close relation, e.g. mother or mother-in-law, the negative effect can be more powerful than comments from health professionals or more transient social network members (Hauck & Irurita, 2003; Scott & Mostyn, 2003). Vulnerable adolescents' decisions to stop breastfeeding may be

precipitated by pressure from the social network (Nelson & Sethi, 2005). Unmet support needs may be attributed to family members' beliefs they were being supportive by 'keeping out the way' and 'leaving her in peace' but women who want encouragement and help might experience this as isolating (Lavender et al., 2006). Women experiencing breastfeeding difficulties may find that rather than giving support, family members who have not breastfed actually discourage breastfeeding or give advice on supplementation (McInnes & Chambers, 2008). Family members can also use difficulties to justify their own problems and to suggest moving to formula feeding (Lavender et al., 2006; Scott & Mostyn, 2003).

Although the woman's mother is identified as a key support person, her support beliefs may undermine breastfeeding (Reid et al., 2010; Grassley & Eschiti, 2008; Grassley & Eschiti, 2007) or she may feel excluded by her daughter's breastfeeding and therefore feel less able to be helpful (McFadden & Toole, 2006; Ingram & Johnston, 2004). Some mothers may recommend supplementation (milk or water), which can lead to combined breastfeeding and formula feeding or to the cessation of breastfeeding (Susin & Giugliani 2008; Hauck & Irurita, 2003). Women use energy and effort to protect their breastfeeding decisions from unsupportive mothers (Grassley & Eschiti, 2008) and having an unsupportive mother is associated with women's perceptions of having insufficient milk and shorter breastfeeding duration (Isabella & Isabella, 1994). Mothers may actively encourage feeding methods with which they are familiar, especially if the breastfeeding woman encounters problems (Hauck & Irurita, 2003; Whelan & Lupton, 1998).

1.7.3 Involvement of the baby

If the woman perceives unmet needs in her infant or interprets baby behaviour (such as crying, frequent feeding or being unsettled) as hunger then she may worry and doubt her feeding ability or milk supply (Dykes et al., 2005; Cloherty et al., 2004; Hauck & Irurita, 2003; Dykes & Williams, 1999; Whelan & Lupton, 1998), which may lead to formula being introduced (Bailey et al., 2004; Dykes & Williams, 1999). Similar interpretation of infant behaviour by the partner or social network can trigger negative comments or suggestions to give formula as the solution (Entwhistle et al., 2010; Marshall et al., 2007; Graffy & Taylor, 2005; Hauck & Irurita, 2003).

The woman's perception of slow weight gain or weight loss may cause her to start to doubt her milk supply (Dykes & Williams, 1999). Women may introduce formula directly as a result of seeing weight being measured or plotted (Bailey et al., 2004; Dykes & Williams, 1999).

1.8. Introduction of solids

The quinquennial infant feeding surveys have shown that the age of introduction of solids has become progressively later (Bolling et al., 2007). However, the 2005 survey (Bolling et al., 2007) is the first reported since the change in feeding recommendations and although it shows that solids were introduced later than in previous surveys it also reports that 98% of babies had been given solids before the recommended six months, the mean age was 19 weeks and 77% had started at three months (Bolling et al., 2007). There is much less literature surrounding

the introduction of solids compared with milk feeding stages and the majority focuses on types of food, styles of feeding and age of the infant rather than influences on the decision. Studies that explore the wider social network influence tend to be located in resource poor countries where the extended family is fully involved in feeding decisions. Such papers have questionable relevance for UK families due to cultural differences, although there may be similarities with infant feeding decision-making by women from socio-economically disadvantaged Scottish neighbourhoods (Darwent, 2012).

1.8.1 Involvement of the partner

There is limited exploration of partner influence in the published literature. One paper conducted factor analysis and regression analysis of various influences but partner support did not feature in the final model (Arden, 2010). In another study partners were rarely mentioned and had a secondary role to grandmothers (Carruth & Skinner, 2001). In a third study focusing on baby-led weaning, factor analysis identified three sources of support: (1) health professionals; (2) family members including partners, mothers and mothers-in-law, with partners loaded highest; and (3) external sources of support such as books, internet forums and friends. However, only the health professional factor was significantly related to feeding practices (Brown & Lee, 2011). An earlier US study amongst economically disadvantaged parents also identified health professionals and mothers as the main sources of advice but noted differences between ethnic groups, with partners' input being more common in white families (McLorg & Bryant, 1989).

1.8.2 Involvement of the female social network

Decisions about introducing solids especially related to the preferred age to start are strongly influenced by the social norm (White, 2009; NICE, 2007; Anderson et al., 2001; Daly et al., 1998). Many mothers report having received or sought advice from sources other than health professionals including family members and friends, with many trusting the advice from those around them and finding it more helpful than health professional advice (Caton et al., 2011). Advice from friends or relatives may influence the decision to start solids (Bolling et al., 2007; Wright et al., 2006; Carruth & Skinner, 2001) and for some women, their mother may be more influential than health professionals (Alder et al., 2004; Barton, 2001; Bentley et al., 1999; Daly et al., 1998). Mothers and mothers-in-law may reinforce or approve decisions on introducing solids by commenting on the baby being more settled on solids (Anderson et al., 2001). Social network advice may influence the earlier introduction of solids (Bolling et al., 2007; McDougall, 2003) as it may discourage women from waiting until the recommended age of introduction, with the early introduction of solids being found to be associated with the opinions of the infant's maternal grandmother; living in a deprived area; personal disagreement with the current advice and lack of encouragement from friends (Alder et al., 2004). Health professionals and mothers were the main sources of advice on introducing solids for some economically disadvantaged parents, with mothers advocating the early introduction and where advice from a health professional differed from the social network parents would often choose to follow their social network's advice (McLorg & Bryant, 1989). Peer pressure influences some women and this may reflect competitiveness about reaching

developmental stages, with mothers keen to present their child as more advanced than its peers (Arden, 2010; Murphy et al., 1998).

Some women are less influenced by relatives and friends (Bentley et al., 1999) and may perceive their advice as out of date or negative (Caton et al., 2011; Arden, 2010) or pressurising to start solids (McDougall, 2003; Murphy et al., 1998). The social network may be identified as a source of information and advice (Arden, 2010; Bolling et al., 2007; Carruth & Skinner 2001; Savage et al., 1998) but this is not always followed (Arden, 2010; Quintero et al., 2006). Deviance from behaviours that are either recommended or perceived as social norms is described with the concomitant perceptions of being a 'good' or a 'bad' mother (Murphy, 1999).

1.8.3 Involvement of the baby

The baby's behaviour and a perception that the baby is no longer satisfied with milk feeding is a strong influence on introducing solids. In particular, signs of hunger, showing an interest in food and disrupted sleep are associated with their earlier introduction (Caton et al., 2011; White 2009; Bolling et al., 2007; NICE, 2007; Wright et al., 2006; Alder et al., 2004; Savage et al., 1998). This may be viewed as being baby-led or responsive to the baby's needs (Arden, 2010; Anderson et al., 2001) or developmental readiness (Arden, 2010; White, 2009). There is a feeling amongst some mothers that 'every baby is different', which justifies their disregard for guidelines and using their instinct, based on cues from their baby (Caton et al., 2011). Once the baby receives solids s/he may appear more settled thus confirming that the decision was correct (Alder et al., 2004; Anderson et al., 2001). A study of infant feeding practices across five European countries found that 'baby-led' was the predominant reason for introducing solids, particularly in Scotland and Sweden compared with Italy, Spain and Germany, where parents were keener to rely on advice from health professionals and in Scotland and Sweden solids were more likely to be introduced earlier (Synnott et al., 2007).

Recently there has been a movement towards baby-led weaning (BLW) which advocates infant self-feeding from the outset and recommends that the first solid foods offered should be solid finger foods and that spoon feeding and purees are unnecessary at a later age of introduction of solids (Townsend & Pitchford, 2012; Brown & Lee, 2011; Wright et al., 2011). BLW is associated with later introduction of solids and it has been shown that parents who adopt BLW tend to be from higher socio-economic backgrounds (Brown & Lee, 2011). It has been suggested that infants who are introduced to solids in this way may be more able to self-regulate their food intake in childhood, impacting on food preferences and BMI (Townsend & Pitchford, 2012).

2. Methods

2.1. Aims and objectives

This report describes the secondary analysis of data collected from a large qualitative serial interview study which investigated the perspectives of women and their nominated significant others from late pregnancy until six months after birth, focusing on 'what would make a difference' (Hoddinott et al., 2010). The specific aims and objectives were:

1. To understand the different patterns of significant other support for infant feeding from pregnancy to six months after birth and how they change over time.
2. To explore patterns between significant other support and decisions about breastfeeding, the introduction of other liquids and solids.
3. To understand the experiences of support provided by significant others and what families perceive would make a difference to this support.

The study is informed by a systems based approach to family and social support and ecological theory of behavioural change, which understands health related decisions as constantly adapting to changes in the micro, meso and macro context in which the decisions are made (McLeroy et al., 1988). The study was conducted in two contrasting Scottish Health Boards around 100 miles apart, where maternity units were working towards Baby Friendly Initiative accreditation (WHO/UNICEF, 1989). Two qualitative researchers were based at each site. The research team brought together considerable infant feeding research experience from different backgrounds: nutrition; the voluntary sector; social policy; midwifery and general practice. Conducting qualitative research with a multi-disciplinary team can help challenge researcher assumptions and biases, which is important when one of the aims is to develop theoretically informed interventions to test in trials.

2.2. Recruitment and sampling strategy

Approval for the study was obtained from the North of Scotland Research Ethics Committee (reference number 09/S0802/65) and from NHS Grampian and NHS Forth Valley Research and Development.

The research aimed to recruit over 75% of participants from the three more disadvantaged SIMD quintiles and select women with diverse characteristics who intended to breastfeed or who had breastfed a previous baby. Maternity unit databases were used to identify 459 (Site 1) and 533 (Site 2) women due to give birth between September to October 2009. As mothers living in disadvantaged areas are less likely to breastfeed and to participate in research (Bolling et al., 2007) all women living in the three more deprived postcode quintiles of the Scottish Index of Multiple Deprivation (SIMD) (n= 420) and a smaller sample of women living in the two more advantaged SIMD quintile areas (n=121) were invited to participate (Hoddinott et al., 2010). In more advantaged areas, families were purposively sampled where the woman or her partner had a low age of leaving full time education, a non-professional occupation, or were immigrants to the UK, which may be a disadvantage particularly around the time of childbirth.

Invitation packs included an introductory letter on Maternity Unit headed paper signed by a lead health professional, an information leaflet and a short opt-in characteristics questionnaire with a free post envelope to inform purposive sampling. From 541 invitation letters sent out 4-8 weeks prior to a woman's estimated date of delivery, 72 (13%) women volunteered to participate and provided socio-demographic data. Using a sampling frame, 18 women were selected from each site based on the characteristics listed in Table 2.1.

2.3. Data collection

The aim was to interview women every four weeks, at a time and place to suit them. Women were told: We would also like to chat to any family members, your partner or friends who will be helping you with feeding once you have your baby. Prior to face to face interviews, women were given a choice whether to be interviewed alone or with the nominated person(s). Including significant others captures how relationships change over time and enables infant feeding to be understood in a wider socio-cultural context. Frequency of contact was negotiated, being sensitive to the emotional and physical impact the arrival of a new baby can have on a family. Face to face interviews took place at home during pregnancy, within four weeks of birth and at six months, with shorter, mostly telephone, interviews (0-5) in between. Two participants preferred face to face interviews throughout as English was not their first language. Prior to contact after birth, midwives accessed NHS records to ensure a safe delivery had occurred. A website discussion forum was available throughout the study. This complemented interview data and enabled contributions from volunteer parents who had not been selected to participate.

Serial qualitative interviews allow trust to develop between the researcher and participant. They allow early questions generated from data analysis to be explored in depth later and can help validate study findings (Murray et al., 2009). Interviews were semi-structured, loosely following topic guides that were modified over the course of the study to probe emerging themes in more depth and to search for disconfirming data (Hoddinott et al., 2012). Topic guides served to remind the interviewers of topics to explore towards the end of the interview if they had not been spontaneously raised in participant narratives.

Table 2.1: Characteristics of women selected for interview (n=36)

	Site 1 participants (n = 18)	Site 2 participants (n = 18)
Age (years)		
≤20	0	3
21-30	4	4
31-40	11	11
≥40	3	0
Age at leaving full time education (years)		
16 or less	1	3
17	1	5
18	3	1
19 or more	13	9
Occupational classification*		
1-3	10	6
4-6	5	8
7-9	2	3
Not employed	1	1
Parity		
0	9	10
≥1	9	8
Scottish Index of Multiple Deprivation (SIMD)**		
1-3	13	13
4-5	5	5

*Standard Occupational Classification (SOC 2000) taken from the 2000 Census (Office of National Statistics, 2001):

1	Managers and senior officials	6	Personal service occupations
2	Professional occupations	7	Sales and customer service occupations
3	Associate professional and technical occupations	8	Process and plant and machine operatives
4	Administrative and secretarial occupation	9	Elementary occupations
5	Skilled trade occupations		

**The Scottish Government, 2009. SIMD 1 is the most deprived quintile. SIMD 5 is the least deprived quintile.

At the end of each interview, researchers collected structured information (Appendix 1) about significant others who had been influential since the last interview (age, relationship, distance from the family and feeding experience). Participants were asked, 'Who has had the strongest influence on your feeding decisions since we last spoke?' The person(s) named are referred to as significant other(s) and their influence on the feeding decision is referred to as overt. In contrast, covert influences are social network members and situations described in the interview data that the research team interpreted as influencing feeding decisions but were not named at the end of the interview. In particular, any inconsistencies with the structured data and earlier semi-structured interview data or changes in the person(s) nominated as significant at different time points could be explored. Similarly researchers collected structured data at each time point about breastfeeding duration, exclusivity, introduction of non-milk liquids

and solids, based on the Office for National Statistics five yearly UK survey questions (Bolling et al., 2007). The intention prior to starting the study was to investigate how the formative interview data agreed or contrasted with a summative evaluation of significant other influence at the end of the interview, and any change over the breastfeeding journey from pregnancy until six months after birth.

Prior to the final interview, the research team constructed seven vignettes describing a range of health or community services to help with infant feeding informed by the emergent data analysis and the research evidence. The vignettes were multi-component and designed as research tools to assist with the development of interventions for future research. They were given to participants to read and comment on at the final six month interview and details are provided elsewhere (Hoddinott et al., 2012; Hoddinott et al., 2010).

2.4. Data analysis

Data collection and analysis progressed iteratively, with the four authors involved in listening to interview recordings, reading verbatim transcripts, identifying and interpreting themes and agreeing modifications to topic guides according to the emerging analysis. All interview transcripts were entered as data units onto FrameWork software (National Centre for Social Research, 2012). FrameWork is a rigorous, systematic data management tool, which allows original data and researcher interpretations to be transparently documented and maintains the important direct link between coded themes, interpretations and the original interview data (Ritchie & Lewis, 2003). The four researchers independently constructed a thematic index by reading a sample of six information rich and diverse transcripts of antenatal and first postnatal interviews, then reached consensus through discussion. A further six interviews were selected in a similar manner to add to the index to cover the introduction of solids. A final thematic index for the antenatal and early postnatal interviews was agreed approximately half way through data collection when these interviews were complete, and finalised for the introduction of solids towards the end of data collection. The index was used to organise, label and summarise data, which facilitated the construction of different charts, with cases (rows) and themes (columns). Charts compared summarised theme data for couples with differing attributes, e.g. primiparous compared with multiparous women; early cessation of breastfeeding compared with late; early introduction of solids compared with late and differences in the level of partner or significant other involvement with infant feeding. Analysis proceeded by researchers listening to interviews, reading transcripts, keeping reflective diaries, identifying interpretive themes, discussing them, generating research questions, creating different FrameWork charts to explore patterns and to search for disconfirming data. Data from the significant other form (Appendix 1) were entered into Excel and analysed descriptively. Towards the end of the analysis, the web discussion forum data was searched for any disconfirming data and no such data were found.

The overarching theme generated by the first period of analysis was that families, their social networks and the health service hold different explicit or implicit philosophical positions of idealism or realism about infant feeding (Hoddinott et

al., 2012; Hoddinott et al., 2010). For the second phase of analysis undertaken for this report, the research team sought to understand how significant others influence feeding behaviour and behaviour change. Interviews were sorted into those conducted immediately after a pivotal point where behaviour changed, and those where existing behaviour was maintained. The reference behaviour was exclusive breastfeeding with no other fluids or solids until six months after birth, which is recommended in infant feeding guidance and global policy (The Scottish Government, 2011a; NICE, 2006; WHO 2003). With pivotal points as the central theme, patterns were searched for and explanations for how feeding outcomes differ according to family, social and health professional support networks. The three pivotal points chosen to focus the analysis were the decisions to introduce a) formula milk and b) solid food, and c) to stop breastfeeding. These three were selected as they represent the main departure from the reference behaviour. There are many other changes of feeding behaviour in the course of the feeding journey which are important, including feeding frequency, amount, expressing breast milk, type of formula milk, and introducing other liquids and remedies. The research team immersed itself in the interview transcripts and the FrameWork charts constructed in the initial stage of analysis and through discussion developed questions with which to interrogate the data (Figure 2.1).

Quotations from interviewees to support findings are followed by a reference, for example, (ID 2192. Interview 10 weeks after birth: breastfeeding with formula introduced at 5-6 weeks. Significant influences: health visitor). The four digit number is the mother's study number which can be cross referenced to her feeding characteristics and to the significant others who influenced her infant feeding decision making in the tables presented in this report and previously (Hoddinott et al., 2010).

Fig. 2.1: Questions generated by the research team which were used to interrogate the data

1. How does significant other support change over the feeding journey from pregnancy to 6 months after birth
 - a. the number of significant others named by the woman
 - b. their relationship to her
 - c. the distance of their home from her home
 - d. whether their influence is positive or negative
 - e. whether they have personal breastfeeding experience?
2. What characteristics of the support provided (or not provided) by significant others are valued (or not valued)?
3. Why do semi-structured interview data about significant others and answers to summative direct questions at the end of the interview differ? For example, some interview narratives suggest a person is a significant other but s/he isn't named; in others a significant other is named who has hardly been referred to in the interview.
4. How does/doesn't health professional care integrate with significant other support? – when, where, how, how often?

3. Findings

3.1. Participant characteristics

A total of 220 recorded individual or pair interviews took place with 36 women (Table 3.1) and 37 significant others (26 partners, eight maternal mothers, one sister and two health professionals), with women interviewed between two and eight times (Appendix 2). All women intended to breastfeed except one who had breastfed a previous baby but intended to formula feed on this occasion. Two women withdrew from the study after the first postnatal interview, but as both had stopped breastfeeding by this time, they contributed data on their antenatal feeding intentions, the introduction of formula milk and stopping breastfeeding. The remaining 34 families were each interviewed from the last trimester of pregnancy until six months after birth.

Table 3.1: Interview frequency

	Number of index cases (women) n=36	Number of interviews where a significant other was present
2 interviews	2	3
3 interviews	-	-
4 interviews	1	2
5 interviews	6	8
6 interviews	15	27
7 interviews	6	7
8 interviews	6	15

The involvement of significant others in the interviews varied both in the extent to which they were physically present (full, moderate or low participation) and in their level of engagement (active involvement in the discussion). Variation was sometimes through necessity for example, looking after children during the interview, answering the telephone, or through choice for example, wandering away to do something else. These patterns emerged spontaneously and no explicit instruction was given by interviewers about the balance of interview participation for the woman and her significant other, and prompts were used to engage all participants. Such non-verbal observations contributed to the data analysis, particularly for the woman-partner relationship in relation to feeding and parenting tasks.

3.2. Emergent typologies

Typologies are classification systems made up of categories emerging from the data that break up the complexity of data into meaningful parts. The aim was to identify the typology that would contribute most to understanding significant others' involvement in women's infant feeding behaviour. Initially FrameWork and Excel charts were explored to investigate patterns relating to the questions posed in Figure 2.1. Using a typology of the relationship of the significant other or social network to the woman is the norm in the infant feeding literature. However, on searching for patterns relating to pivotal points, only a few were identified, relating to the woman naming herself and the baby as the significant other and the involvement of health professionals around the point of introducing solids. This typology is described in Section 3.3. Next, a typology relating to significant other influence on feeding outcomes at fixed time points (antenatal, 1-4 weeks, 3 and 6 months after birth) was explored. The outcomes considered were exclusive breastfeeding, partial breastfeeding, formula feeding and the introduction of solids, and again, no additional patterns were identified. It was then decided to focus on all data relating to pivotal points where feeding behaviour changed and the involvement of significant others was compared and contrasted by the research team to develop a typology for the stages of infant feeding behaviour (Table 3.2).

Table 3.2: Typology of stages of feeding behaviour and how they are influenced

Stages of feeding behaviour for a) breastfeeding b) formula milk c) solids	Significant other and situation influences on pivotal points for feeding behaviour change after birth
Intention in pregnancy	Anticipating Expecting Considering Planning Preparing
Maintaining behaviour	Supporting Preventing Postponing Rejecting
The lead up to behaviour change	Anticipating Expecting Considering Planning Preparing Precipitating Advising Endorsing Approving
After behaviour change	Resolving Endorsing Approving Disapproving Reversing

The focus in Table 3.2 is behaviour change at pivotal points for three feeding behaviours: breastfeeding, formula milk and solids. Every stage in the feeding journey (intention, maintenance, the lead up to and after behaviour change) and every category describing how significant others and situations influence the behaviour, relate to these three feeding behaviours. The influencing processes (right column in Table 3.2) emerged through analysis of the interview data and this is described in more detail in sections 3.6-3.9.

3.3. Significant others identified by women across the entire feeding journey

This section describes the analysis of all structured data about significant others who influenced feeding decisions, collected at the end of each interview (Appendix 1). Women described several individuals or groups of people who were influential. The totals are summarised in Table 3.3, with further details in Appendix 3.

Table 3.3: Significant others* named by women (n=36)

	Self/ baby	Health profess- sional	Partner	Female network			Media/ culture	Male relative
				Mother	Friend /colleague/ group** member	Other female relative ^{\$}		
Primips	14	18	13	13	12	10	6	2
Multips	16	12	14	9	6	7	1	0
Total	30	30	27	22	18	17	7	2

* All relationships are in relation to the woman participant

** Group member refers to a few women attending parent and baby groups or contributing to online forums on babies / parenting

^{\$} Other female relative excludes the woman's own mother

A few women found it difficult to respond to the question on significant influences, saying, 'it's been left to me to decide', or 'nobody, because I haven't really sought advice', or naming the baby as an influence when suggested by a partner. For the purposes of analysis and comparison between different feeding behaviours, a typology of groups of significant others was developed:

1. partners
2. women themselves and their babies (the woman-baby dyad)
3. the female network (including relatives, friends, work colleagues, women at baby groups and online forums)
4. health professionals
5. other men excluding the partner
6. media and cultural background.

Analysis focused on the first four categories of significant other who were named most often. The male network (category 5) were only named twice as a significant influence. A brother-in-law was named as a negative role model because his partner had not breastfed for long, and a father who helped look after his grandchild was named. Men were occasionally mentioned in interview narratives, mainly fathers or fathers-in-law who baby sat, played with an older

child or 'did all the chores'. Men were more likely to be mentioned in relation to breastfeeding in public, with some women expressing concern about 'feeding in front of my dad' or going upstairs to feed at her parents-in-law's house because they're 'quite shocked and would feel uncomfortable'. Seven women mentioned the influence of the media in general or culture (social pressure, their education and background) on feeding decisions, usually before the birth, without any reference to a particular person. These are defined as situations influencing feeding decisions and values (Section 3.4.). One woman named women on an internet forum as a significant influence and she was categorised as part of the female network rather than as a situation.

Table 3.3 and Appendix 3 reveal some patterns. Women were most likely to name health professionals, and themselves and the baby as significant others, followed by partners, mothers, female friends and relatives. Overall, primiparous women named more significant others than multiparous women, but slightly more multiparous women named themselves and the baby as a significant other. Women at Site one, who were slightly older, better educated and with lower levels of deprivation than participants from Site two (Hoddinott et al., 2010), named a higher number of significant others overall, even though they were interviewed on fewer occasions.

Twenty seven of thirty six women mentioned partners as a significant other, sometimes as a separate influence and sometimes jointly with themselves. Similar numbers of primiparous and multiparous women named partners as an influence and the number of mentions was similar at both sites. The extent of partner influence ranged from two who were named, usually as the sole influence, at every interview, to those who were only mentioned once, often with others and not at a pivotal point when feeding changes were occurring.

Interview narratives described couple relationships which differed in the extent to which child care and household tasks were shared. At the extremes were couples in which women were 'a one man band', doing the bulk of housework and child care themselves, and 'share everything' couples, often first time parents, who expected to 'take turns' in all tasks, sometimes including feeding. Mentioning the partner as an influence was sometimes, but not always associated with being a sharing couple.

Partners were the most common significant other to be involved in interviews and were present at 54 interviews, and at 18 of these were named as a significant influence. Their level of participation may have affected whether they were named as a significant influence. In addition, some women may have interpreted the question on significant influences as only including those not present. Some women and partners had a couple orientated approach to participating in the interview, naming influences 'apart from [partner]', whereas other interviews centered around the woman, reflecting differing relationships and personalities. It cannot therefore be assumed that not mentioning the partner when he was present indicated that his influence was insignificant.

Twenty six of thirty six women named themselves as a significant influence on feeding decisions, 11 from Site one and 15 from Site two. More of these women were multiparous, had breastfed for at least four months previously and were slightly older. Sometimes the response 'self' summarised a process of listening to the perspectives of a number of people in the social network, and health professionals, and choosing 'the bits out of everybody's [views] that I've thought "well that fits in with what I'm thinking"'. There was also a smaller group of first time mothers who named themselves in the absence of other positive influences, or later on, sometimes after stopping breastfeeding or when their confidence as parents grew. Twelve women also named their baby as a significant influence, two of them mentioning themselves and the baby as a joint influence. Babies were named more frequently as they grew older, with four women naming them at the first postnatal interview and eight doing so later around the time solids were being considered. As with partners, some women named themselves and/or the baby at every interview with few other people mentioned, whereas others mentioned themselves or the baby on one occasion only.

Members of the female network, particularly mothers, friends/colleagues, and sisters, were named as influential by 29/36 women, slightly more often by primiparous women. They were mentioned by similar numbers of women from each site, although women at Site one named a wider range and a higher number of such influences. Mothers of the women were particularly likely to be named as an influence at the time of introducing solids. New friends, or existing friends who had not been mentioned previously were sometimes named when women sought support from people who had a similar approach to feeding and child rearing. For example, new friends from the breastfeeding group who were 'going through the same as you' might be chosen instead of older, formula feeding friends who said 'just bottle feed her'.

Thirty of thirty six women named one or more health professional as a significant influence at some point, with similar numbers of women mentioning health professionals at each site and primiparous women more likely to do so (18/30). One primiparous woman named health professional influences at every interview with very few other people mentioned whereas five multiparous women never mentioned health professionals. At the two study sites, the transition from community midwife to health visitor care usually occurred at day 10-14, although sometimes health visitors were involved in antenatal education or visited earlier. Midwives were mentioned as significant influences by 13 women, most frequently by primiparous women (9/13) and were mentioned an equal number of times antenatally and in the early postnatal period. By comparison health visitors were mentioned by 26 women. Of note, health visitors were the key health professional at up to six interview points compared with two for midwives, reflecting the transfer of care from midwives to health visitors at around two weeks after birth. Health visitors were most likely to be mentioned as influential at the time of introducing solids. GPs were also mentioned as an influence by four women, usually with health visitors, in connection with situations such as lack of weight gain, mastitis, or stopping breastfeeding.

3.3.1 Size of significant other network

Most women had networks of influence which were fairly constant over time. At Site one, the total number of different significant others, including themselves, named by women over 101 interviews was 150, (range 2-17), with multiparous women naming an average of seven significant others and primiparous women naming an average of nine. By contrast, Site two interviewees named fewer different people overall (95 total; range 2-12) in spite of a higher number of interviews (117), with multiparous women naming an average of four significant others and primiparous women naming an average of six. Overall, a higher number of significant others were named antenatally than subsequently, except by multiparous women at Site two who named a smaller number of influences throughout. There was a decline in the number of significant others named over time, particularly at Site one.

3.3.2 Geographical spread of significant others

Having a close and trusting relationship with significant others often appeared to override the disadvantages of distance, helped by the relative ease of communication via telephone and the internet. Several women, including those where English was not their first language, reported influential family and friends living abroad. However, there were occasions when local or visiting significant others provided face to face help with breastfeeding, preventing or postponing a change of feeding behaviour, which would have been difficult or impossible from a distance for example, when a friend 'spent most of one night' helping to get breast lumps 'released'. Similarly, active help with household chores, stocking the freezer and providing meals was valued.

3.3.3 Breastfeeding experience of significant others

Two thirds of study women had themselves been breastfed and mothers were sometimes named at the antenatal interview as a significant influence, although other women nearer in age with breastfeeding experience were also likely to be named. In this study, a risk for the early cessation of breastfeeding was not having been personally breastfed and not having a significant other who had successfully breastfed. Of the nine women in the study who stopped breastfeeding before six weeks, all primiparous, four had not been breastfed, and three had mothers who had difficulties breastfeeding and stopped by six weeks. These women were also likely to name other relatives or friends who had experienced problems breastfeeding or had introduced solids early as significant others. Some interviewees valued the personal breastfeeding experience of health professionals, but others did not know if health professionals had breastfed or felt that a caring approach and experience gained caring for many women were more important than personal breastfeeding experience.

3.4. The importance of the situation

The sixth category in the typology of significant others influencing feeding decisions was media and cultural background, which is included under the broad heading of *situation*. The term *situation* has been chosen rather than *context* because the behaviour or the pivotal point when behaviour changes is located at a specific point in time. However, in many respects context and situation can be considered as interchangeable. Apart from the people influencing feeding

decisions, the data revealed a wide range of situations which were also influential. Situations may be divided into those which are tangible (e.g. the baby's weight, maternal or baby illness, the needs of older children, work commitments and holidays) and those which are perceptual, often relating to physical sensations or emotions arising from feeding, such as pain, anxiety and lack of sleep, but also from growing confidence with feeding, enjoyment and the ability to relax (Figure 3.1). Perceptions of the baby's needs also influenced behaviour for example, when the baby appeared 'hungry', woke more at night or constantly watched others eating. Tangible situations fell onto a continuum with at one extreme, those that were completely within maternal or parental control and at the other those which were not. An example of the former was the decision to adapt feeding in order to take a holiday, allow social activities, or self-care (hair, nails, gym) and of the latter feeding changes necessitated by maternal illness, parental leave from work, or a baby's milk intolerance. An example of a situation in the middle, was a breastfed baby's slow weight gain which might be managed by breastfeeding more frequently or seeking advice on the feeding position, or by introducing formula milk.

Personal feeding history could either be considered as a perceptual situation, influencing future feeding behaviour, or as the influence of a significant other, either the woman herself, or her family and social network. Previous experience of feeding was a very strong influence for multiparous women and families, as was knowledge of their own feeding history for some women and partners. For multiparous women, two patterns were observed. Firstly, doing 'the same' as with an older child, either because it was considered successful, or through familiarity with the routines and timing involved, or because of an obligation to feed this baby in the same manner as previous children. Secondly, to try a different method of feeding, to allow the needs of older children to be met, or because previous experience did not meet the woman's or the family ideal for feeding or family wellbeing. Primiparous women described a vicarious feeding history based on tangible and perceptual situations seen or heard from significant others or the wider social network, including those in the media or culture, with the internet being widely referred to. Feeding decisions often resulted from the complex interplay of influences from significant others, situations and past history and this is summarised in Figure 3.2.

Fig. 3.1: Situations as influences

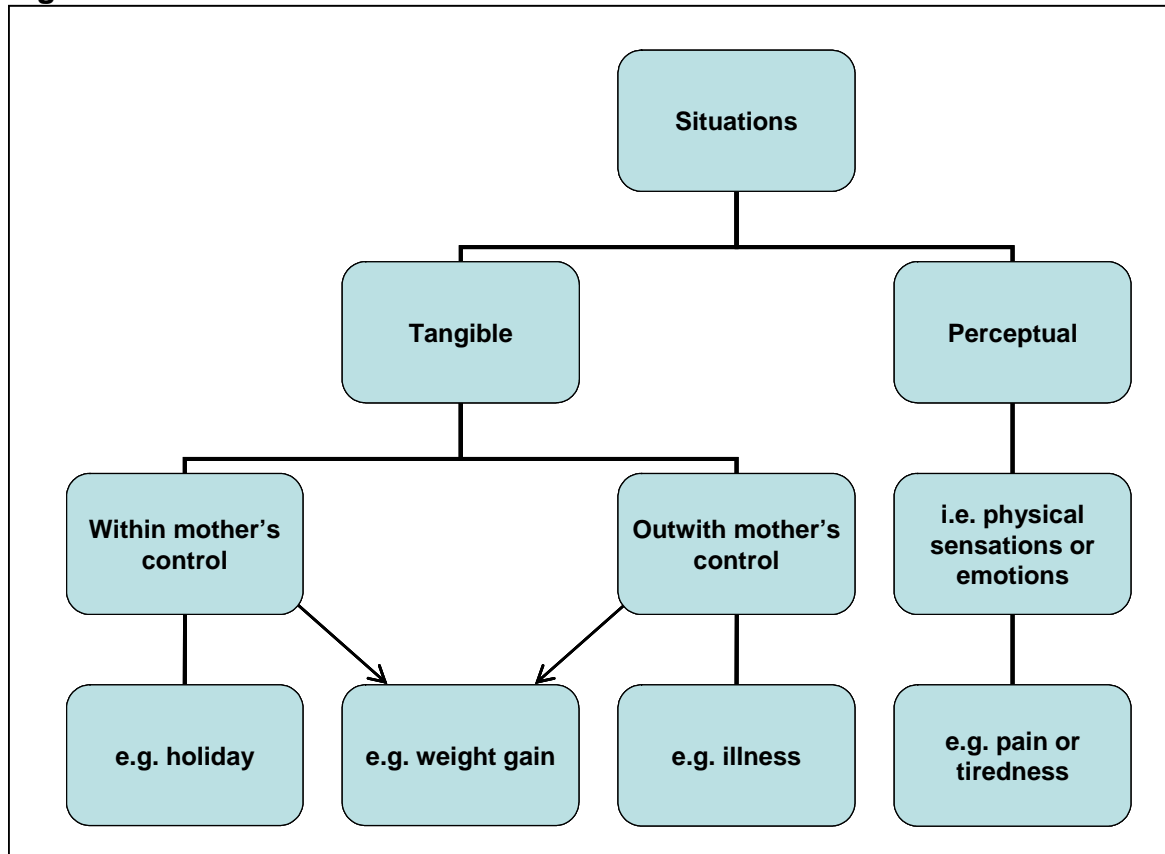
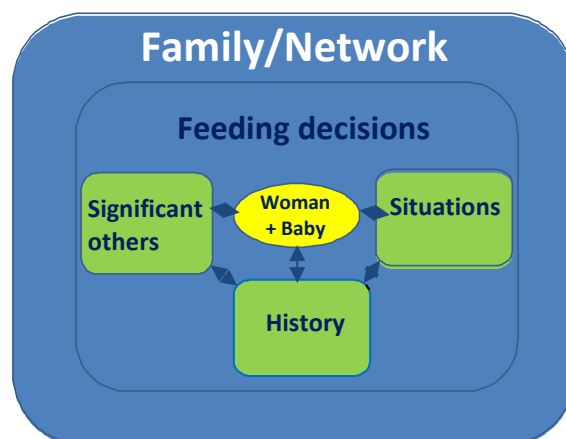


Fig. 3.2: Influences on feeding decisions



3.5. The stages of feeding behaviour and behaviour change

In Section 3.2 and Table 3.2 a typology of the stages of feeding behaviour and the types of influence is described. The following sections, present findings for each of these stages: intention; maintaining behaviour; the lead up to behaviour change and after behaviour change. For each stage three *pivotal points* are examined in particular (Hoddinott et al., 2012): when formula milk is introduced; solids are introduced; or when breastfeeding stops, as markers of the move away from the optimal behaviour of exclusive breastfeeding. The influence of significant others, previous experience and of tangible and perceived situations are considered at these points. For families who avoided some or all of these pivotal points, influences on behaviour maintenance are considered. Influences were either overtly or covertly articulated by interviewees when describing the circumstances relating to a particular feeding stage or decision. Overt influences are those where an interviewee explicitly linked her behaviour to a specific influence, usually a person, in response to the question at the end of each interview, 'Who has been the most significant influence ...', whereas covert influences - people or situations - arose from interpretation of the whole interview including response to this final question. For example, a health visitor was overtly mentioned as a significant influence on the decision to postpone the introduction of solids, but in addition the covert situation influencing behaviour appeared to be the desire to postpone the start of solids until after a family holiday abroad, due to worries about the equipment needed and possible disruption because of the heat.

Table 3.4 summarises the change in significant others named as influential by women in postnatal interviews (Appendix 1) immediately before and after a pivotal point where feeding behaviour changed either by i) introducing formula, ii) introducing solids or iii) stopping breastfeeding. Appendix 4 provides details of the number and the relationship of the significant other named, ordered chronologically according to the time after birth when the feeding change occurred. Where the woman referred to herself and her partner as a couple, or herself and the baby as a unit and used the plural personal pronouns *us* or *we*, a separate column is used. Where feeding behaviour change occurred in the early weeks after birth, the change in significant others was not compared because influence on feeding intention differs from influence on actual behaviour. The key finding illustrated in Table 3.4 is that the significant other (number and relationship) remained constant before and after a pivotal point for very few women. Few other clear patterns were observed. For introducing formula milk the partner was influential both before and after the change. In relation to introducing solids, more women named a higher number and different significant others after the change, compared to changes in milk feeding and this may reflect the wide variety of foods available compared to a small range of formula milks. The researchers' interpretation is that change in the number or relationship of significant others before and after a feeding behaviour change depends on who is most likely to help each woman resolve her decision and maintain her confidence as a mother. This is a priority, as it contributes to the overall goal of family wellbeing which for many is more important than the feeding ideal of exclusive breastfeeding (Hoddinott et al., 2012). In the following sections the analysis of each of the stages of behaviour which led to this interpretation is examined.

Table 3.4: Comparing the significant others named as influential at interviews before and after feeding behaviour change

	Formula milk introduced (n=31)	Introducing solids (n=33)	Stopping breastfeeding (n=18)
Significant others identical before and after behaviour change	1	2	1
Significant others completely different before and after behaviour change	3	10	1
More significant others named after behaviour change	7	16	6
Fewer significant others named after behaviour change	3	5	5
Not applicable Behaviour change occurred before second postnatal interview	17	0	5

3.6. Feeding intention in pregnancy

Although all but one woman in the study intended to breastfeed, narratives showed different perspectives on future feeding, with some women expecting to maintain breastfeeding, and others being more uncertain, mentioning possible changes. The analysis suggests five ways in which significant others and situations influenced feeding intention in pregnancy: 1) anticipating, 2) expecting, 3) considering, 4) planning, and 5) preparing, either to maintain exclusive breastfeeding or change to mixed feeding or formula (Table 3.2).

3.6.1 Anticipating, expecting or considering behaviour maintenance or change. Antenatal data revealed significant anticipation of feeding change, defined as thinking that changes from planned feeding behaviour will probably be made in future. Where there was more certainty, this was interpreted as expecting behaviour change and where there was weighing up of the pros and the cons, and more ambivalence, this was interpreted as considering behaviour change. Such behaviour related mainly to breast or formula milk feeding, although a few parents were already anticipating the introduction of solids and questioning whether they would wait for six months, based on their own family feeding history or friends' experience.

Study data suggested that antenatally, partners who were 'on the fence' about breastfeeding might anticipate 'switching' from breastfeeding, particularly if they themselves were formula fed and 'it didn't do me any harm'. This could undermine women's enthusiasm for breastfeeding, although the extent of partners' influence in practice and whether they were named as such depended on the woman's own commitment to breastfeeding; the attitudes of others in the social network and whether breastfeeding was overall a positive experience. In pregnancy, several expected that the baby would influence behaviour change:

Partner: 'We're just going to see how it goes [laugh] and for all we know when he comes out, he's just going to [raspberry noise] I don't want that rubbish, give me the powder stuff!' (ID 1044. Antenatal interview.
Significant influences: self & partner, sister and sister-in-law. Breastfeeding stopped in 1st week).

Pregnancy accounts showed a lack of confidence about the outcome, with many 'hoping we can breastfeed successfully'; 'giving it a try' or 'dreading it', often based on the experience of others. By contrast, some multiparous women who had fed 'extremely successfully' before anticipated that there 'won't be any problem', 'I am a veteran!' The desire of parents for realistic antenatal information about baby feeding has already been reported, but seeing or hearing about too many negative experiences could lead new mothers to approach breastfeeding, anticipating behaviour change after the birth (Hoddinott et al., 2012). Anticipation that perceptual situations would influence feeding decisions was evident in antenatal interviews, with the prevention of emotional distress high on the list of goals: 'not getting stressed out', avoiding the 'embarrassment' associated with breastfeeding in public and the 'exhaustion' of night feeds. The influence of others might be directly acknowledged or remain covert, with women naming themselves as significant influences when doubts were expressed about

adhering to antenatal feeding plans. Tangible situations were implied as influential by phrases like 'getting your life back' which can be linked to social activities outside the home and self-care (such as hair and beauty appointments, non-essential shopping, going to the gym).

Woman: 'my cousin ... she had got herself in such a state about it ... because she'd said she was breastfeeding and then all of a sudden because she changed her mind ... she was just sort of left to her devices, "here's some bottles, just get on with it". ... So that sort of made my mind up. I've been very much, "yeah, I'll try it", never ... "yes, I'll definitely be doing it" because you just don't know how you're going to react... because some babies don't like it.' (ID 2255. Antenatal interview. Significant influences: cousin and mother. Breastfeeding stopped in 1st week).

Mother: 'I tried it for ten days, and it wasn't for me.... My breasts were that sore and she wasn't sucking very well. ... I got to the stage that I couldn't bear to have her like near me.

Woman: 'I think it's just something that I'd like to try. I'd like to give it a good go; if it doesn't work at least I can say I have tried it.' (ID 2203. Antenatal interview. Significant influences: self and midwife. Breastfeeding stopped in 1st week).

Woman: 'I breastfed my first baby until she was... what, nine months... I have said that I'm not going to breastfeed this one as long [laugh].... Just purely I suppose it's for selfish reasons, that it's quite nice to get a bit of your life back, because it is quite a demanding...' (ID1040. Antenatal interview. Significant influences: self. Breastfed for 21-24 weeks, with formula introduced at 3-4 weeks).

In the quotations above it is difficult to distinguish between anticipating, considering and expecting however, listening to whole interviews often clarified interpretations. Antenatally, some parents were more confident and expected to maintain breastfeeding: 'it won't be easy but I think it's worth persevering with', looking for support from the social network 'to help you not to panic'. Again, those with previous experience of successful breastfeeding had higher antenatal expectations of managing to breastfeed, 'knowing what to expect'. By comparison, others, particularly those without a network who had a positive breastfeeding experience, would consider changing feeding to restore family emotional equilibrium: 'if it's not working, the baby's crying all the time, we'll switch'.

Woman: 'to me, the way I feel about it is, I'll try it and if it works it works, and if it doesn't it doesn't. I know a lot of women are desperate to breastfeed, but not every baby takes.

Sister: 'But I think that's fine just now, but see once your baby's there and you know it's the best thing for them you want to persevere.

Woman: 'I suppose.' (ID 2003. Antenatal interview. Significant others: sister. Breastfeeding stopped in 1st week).

3.6.2 Planning behaviour maintenance or change

Some couples with children described feeding plans based on previous experience, sometimes leading them to plan change 'combining breastfeeding with some bottles as well', breastfeeding for a shorter time, or introducing solids earlier. These influences were sometimes based on tangible situations, and were overt, as when worries that a toddler 'won't get enough attention' was named as a likely influence on feeding, or covert, when parents have 'seen the benefit of breastfeeding, he doesn't get sick', but named other people as significant influences on feeding. Other families who had breastfed successfully before planned to do the same again, 'I wouldn't do anything else', either saying how long they would breastfeed, or intending 'to see how it goes'.

Woman: 'last time I was desperate to breastfeed ...even thinking about giving formula milk was, for me... I couldn't think about it. And this time I considered this kind of situation that, you know, sometimes I can be too tired or too maybe exhausted to breastfeed so I can maybe offer one time, like, once a week or something formula milk, just to make sure the baby is healthy enough.' (ID 2020. Antenatal interview. Significant influences: self and older child. Still breastfeeding at >24 weeks, with formula introduced at 13-16 weeks).

Woman: 'probably at first you're a bit like, "Oh God! Is this [feed] all they do?" And then obviously it settles down about six or eight weeks or whatever. So the second time you knew just to go with it until they settle down and sort of give up yourself for that.' (ID 2169. Antenatal interview. Significant influences: self. Still breastfeeding at >24weeks, with formula introduced at 13-16 weeks).

3.6.3 Preparing for behaviour maintenance or change

Antenatal narratives described preparing for breastfeeding by buying equipment, often breast pumps, but also breast pads and feeding bras, pillows and chairs. Whereas some women expressed confidence and bought no equipment 'because we're planning on breastfeeding', others did the same because they were unsure whether they would manage to breastfeed and did not want to waste money on equipment, or they bought pumps to express milk if breastfeeding was problematic. Those making preparations did so in an attempt to control the perceptual and tangible situations during future feeding, aiding physical comfort, confidence, and allowing others to be involved.

Partner: 'we were wanting to buy the bottles and the express feeding stuff but we didn't know if she was going to breastfeed or not so we actually got it off your friend, wasn't it, who had just given birth beforehand, but she tried breastfeeding and it never worked out so we actually got a brand new bottle and pump.' (ID 2181. Antenatal interview. Significant influences: self and media. Breastfeeding stopped in 1st week).

3.7. Maintaining feeding behaviour

Only one woman in the study breastfed exclusively for more than 24 weeks, with around half of mothers partially breastfeeding at six months, and more than half introducing solids by 20 weeks. Although exclusive breastfeeding and the late introduction of solids were priorities for a few families, the focus for most was on balancing breastfeeding and family wellbeing, achieved by adopting a flexible approach for example, using formula milk occasionally for convenience (Hoddinott et al., 2012). Analysis suggests four overt or covert ways linked with the feeding journey which explained how significant others and situations helped maintain current feeding behaviour: 1) supporting current behaviour, 2) preventing behaviour change from being considered or taking place, 3) deciding to postpone behaviour change, and 4) rejecting behaviour change (Table 3.2).

3.7.1 Supporting current behaviour and preventing behaviour change.

When partners were named as a significant influence on maintaining breastfeeding, women's narratives described them as providing practical and emotional support, sharing household responsibilities, looking after older children, and valuing breastfeeding. Study data suggested that partners who helped most to prevent behaviour change were those who did not want to feed the baby themselves but who provided help to allow women to focus on breastfeeding.

Woman: 'he's given me great support by looking after the kids and running after the house, I wouldn't have been able to do it if he hadn't of been as obliging. ...if he [partner] hadn't of been here he [baby] would have been right onto the formula.' (ID 1010. Interview 3 weeks after birth: exclusive breastfeeding. Significant influences: self, partner and mother).

Partners could be described as influential, but not be named as a significant influence when specifically asked at the end of the interview.

Woman: 'especially in the early days I was ready for formula feeding ... he [partner] keeps reminding me of the benefits... certainly I think without that support and having him around, I would've just said, "right, enough's enough" and given her a bottle.' (ID 2103. Interview 5 weeks after birth: breastfeeding, with formula introduced at 3-4 weeks. Significant influences: friend and sister-in-law).

This study confirms the importance of support from female relatives and friends in preventing behaviour change, thereby helping women to maintain exclusive breastfeeding. Women's narratives described female friends and family offering personal experiences and tips and being particularly trustworthy if they had a similar perspective on feeding or had experienced similar problems, rather than 'sailing through'. Baby and breastfeeding groups sometimes provided a new source of friends with similar preoccupations to act as positive role models and reinforced motivation, particularly for those lacking a ready-made network of friends who had breastfed.

Woman: 'the feeding group, there was a time ...where I was beginning to think, "I'm going to have to do something, I can't keep getting up every two

hours every night”, but to hear from other people that it does calm down, “it will get better, just hang in there” is really, really helpful and that's what's got us through that I think.’ (ID 2057. Interview 19 weeks after birth: breastfeeding, with solids introduced at >16 weeks. Significant influences: women at baby group and health visitor).

Women recounted the positive impact of female friends and family who offered empathy, reassurance and helped build confidence to continue breastfeeding. Mothers and occasionally mothers-in-law with positive experiences of breastfeeding were described as a vital source of emotional support and encouragement, the ‘go to person’, who says ‘it is hard the first couple of weeks but you’ll get there’. Some mothers and mothers-in-law were overtly named as a positive influence on feeding; others were a covert influence, providing practical help, ‘filling the freezer’, Hoovering and washing. A few women used on-line forums as a source of support and information.

Woman: ‘my mum obviously gives you the rally along the phone line, he’ll get there, not to worry, which is true he is, slowly but surely.’ (ID 1010. Interview 3 weeks after birth: exclusive breastfeeding. Significant influences: self, partner and mother).

Woman: ‘Netmums, as well, I used quite a lot ... at the start I remember putting a forum up of being quite frustrated and confused at the negativity I was getting at feeding from [partner’s] family. ... Because it’s a mums’ website, there are so many people who have just been like, “look, you’re doing the best”...’ (ID 2128. Interview 24 weeks after birth: breastfeeding, with formula introduced in 1st week and solids at 17–20 weeks. Significant influences: self, partner, mother and media).

The narratives of younger women suggested that relatives and friends were easier to approach than health professionals, who were described as ‘busy’, so ‘you don’t want to bother them’. Where women named a health professional as significant in supporting continued breastfeeding or preventing behaviour change at a pivotal point, interview narratives often described care which was accessible and woman-centred, offering understanding and respect for women’s viewpoints. Study data suggested that pro-actively offered practical help and encouragement built women’s confidence, when health professionals ‘show interest in the baby and make me feel important’, ‘always listen’, and take time. The researchers’ interpretation is that women’s lack of confidence in initiating contact with health professionals reduces the potential for impact on behaviour change. Women whose narratives showed a preference for a breastfeeding-centered approach and who wanted to achieve optimal breastfeeding behaviour were ‘adamant’ they would breastfeed, preferred a health professional who appreciated their perspective and ‘keeps talking about the benefits of breastfeeding’.

Woman: ‘I can’t sing her [health visitor’s] praises enough, ... she’s always open to listen to anything really, and she will not be negative if, for instance, I’ve said, “I don’t really know how much longer I can feed him” or whatever, and she’ll just chat with you, you know, she won’t sort of preach to you kind of thing. She’s really good.’ (ID 2192. Interview 10 weeks after birth:

breastfeeding, with formula introduced at 5-6 weeks. Significant influences: health visitor).

Woman: 'she's [health visitor] so... everybody is when you say you're breastfeeding, they're like, "yes" - you know very supportive of that. She definitely is.' (ID1033. Interview >24 weeks after birth: breastfeeding, with formula introduced at 13-16 weeks and solids at 17-20 weeks. Significant influences: partner, health visitor and mother).

Data suggested that the influence of tangible situations was sometimes mitigated by maternal confidence and/or previous experience of breastfeeding, preventing the introduction of formula milk or solids or an end to breastfeeding. Whereas a baby's admission to a special care unit, or a mother's mastitis might spell the end of breastfeeding for an unconfident first time mother, those with experience were more likely to be able to overcome problems and maintain breastfeeding. Data support the findings of others that confidence, experience and feeling supported are themselves positively perceived situations which are related to successful breastfeeding.

Woman: 'He's [partner] a huge help, when he's around I feel more confident strangely. I feel more confident, I can leave things in the morning, go and sleep. If baby wakes up in the night, if he hears from the monitor, he goes and attends to the baby without me knowing. ...He does anything to help, anything.' (ID 1054. Interview 15 weeks after birth: breastfeeding, with formula introduced in 1st week. Significant influences: sisters and baby).

3.7.2 Postponing behaviour change

Influences on postponing solids was a strong theme in the data and occasionally postponing the introduction of formula milk. Accounts of the lead up to introducing solids, particularly from first time parents, described information gathered from a wide variety of sources, including family and friends, health professionals and the internet. Sometimes this information led to the postponement of solids until around six months, particularly amongst older women with higher education, who were keen to 'follow the guidelines', or who were experiencing tangible situations which supported 'holding off' such as the baby 'putting on loads of weight just being breastfed'. Whereas some women's narratives described a baby's increase in night waking as a reason to introduce solids, others adopted a strategy of postponement, introducing more breast or formula feeds, or hungrier baby milk.

Woman: 'Well I was keen to wait until the six month mark [before starting solids]. Our sister-in-law, ... she always said to wait to six months, ...she had done a bit of research about how their gut's more permeable when they're younger and when you wait until six months it's better in terms of not getting allergies ...so I kind of paid a lot of attention. ...The one thing was he still doesn't go anything like sleeping through the night, and I know some people think that if you wean them earlier it might help with the sleeping, but I didn't think that would probably be the case because... I kind of thought, well there's more calories in milk.' (ID 1108. Interview >24 weeks after birth,

breastfeeding, with solids introduced at >24 weeks, formula not introduced. Significant influences: health visitor and sister-in-law).

Woman: 'And I've had him weighed and his weight gain and everything is exactly as he's been all along, so I'm quite happy with how things are going. ... I tried solids at six months.' (ID 1056. Interview >24 weeks after birth: breastfeeding, with formula introduced at 21-24 weeks and solids at >24 weeks. Significant influences: sister, mother, friends and women at baby groups).

3.7.3 Rejecting behaviour change

Rejecting behaviour change was most apparent in the accounts of women who named themselves or the baby as the strongest influence on feeding, were confident and committed to breastfeeding, had breastfed successfully before, or were finding breastfeeding 'easy', with a baby who 'took to the breast like a pro'. As serial interviews progressed, an increase in confidence became apparent, with some women naming 'self and baby' for the first time when babies were older. Their confidence allowed them to reject suggestions for changing feeding behaviour from partners who questioned, 'is breast milk is enough?' or were less enthusiastic and said, 'just give him a bottle' or from health professionals who were concerned about the baby's health.

Woman: 'I think he [partner] wishes I wasn't [breastfeeding]... he maybe feels a bit sort of put on the back shelf... he said, "I cannot remember the last time that we went out and had a night out on our own without the children", ... I just think it puts a bit of pressure on sometimes.' (ID 2056. Interview 13 weeks after birth, exclusive breastfeeding. Significant influences: self & baby).

Woman: 'they just said to me, "put him on formula feed" because they didn't think it would be successful for me to feed him with his weight loss, and I didn't want to do that. ... when they came back at 23 days one of the first things they said was, "did you put him on formula?" and I said, "no"... But they were overjoyed that he'd put weight on, so I think they realised that my decision was good. (ID 2295. Interview 4 weeks after birth: exclusive breastfeeding. Significant influences: self and health visitor).

3.8. The lead up to behaviour change

From interview narratives, nine ways in which significant others, the woman herself and her baby and situations could trigger the lead up to behaviour change were identified: 1) anticipating that feeding change might happen, 2) expecting change to take place, 3) considering and weighing up the pros and cons of change, 4) planning, 5) preparing, and 6) precipitating change, 7) advising or recommending change, 8) endorsing or 9) approving of feeding change, resulting in the introduction of formula milk or solids, or breastfeeding stopping. In accounts, there were subtle differences in who was the initiator of the process leading up to behaviour change. It could be the woman, another person or the situation, with the latter a particularly strong influence for precipitating behaviour change.

3.8.1 Anticipating, expecting, considering, planning and preparing for behaviour change

In postnatal accounts these influences were very similar to those described in Section 3.6 for feeding intentions in pregnancy. The narratives of women who were experiencing difficulties with breastfeeding anticipated the possibility of stopping breastfeeding to solve problems with feeding or to achieve the widely desired perceptual situations of 'feeling in control' and 'getting into a routine'. Stopping was also considered when partners did not want to see them 'upset' and 'sore'. Emotional equilibrium, current physical health and wellbeing were the goals that determined behaviour rather than the long term benefits of optimal feeding (Hoddinott et al., 2012).

Woman: 'I think if he could settle into a wee routine that would make all the difference. Like this morning we thought, right, we'll get up, we'll get ready and go out for a walk, but he's fed all day so you're like, right, "Oh we're stuck in the house all day with this baby kind of stuck to you". ... I can understand why some people wouldn't have the patience for it.' (ID 2003. Interview 3 weeks after birth: breastfeeding, with formula introduced in 1st week. Significant influences: sister and self).

Woman: 'My partner's very supportive of me, when he sees me in pain he thinks I should knock it on the head [laugh] and go on to formula, so he's just worried about me.' (ID1057. Interview 8 weeks after birth: breastfeeding, with formula introduced in 1st week. Significant influences: partner, health visitor, GP and mother).

Reasons for expecting change were similar to those for anticipating change: problems with breastfeeding, and a desire to obtain physical or emotional equilibrium, or babies considered nearly ready for solids, sometimes following the example of older children.

Woman: 'it's like she's wanting fed almost every hour, so either she's not getting enough, or I'm not producing enough, one or ... I'm wanting to try and keep it up. Because he was breastfed for six weeks. If I can get to six weeks, which I would prefer to get to, because the first six weeks is crucial, if I can get to then, and things still aren't working out, I'll just put her on formula like I did with him.' (ID 2287. Interview 5 weeks after birth: breastfeeding, with formula introduced at 3-4 weeks. Significant influences: self and friend).

Woman: 'Well, the other two kids were weaned at four months, and [the baby] is four months today. [Older child], when he was that age, he was needing something else, he had moved on to SMA White and he wasn't really taking that many bottles. But she seems quite satisfied with the milk at the moment. But maybe by the next time we speak I'll have tried some. (ID 2047. Interview 17 weeks after birth: formula feeding throughout. Significant influences: self).

Some narratives prior to the introduction of solids described looking forward to moving on 'to the next stage' of feeding, involving the baby in family meals and 'building up' from one 'runny' meal to three 'lumpier' meals a day. Others anticipated 'baby-led weaning', 'instead of pureeing everything, putting some food in front of them, they'll pick up some sticks of steamed carrots'. Multiparous women described situations in which previous experience was influential, with other babies 'starting to get up at night and wanting more food' and anticipated that this baby might do the same. Family accounts showed that solids were also looked forward to as a way for partners to be more involved, both in preparing food for the baby and feeding him/her. Influences sometimes accumulated over time after canvassing a wide range of views. However, considering solids did not always mean that they were introduced rapidly thereafter, rather the timing depended on the interplay of a complex range of factors, including the desire to 'follow the rules', parental interpretation of the baby's readiness for solids, experience with previous children and attitudes to solids within the wider network. For the introduction of solids, anticipating situations seemed more influential than significant other influences.

Partner: 'I think we wanted to do it [introduce solids] probably about two or three weeks before we actually did do it, we were really looking forward, "is she not four months yet?" because it was like, "this is driving me crazy" because it's almost like sitting there with her plugged in constantly all day, that's what I felt, she was always hungry.' (ID 2294. Interview >24 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped at 21-24 weeks and solids introduced at 16 weeks or less. Significant influences: baby, health visitor and women at baby groups).

Being practically prepared and planning to introduce solids was particularly evident, with positive experiences described around purchasing blenders, bowls, spoons and comparing these amongst peers, with these situations reflecting the consumer society. Emotional preparation, with anticipation of the next developmental stage was also evident.

Woman: 'the next thing to think about is weaning, so ... I mean it's a wee while, she's not even 3 months yet, but you still start to think, 'Well, I wonder when that'll come? ... She seems to be fine with her milk, so I don't think it'll be any time soon, but better to be prepared.' (ID 2039. Interview 12 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped at 3-4 weeks. Significant influences: partner, mother, father, sister-in-law and friend).

3.8.2 Precipitating behaviour change

Precipitating behaviour change is defined as situations or significant others causing change to happen or hastening its advent and this was a widespread theme in the data. Some people were named as overt influences when they suggested changes to feeding behaviour for example, when health professionals recommended starting solids; for others significant others and situations which precipitated feeding behaviour change were apparent in interview narratives, but were more covert.

Partners' views or women's perceptions of their partner's views were an important precipitant of behaviour change. Some partners in 'share everything' couples were keen to be involved in feeding, not wanting to 'be left out', or wanting to take some of 'the strain' or 'make meals for us and puree a bit for the baby'. Likewise, some women wanted their partner to play a part, and were planning to express milk or use formula to allow him the opportunity to bond with the baby, and themselves some 'freedom' (Hoddinott et al., 2012). Such partners may be named as a significant influence when breastfeeding stops or solids are introduced. They are less likely to be named if their attitude to feeding differs from that of women, or if the change they suggest is not successful for example, starting the baby on solids to get more sleep. The researchers' interpretation is that when the desire for fathers to be involved coincides with feeding problems and an end to breastfeeding, sharing may provide a socially acceptable resolution to behaviour change which maintains the family self-esteem and avoids the woman feeling a sense of failure.

Partner: 'certainly feeding him out of the bottle isn't - I find I can get more involved with it, whereas if it's breastfeeding, that's purely down to mother and baby and that's a mother and baby thing and you tend to get left out.' (ID 2061. Interview 2 weeks after birth: breastfeeding, with formula introduced in 1st week. Significant influences: midwife, self and partner).

Accounts of stopping breastfeeding and introducing solids sometimes showed these changes to be precipitated by partners' desire to mark the baby's progress, and to symbolise the move from baby to active personhood, with the baby 'growing up' and 'moving forward'. The researchers' interpretation is that such changes are influenced by the desire for positive perceptual situations such as pride and reassurance that babies are reaching developmental milestones on time.

Partner: 'from the outside I thought... it felt right [stopping breastfeeding]. It felt like a natural step to take at the time, because she's getting our little girl now rather ... and she's onto her solids now and everything was moving forward.' (ID 2294. Interview >24 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped at 21-24 weeks and solids introduced at 16 weeks or less. Significant influences: baby, health visitor and women at baby groups).

Study data showed that women often named themselves or the baby as significant influences when problems with breastfeeding precipitated feeding behaviour change, such as the baby not latching, wanting to feed 'non-stop', or failing to gain weight. The researchers' interpretation is that the baby may be named as influential by parents when they make feeding decisions which rather than being their choice seem to be the only response in the circumstances, or from which they wish to distance themselves because of 'breaking the rules' (Hoddinott et al., 2012) for example, introducing solids before six months. Unpleasant perceptions linked to situations which can prompt change, such as pain, the baby or mother being upset and 'running on empty' were also frequently described. Often a combination of situations, perceptual and tangible, combined to influence decisions, such as when the introduction of formula was precipitated

by 'starting a new job' but it also helped to resolve 'feeling negative towards breastfeeding' because you can't go out and it gave a partner 'more responsibility'. Other situations, such as social events or the baby's reluctance to take formula or bottles, could also lead to feeding change.

Woman: 'I'm just feeding myself, the only time he gets formula is... I had one night out, so he got formula then because obviously I'd had a couple of glasses of wine, but other than that he doesn't get it.' (ID 1226. Interview at 8 weeks: breastfeeding, with formula introduced at 2 weeks. Significant influences: self).

Woman: 'I've given up breastfeeding and put her onto the formula. ...I was going to give up the breastfeeding at six months anyway because I felt that would be enough. But I put her on two weeks ago now maybe, the reason being because she wasn't taking the formula, so I was continuously trying her with the bottle and when she did take it I just put her on it just in case she wouldn't take it again.' (ID 2037. Interview 24 weeks after birth: formula feeding, introduced at 9-12 weeks, breastfeeding stopped and solids introduced at 21-24 weeks. Significant influences: partner and self).

Study data also showed that change might be precipitated if friends and family failed to provide the help which women needed to maintain breastfeeding, 'someone to look after me, a mummy', or if women wanted help but found it difficult to ask for.

Woman: 'The people at the breastfeeding support group were very supportive, they were suggesting getting a sort of daily support kind of organised. ...there's a part of me doesn't want to seem like I needed to run to people for help... The one person I would've probably called on has been away this week... So I've decided [to stop breastfeeding].' (ID 1173. Interview 6 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped at 3-4 weeks. Significant influences: baby).

Health professionals were often described as an important influence in the early postnatal period, precipitating the introduction of formula or stopping breastfeeding. Sometimes health professional influence was overt, with their 'guidance' described and they were named as a significant influence. However, often it was covert, with parents naming themselves as influences on decisions, sometimes after discussing the options with a health professional, but often following accounts of significant negative influences. Women described situations in which staff were 'too busy' to offer the help that they needed, to sit with them through a feed and 'teach proper breastfeeding techniques'. They disliked having to 'continually go over' problems with different staff, and helpers who used 'the old school method: "grab baby and mash onto breast"', or 'didn't have the experience or the patience'. Emotional distress was widely described, with words such as 'pressure', 'worry', 'upset' and 'distress' frequently used in accounts of the early postnatal period, with infrequent mention of specialist help available with breastfeeding. Parents in this position could regard decisions to make feeding changes as theirs alone, in the context of midwifery protocols which emphasise parental choice: 'you have to ask for it [formula milk] ... you

have to be the one to initiate it'. However, the researchers' interpretation is that the tangible and perceptual situations were an important influence.

Parents detected certain situations which caused particular anxiety for staff, and in consequence for them, and this could lead to feeding change. Examples included whether the baby was 'getting enough milk'; 'how long the baby can go' without being fed and weight loss after the birth, with midwives advising expressing milk or giving formula 'top ups' to allay concern. There was additional pressure when an early discharge was planned, but when the ideal would be to establish breastfeeding first. Midwifery advice about not mixing breast and formula feeding also set the tone for parents, sometimes leading women to believe that they must stop breastfeeding if a formula supplement had been given. It appeared that concern to avoid nipple confusion, thought to lead babies fed by bottle to reject the breast, had been interpreted by some staff as 'once the baby has sucked from a teat s/he shouldn't be offered the breast in case s/he won't take a bottle'.

Woman: 'I think there was too much pressure to get to feed your baby straight away when I think neither mum nor baby were actually ready for that, and I found... I was under pressure to use the pump and to top up with formula, it's almost like straight away and I wanted to try just using the breast only...' (ID 1210. Interview 5 weeks after birth: breastfeeding, with formula introduced in 1st week. Significant influences: self).

Partner: 'I said, "How long can she go not feeding before it's like ... we're pressing a red button here and something needs to happen?" And she [midwife] was a bit vague about it to be fair, because I thought she was going to say, "you've got 18 hours before she feeds or you've got 24 hours or you've got four hours", I didn't know. She went, "ah well, we really need to see her feeding". So anyway we came home [from the maternity hospital], we force fed her almost [laughs] out of the bottle before we went to bed, she didn't take very much at all, just a tiny amount...' (ID 2294. Interview 2 weeks after birth: breastfeeding, with formula introduced in 1st week. Significant influences: health visitor).

The researchers' interpretation is that these situations and interactions with health professionals, which reflect how health services are organised and perform, precipitate considerable behaviour change. First time mothers who lack confidence and positive role models and worry about 'knowing how much he's getting' are most vulnerable to behaviour change in the early postnatal period.

Some women found the early postnatal stage particularly difficult because of their isolation in hospital without partners, who 'don't get to share or support you in any part of it because they're not there'. The environment could be a key situation influencing behaviour, with 'getting out' to the 'comfort of my own home' sometimes precipitating feeding change. A longer hospital stay may be advised 'to get breastfeeding established', but insensitivity to a woman's desire to be at home may be counterproductive, leading her to change to formula.

Woman: 'When I decided to go to the formula... I'd say again myself [as the significant influence], because that was kind of my own decision, influenced by the midwife, as I said, because I wanted to get home on the Friday, had my hopes built up, she then said to me "it wouldn't be very professional of me if I let you home knowing that she wasn't taking to the breast milk "...'
(ID 2203. Interview 3 weeks after birth: formula feeding, breastfeeding stopped in 1st week. Significant influences: self and midwife).

Several examples were recounted of missed opportunities to provide health professional support, particularly with observing feeds and helping mothers to get their babies feeding comfortably, which might have prevented behaviour change. When women noticed that opportunities to help them had been missed these situations could trigger emotions which then precipitated feeding changes.

Woman: 'I was just in a panic because we'd met one health visitor on the Friday and she'd gone on holiday, and then it was another one who was coming on the Wednesday and then you sort of don't want to ring because you don't really know who the person is.' (ID 1167. Interview 4 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped 3-4 weeks. Significant influences: self).

Health visitors or members of their team occasionally precipitated the introduction of solids by parents who were keen to follow feeding guidelines and wanted her to say 'the baby is ready', thus approving and endorsing behaviour change (Section 3.8.4). However, it was more often the other way around, with parents' precipitating change, and health visitors suggesting 'holding off as long as possible' but waiting until '17 weeks at the very earliest'.

Woman: 'He was wanting fed every hour... so that was quite tiring. Because I was just going to keep persisting but then when I asked her [the health visitor] she was like, "No, just start him on the solids".'
(ID 1176. Interview >24 weeks after birth: breastfeeding, with no formula introduced and solids introduced at 21-24 weeks. Significant influences: self and health visitor).

A wide range of situations prompted the introduction of solids. Narratives described perceptions of the baby's need for more food, and parents' desire for more unbroken sleep as influential situations, as well as experience with an older child and the desire to see 'how the baby reacts' to or copes with new tastes. Study data showed that a few parents preferred solids to formula milk when the baby appeared to need more sustenance, feeling that it would be better for them, or to avoid introducing formula or bottles.

Woman: 'he was just non-stop eating though as if the milk wasn't satisfying him anymore. So I thought will I give him a wee bit of formula to top up or will I just give him a wee bit of solids to see? And I thought well, solids... I thought there's probably more crap in formula milk than there is in a pear.'
(ID 2169. Interview 16 weeks after birth: breastfeeding, with formula introduced at 13-16 weeks and solids at <16 weeks. Significant influences: self and baby).

Woman: 'I've started introducing solids. ...She was five months on Monday there ... When I first started weaning [older daughter] she was only four months, and then they said when I had [son] to wait till six months and he never lasted that long either.' (ID 2047. Interview 21 weeks after birth: formula feeding from the start with solids introduced at 17-20 weeks. Significant influence: mother).

Partner: 'I gave her some more [banana] as well...the medicine she'd had was allegedly banana flavour...I was kinda, not worried by any stretch of the imagination, but thinking is she forever now going to associate that taste....with the medicine....would she be put off bananas? But she didn't appear to be put off anything that day.' (ID 1033. Interview >24 weeks after birth: breastfeeding, with formula introduced at 13-16 weeks and solids at 17-20 weeks. Significant influences: partner, health visitor and mother).

Situations such as meeting the needs of older children could be seen to act as covert influences precipitating change in practice. Situations like this are interesting, as parents prioritise and respond differently. Some families anticipated situations like older child bedtime or meal rituals and changed them enabling breastfeeding to be maintained. Others preferred to put the needs of the family first.

Woman: 'we made the decision together about whether to give him the extra bottle at bedtime and decided that that would work well for us, especially because [older child] likes me to put him to bed, so it gives me a chance to get him to bed while [partner] gives the baby a bottle.' (ID 1075. Interview 8 weeks after birth: breastfeeding, with formula introduced in 2nd week. Significant influences: health visitor, partner and friend).

Once formula or solids have been introduced, significant others and/or situations often reinforced the behaviour change. Decisions to reverse the behaviour change were rare and more likely to occur with the introduction of solids. However, more often the behaviour continued and could lead either gradually or quite quickly to another pivotal point where breastfeeding stopped.

Woman: 'I didn't think he was getting enough food, so that's why we introduced the bottle. And we've just kept it going because it helps my partner bond better with him and plus my kids can feed my son as well.' (ID 1208. Interview 3 weeks after birth: breastfeeding, with formula introduced in 1st week. Significant influences: partner and self).

3.8.3 Advising or recommending behaviour change

Women described members of the female network, and health professionals advising, or recommending, behaviour change. Some family members and friends said, 'give her food', or, 'the main thing is making sure the baby's getting enough to eat', and advised not 'jumping over hurdles to give the baby breast milk', based on their own experiences. Mothers and mothers-in-law were more likely to favour introducing solids before six months in line with what they themselves had done. The researchers' interpretation is that such advice led to

change when it came from a trusted source, often mothers or sisters, and was in keeping with women's own intentions. When it was not, advice from mothers and mothers-in-law was ignored as being from '40 years ago' when 'things were a bit different'.

Woman: 'My mum said she started feeding all of us when we were three months old, she placed us on solids, so she suggested that I did the same when she was about four months, which is the acceptable period, ... So she gave me a lot of encouragement.' (ID 1148. Interview >24 weeks after birth: breastfeeding, with formula and solids introduced at 17-20 weeks. Significant influences: partner and friend).

Narratives also described health professionals advising change, both in relation to introducing formula, or giving more formula, and solids. They said 'give him extra bottles if he seems particularly hungry', or 'have a plan B, try a bit of both'. As with the female network, advice was more likely to be followed when it came from a health professional with whom women had a relationship, referring to them by name or as 'my health visitor', and if it 'confirmed' women's intentions.

Woman: 'It's been good to have advice from the health visitors ... it's been helpful when I've sort of said to them about him not settling and that I thought he was still hungry, it was quite good that they said, "yes, you feel he's hungry then give him a bottle, that's fine". Yeah, I found it good that they gave me that kind of support.' (ID 1075. Interview 8 weeks after birth: breastfeeding, with formula introduced in 2nd week. Significant influences: partner, health visitor and friend).

Woman: 'Tuesday my health visitor was in and I'd kind of said to her, because at that point it seemed to be every day he just got worse, he wanted to feed for longer and more often; and she'd said, "well why not try mixed feeding and do maybe one breastfeed, one bottle feed or feed him for a wee while on the breast and then give him a couple of ounces"?' (ID 2003. Interview 6 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped at 3-4 weeks. Significant influences: sister and health visitor).

3.8.4 Endorsing or approving a proposed behaviour change

Endorsing is defined as stating one's approval of, or support for a decision that is about to be made. Women described receiving endorsement, or permission from friends, family and health professionals before changing behaviour. They were given endorsement for introducing formula: 'my friend has encouraged me if I wanted to give a bottle, to give myself a break to do that'; stopping breastfeeding: 'we all felt that we'd tried breastfeeding for long enough'; and being told by the health visitor 'he's definitely ready' for solids. This may reassure women and help them deal with feelings of guilt and distress, as they try to resolve the conflict between their feeding ideals and what they are now proposing to do.

Partners were an important source of endorsement for feeding changes, helping women 'to feel comfortable with formula feeding', giving 'reassurance that it's the right thing to do for me and the baby' and supporting the introduction of solids.

Amongst sharing couples, decisions were often taken 'together', with endorsement built in. Partners were often named as the most important influence on feeding when a change was made.

Woman: '... he's [partner] been very supportive of my issues around finding it difficult to express milk for when I'm going out. But also he's very supportive of the fact that I need to go out because I need to do something for me as well, and supportive of the thoughts I've been having about I don't want to give my baby formula milk in the first six months of his life, but actually it's okay ...' (ID 1188. Interview 15 weeks after birth: breastfeeding, with formula introduced at 9-12 weeks. Significant influence: partner).

Woman: 'I suppose with me stopping the breastfeeding it was almost like I needed permission to stop from [partner] and from the health visitor.' (ID 2039. Interview 7 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped at 3-4 weeks. Significant influences: partner and health visitor).

Woman: we sat and we discussed it and I was, 'I think she needs solids, she's like he was', and he said, 'Aye, I've been thinking that for a couple of days myself', and I was like, 'D'you want to start tomorrow?' and he goes, 'Aye, I think that would be best'. (ID 2287. Interview 17 weeks after birth: formula feeding introduced at 3-4 weeks, breastfeeding stopped at 7-8 weeks, solids introduced at 16 weeks or less. Significant influences: partner).

Interview narratives showed that reassurance and approval from family and friends was also sought when women contemplated breaking the feeding rules or trusting their own judgment on feeding, wanting someone to say, 'you've done the right thing, that's fine', to increase their confidence and self-esteem. Women often named people whose views matched their own, or were 'doing the same thing as me', choosing them as a significant influence in preference to those whose advice differed, and sometimes choosing a different significant influence from usual.

Woman: 'she [sister] thought he might be ready [for solids] at four months. She said if he's showing signs, try this, give him something don't just... it was kind of if you're not comfortable with what anybody else is advising you, it's your baby and do what you want.' (ID 1094. Interview >24 weeks after birth: breastfeeding, with formula introduced at 7-8 weeks and solids at 17-20 weeks. Significant influences: partner, sister and mother).

Likewise, health professionals were frequently named as a significant influence when they endorsed plans to introduce formula, start solids, or stop breastfeeding, giving permission to 'do what's right for you', rather than follow the rules or ideals (Hoddinott et al., 2012). The researchers' interpretation is that woman-centred care seems to increase the likelihood of a health professional being a significant influence when it endorses whatever feeding decisions the mother makes and thus has a positive effect on her confidence and wellbeing.

Woman: 'The health visitors have been particularly good. I wasn't sure about a couple of things because he was quite a big baby and he was actively looking for food quite early on, and they agreed it would be a good time to start weaning, it wasn't at six months, he started earlier.' (ID 1057. Interview >24 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped at 9-12 weeks, solids introduced at 17-20 weeks. Significant influence: health visitor).

3.9. After behaviour change

In the narratives, once feeding had changed, five different types of influence from significant others or situations were seen in response: 1) resolving, 2) endorsing, 3) approving, 4) disapproving and 5) reversing behaviour change. This is important because how behaviour is resolved, rationalised or perceived influences the stories that are told within social networks and how women feed subsequent children.

3.9.1 Resolving, endorsing or approving behaviour change

Resolving is defined as taking away, or dispelling doubts about behaviour change. In particular, women looked for help to resolve or justify feeding changes once made, in the same way as they sought endorsement and approval before making them, as described in Section 3.8.4. The researchers' interpretation is that whether a significant other was continuous or different from before to after a pivotal point where behaviour changed depended on who was most likely to maintain the woman's confidence, self-esteem and family wellbeing (see Section 3.5 and Table 3.4 and Appendix 4).

Partners were sometimes influential in resolving feeding changes. Partners of women who were experiencing distressing perceptual situations, such as pain or difficulty latching the baby at the breast, encouraged them to end 'all the stress and strain' of breastfeeding, justifying the change as being in the best interests of family wellbeing. Sometimes partners were named as a significant influence on change, or their increased involvement in actively giving formula or solid feeds was used to resolve the change. A shift in values was evident for some, with a move towards the value of partners' bonding with the baby and away from the theoretical longer term benefits of exclusive breastfeeding.

Woman: 'I think one of the positives about the bottle feeding is [partner] gets to play more of an active part, so when I was breastfeeding he was very much sort of surplus, you know, just sort of hanging about, not quite sure what to do. And he was really quite unsure, but see now that we're bottle feeding he's more involved and he's much more confident which is good as well.' (ID 2181. Interview 2 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped in 1st week. Significant influences: midwife).

Women recounted hearing the experiences of relatives and friends which helped them to feel 'less guilty' about giving formula or starting solids early, and made them realise 'the amount of people who offer a top up bottle'.

Woman: 'I spoke to my sister-in-law as well, and what I didn't realise was that she actually breastfed in the morning and night but gave formula during the in between, ...and I suppose that probably made me feel a little bit more... or I didn't feel as bad about the fact that I had given him formula all of about twice.' (ID 1226. Interview 3 weeks after birth: breastfeeding, with formula introduced in 2nd week. Significant influences: midwife, self and partner).

Just as women's self-confidence grew with successful breastfeeding, women described how changing to formula feeding could help them to feel more confident and in control for example, by establishing routines and this improved perceptual situation justified the change. Sometimes women named themselves as a significant influence when this happened, saying that they 'haven't needed help' and 'feel more confident' now. Putting the emphasis on the baby's wellbeing as the significant influence, 'what she's needed' was often described when behaviour changed away from the ideal feeding method. Change was resolved if the outcome was a happy, 'thriving' baby who had gained weight on formula or solids. Sometimes the baby was named as the significant influence on change, or others were named, with the baby's health and wellbeing as covert tangible and/or perceptual situations underlying the change.

Woman: 'I'm still disappointed it didn't work out. But he's putting on weight well and he's happy, he's growing well, so ... and he's now at the stage that we're getting smiles and we're getting a bit more interaction, so as long as he's healthy, I guess that's the main thing.' (ID 2061. Interview 9 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped 5-6 weeks. Significant influences: baby, health visitor and GP).

There were accounts of health professionals helping to resolve change, supporting decisions to give a 'crisis bottle' or to stop breastfeeding or to start solids.

Woman: 'They were just supportive ... they said whichever decision you decide to make, you know, it's up to you... and said, "well at least you did it to begin with".' (ID 1167. Interview 19 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped 3-4 weeks. Significant influences: partner, health visitors, mother, mother-in-law and women at baby groups).

Woman: 'I was giving him top up feeds with formula and they [the midwives] weren't very happy about that but I just wouldn't survive really if I wouldn't be able to give him formula because he's just screaming because he's hungry. ... I didn't feel that was very helpful advice and the health visitor agreed and she thought that if I felt he needed extra and that was helping me, then that was probably the right thing to do.' (ID 1075. Interview 19 weeks after birth: breastfeeding, with formula introduced in 2nd week. Significant influences: partner and health visitor).

3.9.2 Disapproving of behaviour change

Women who had changed their feeding behaviour occasionally described people who were critical of them for introducing formula or solids, or stopping breastfeeding. A few partners said, 'why do you want to give her formula milk?' or 'I'm not keen, I don't even like the smell of the stuff' when asked to give the baby a bottle. Friends who followed what they perceived as feeding rules (Hoddinott et al., 2012) sometimes disapproved when women broke them.

Woman: 'One of my friends doesn't agree with starting to feed her so early, just about her kidneys and how these baby foods say that they're suitable from four months but they're not really and all this sort of stuff, but I just think that every baby's different and if the health visitor's saying that it's fine for her to have a wee bit, then that's fine.' (ID 2181. Interview 22 weeks after birth: formula feeding introduced in 1st week, breastfeeding stopped in 1st week and solids introduced at 17-20 weeks. Significant influences: health visitor).

Although some health professionals helped to resolve behaviour change by being woman-centred, breastfeeding-centred health visitors might say, 'oh dear' on hearing that breastfeeding had stopped or solids started. When the advice they gave was not what women want to hear, women sometimes resolved behaviour change by avoiding health professionals who 'aren't human about it', 'not listening' and 'doing it myself', keeping the introduction of solids 'a guilty secret'. The researchers' interpretation is that health professional disapproval decreases both family trust and contact with health professionals, and in consequence, health professionals' opportunity to influence behaviour for that family and with a potential ripple effect through their social network.

Partner: 'I was giving him [toddler] some dinner at 3 1/2 months ...and I never telled anybody, until it was months later and we realised everything was alright, because I ... knew I'd get criticised, "Oh no, it's 4 months".' (ID 2287. Interview 24 weeks after birth: formula feeding introduced at 3-4 weeks, breastfeeding stopped at 7-8 weeks, solids introduced at 16 weeks or less. Significant influences: self & partner).

3.9.3 Reversing behaviour change

Occasionally parents reported changes to feeding, such as the introduction of formula or solids, which were later reversed. Formula was sometimes introduced, either on one occasion only, as in the quote below, or was given less frequently as breastfeeding became established.

Woman: 'the midwife suggested, "do you want to give him a bit of formula just to give him something to eat"? And I was more than happy because I'd rather, yeah I wanted to breastfeed him, but I wanted him to have something because he was sleepy he wasn't taking it from me, he just wasn't latching on properly. So he got a wee bit of formula at night and then Monday morning it was a completely different baby.' (ID 2128. Interview 2 weeks after birth: breastfeeding, with formula introduced in 1st week. Significant influences: mother and midwives).

Women described introducing formula or solids to deal with difficult tangible or perceptual situations, such as a lack of sleep or frequent feeding, or to follow what was done with an older child. These strategies were reversed if they did not have the desired effect, or other factors intervened for example, if the baby became constipated or 'did not like it', or a partner was away, making it difficult to continue with solids, or the effect of baby rice was to 'actually wake her up'.

Woman: 'she like kind of cluster feeds in the afternoons unfortunately, so she's feeding every two hours or something in the afternoon... We've tried to introduce a bottle of formula but that hasn't gone so well because it gives her a really sore tummy.... so, against my will, I've been expressing milk again [laugh]'. (ID 1040. Interview 9 weeks after birth: breastfeeding, with formula introduced at 3-4 weeks. Significant influences: baby).

If they were using formula milk, parents reported changing from first infant milks to milks for hungrier babies, then reversing changes if these did not appear to have the desired effect or to be benefitting the baby, 'making her sick', or once solids were introduced. Sometimes parents recounted giving 'a tiny bit of banana' or other food 'to see what the baby does', if 'she can manage to swallow it' but without the intention of starting solids 'properly' at that point.

Interviewer: 'last time you were using the hungry baby formula?

Woman: Well, we've actually changed... We tried quite a few milks to get them right, we tried the lactose free and everything, but it didn't seem to work, but he seems to be a lot more settled on this milk now... Just a normal first stage milk.' (ID 1208. Interview 16 weeks after birth: formula feeding, introduced in 1st week, breastfeeding stopped at 9-12 weeks. Significant influences: partner).

4. Discussion

4.1. Overview of findings

This study examines the range of significant other and social network influences on infant feeding behaviour from late pregnancy until six months after birth, which lead parents to introduce formula or solids, or to stop breastfeeding prior to the recommended six months. It reveals that a complex and dynamic combination of people, situations and personal experiences influence feeding behaviour initiation, maintenance and change. Findings from this study extend existing knowledge by focusing on processes that maintain optimal feeding behaviour and lead up to and follow behaviour change. For women who maintain breastfeeding, change is supported, prevented, postponed or rejected by people, situations and experiences. In the lead up to pivotal points, the behaviour change processes include anticipating, expecting, considering, planning, preparing, precipitating, advising or endorsing change. People, situations and experiences also influence whether the feeding change is resolved by positive feedback, endorsement or approval, not resolved due to overt or covert disapproval or reversed. The ideal for families following behaviour change was to identify people or situations (for example, if the baby cries less or puts on weight) which make them feel better and less guilty, thus resolving any negative perceptions of behaviour change. This ties in with women's discourses and ideologies around being a 'good mother', which can lead to feelings of guilt. Health professionals who are woman-centred and endorse the woman's own decision making are valued as significant others as they help to resolve this guilt. Influences following behaviour change are important because how a behaviour change is perceived affects the stories that are told within social networks and how women feed subsequent children. However, there is very little in the literature about influences or interactions occurring after a change in feeding behaviour away from the ideal of exclusive breastfeeding until six months.

Significant others are a mediating or moderating influence on behaviour. Each woman was unique and for some, one significant other remained constant throughout the feeding journey, whilst for others, there were several significant others who changed over time. For the majority of women, the significant other or the number of significant others changed from before a decision to change feeding methods to after. This was greatest for the introduction of solids where more and different significant others were often named after the behaviour change. There was less change in significant others for before and after stopping breastfeeding. There was a tendency for women to attribute influence to the person who affirmed their own intentions and decisions in preference to someone whose advice differed, thus reinforcing their confidence and self-efficacy. The accounts of some partners were inconsistent over time in this study, suggesting some ambivalence or uncertainty about their feeding role, either as an actively feeding parent or supporting the woman to prioritise breastfeeding. Relationships varied from the 'share everything' feeding couple to the 'one man band' woman, with differing roles and values observed which bore little relation to infant feeding outcomes. The concept of couple or family efficacy emerged as important in maintaining optimal feeding behaviour for some, whereas the woman's self-efficacy was more important for others. Multiparous women were more likely to

cite themselves rather than others as the key influence and primiparous women cited themselves more as the baby grew older, suggesting increased self-efficacy. Of importance, the woman-baby dyad or the baby alone was often named as influential, particularly for introducing solids. How the woman's mother fed her babies is a strong influence on feeding behaviour (Bolling et al 2007). The nine women who stopped breastfeeding before six weeks were all primiparous and most had mothers who had not breastfed or who had difficulties breastfeeding. In this sample of women intending to breastfeed, the importance of health professionals as significant others is clearly established, particularly for first time mothers, with midwives named in pregnancy and at pivotal points in the early postnatal period and health visitors around the time of introducing solids. These health professionals could have positive or negative influences on feeding decisions and missed opportunities for influence were frequently identified particularly at pivotal points. Health professionals who endorsed behaviour change that contravened 'the rules' (Hoddinott et al., 2012) can be considered woman-centred rather than breastfeeding-centred and were sometimes named as a significant influence.

A large number of different tangible and perceptual situations are influential in addition to significant others. Unpleasant perceptual situations such as anxiety, pain and exhaustion are common for women after birth. For most parents the overriding aim is to maximise current emotional and physical wellbeing rather than the longer term theoretical benefits of exclusive breastfeeding for six months (Hoddinott et al., 2012; Hoddinott et al., 2010), and feeding is one of the few things which can be changed in an effort to control such situations. Tangible situations, such as caring for older children, social activities or events, a baby who is slow to gain weight, breastfeeding in public and returning to work also influence feeding behaviour. Tangible situations are particularly influential at pivotal points for introducing formula milk and solids. The dividing line between perceptual and tangible situations is not clear cut, with many situations involving both components to a greater or lesser extent. The perceptions of these situations are drivers for behaviour change and need to be considered in the context of the whole family or social network, not just the woman and baby.

4.2. Strengths and limitations

The strengths of this study are the serial interviews from pregnancy to six months postnatally with women intending to breastfeed and their significant others. These provided in depth narrative accounts of feeding close to the time of any behaviour changes, and this was triangulated by more structured data collection on significant influences and current feeding behaviour at the end of each interview. Having researchers from different backgrounds collecting data in two very different areas in Scotland adds rigour to the study and assisted with the search for disconfirming data in accordance with a grounded theory approach to qualitative research (Strauss & Corbin, 1990). Over seven months of serial interviews, a relationship develops between interviewer and interviewee, which impacts on the data collected and the analysis. Trust develops which can facilitate rich data however, it becomes more difficult for the interviewer to maintain distance and neutrality over time and to counteract this, two members of the research team had no contact with participants.

There were limitations with asking a repeated question, 'Who has had the strongest influence on your feeding decisions?' at the end of consecutive interviews. Importantly the question illustrates the researchers' a priori assumption that the most important influences would be people. However, asking the question, '*What* had the strongest influence?' would not have revealed the important changes in significant other relationships from before to after a pivotal point. The semi-structured interview data suggest that situations and their complex interactions with people are also crucial determinants of behaviour. Interviewees may have prepared for the question and responded less spontaneously as the study progressed. The ability of participants to articulate the thought processes around decision making and influence varied and there was evidence both of increased reflection over time, but also of difficulty unpicking feeding decisions in an interview situation. This is perhaps not surprising given that automatic, non-cognitive decision making is increasingly recognised and may be prevalent in women who are less educated (Chaiken & Trope, 1999). Study data may have been influenced by post-hoc rationalisations, for example, when a move to formula feeding led an interviewee to comment that she had breastfed to prove that she could, not because she really wanted to, as she had stated antenatally. As several significant others were present at the face to face interviews, this poses difficulties interpreting influence, as couples may interpret significant others as those not in the room. This could have resulted in interview participants being named less than they would have been if they had not been present. Women were recruited to the study via a letter on maternity unit headed paper, so they may have connected the study with the health service and may have been more likely to report health professional influences.

The two sites where the study took place did not have UNICEF Baby Friendly Accreditation (WHO/UNICEF 1989) but were working towards it, therefore the breastfeeding care experienced by women and their babies in the study may have been of a lower standard than in areas with Baby Friendly Accreditation. There are differences in the number of significant others between the two research sites. This could be explained by differing interview styles or real differences between the samples. However, the qualitative data collection protocol standardised the wording used by interviewers when introducing the significant other form to minimise this. It may also reflect a wider network of family and friends with breastfeeding experience available as influences at Site one, the differences in socio-economic status or other cultural differences.

4.3. The literature and what this study adds

Despite evidence that social networks, particularly how women's mothers fed their children are highly influential on infant feeding outcomes (McInnes & Chambers, 2008; Bolling et al., 2007), the published literature tends to focus on who provides support, types of support and the effect of lack of support for breastfeeding, with limited consideration of how social networks influence the introduction of formula milk or solids. This reflects UK survey data indicating that continuing breastfeeding is associated with having a mother who has breastfed (Bolling et al., 2007). In this study tangible and perceptual situations were a key influence on feeding behaviour. This ties in with the growing literature around personal and situational determinants of behaviour and the importance of context

as a key determinant (Ross & Nisbett, 2011; Cross, 1981). Many situations that influence breastfeeding have been described, particularly pain and perceptions of insufficient milk supply as reasons for stopping breastfeeding, baby weight gain, changes in lifestyle or the desire for 'me time' (Avery & Magnus, 2011; Bolling et al., 2007; Nelson & Sethi, 2005; Bailey et al., 2004; Dykes et al., 2003; Earle, 2000; Dykes & Williams, 1999). Breastfeeding in public is frequently cited as a reason either not to breastfeed (McFadden & Toole, 2006; McInnes & Chambers, 2006) or to introduce formula (Andrew & Harvey, 2011; Marshall et al., 2007; McInnes & Chambers, 2006) while women who expect to return to work may plan a shorter duration of breastfeeding (Barona-Vilar, 2009; McInnes & Chambers, 2006) or introduce formula or solids earlier (Bolling et al., 2007; Griffiths et al., 2007; Stewart-Knox et al., 2003). The influence of caring for other children on feeding behaviour, both the introduction of formula and the discontinuation of breastfeeding, for multiparous women in this study has been highlighted by others (Andrew & Harvey, 2011; Stewart-Knox et al., 2003). Both tangible (school runs, child care) and perceptual situations (jealousy, guilt, the need to breastfeed in public associated with children's activities) are important. The hospital postnatal environment precipitated the introduction of formula or stopping breastfeeding and it has been described as stressful and lonely (Razurel et al., 2011; Entwistle et al., 2010; Elberg et al., 2010; Dykes et al., 2003) with women being isolated from their partner and social network (Elberg et al., 2010; Persson et al., 2010; Rudman & Waldenstrom, 2007).

On the whole women's antenatal feeding intentions reflect the norms of their social network and exposure to breastfeeding as described elsewhere (Entwistle et al., 2010; McInnes & Chambers, 2008; Hoddinott and Pill, 1999). Social networks are also influential in maintaining breastfeeding if they have had positive breastfeeding experiences and have overcome similar challenges themselves (Entwistle et al., 2010; Reid et al., 2010; Grassley & Nelms, 2008; Ingram & Johnston, 2004; Isabella & Isabella, 1994). Social networks can also link breastfeeding with ideals about good motherhood and concomitant distress if breastfeeding goals are not achieved (Marshall et al., 2007; Pain et al., 2001; Schmied & Barclay 1999). The importance of overt and covert health professional influence on feeding behaviour has mainly been acknowledged in the immediate postnatal period (Dykes, 2005a; Dykes, 2005b; Cloherty et al., 2004; Dykes et al., 2003). Health professional disapproval may decrease both family trust and contact with health professionals, and in consequence, health professionals' opportunity to influence behaviour. There is very little evidence about women's experiences of reversing feeding behaviour changes in the literature, apart from one study where one woman sought help to re-establish exclusive breastfeeding (Marshall et al., 2007) and this deserves more attention.

This study has identified wide variation in couple and partner roles and values as described in the literature, including anticipation of shared decisions (Avery & Magnus, 2011); the desire for equal involvement in infant feeding (Laantera et al., 2010); breastfeeding leading to either of the couple feeling the partner is left out (Tohotoa et al., 2009; Nystrom & Ohrling, 2004; Jordan & Wall, 1990) and that feeding decisions were up to the woman (Barona-Vilar et al., 2009; Rempel & Rempel, 2004). In particular, for some couples feeding is considered essential to bonding with the baby, which may precipitate the introduction of formula (Sherriff

& Hall, 2011; Voss et al., 1993; Jordan & Wall, 1990) or solids. As others have reported, how women and social networks interpret baby behavioural cues can lead to changes in feeding behaviour, especially the introduction of formula or solids (Arden, 2010; Entwistle et al., 2010; Bailey et al., 2004; Anderson et al., 2001; Dykes & Williams, 1999; McLorg & Bryant, 1989). Naming the baby as a significant influence around the introduction of solids may indicate the influential discourse of 'baby-led' or 'baby-responsive' feeding (Townsend & Pitchford, 2012; Brown & Lee, 2011; Sachs, 2011; Arden, 2010; Anderson et al., 2001). The desire to mark the baby's progress, reaching developmental milestones (Murphy et al., 1998) or the influence of peer pressure or competitiveness about reaching developmental stages (Arden, 2010), and conforming to normative social network beliefs (Hamilton et al., 2011; McLorg & Bryant, 1989) may also precipitate stopping breastfeeding and introducing solids. The researchers' interpretation is that such changes are influenced by the desire for positive perceptual situations such as pride and reassurance that babies are reaching perceived social network norms, as consistent with social comparison theory (Festinger, 1954).

Bandura's (1977) concept of self-efficacy has been linked with successful breastfeeding in many studies (Entwistle et al., 2010; Blyth et al., 2002; Dennis & Faux, 1999) however, as far as is known, this research team is the first to apply concepts of family efficacy to infant feeding. Although, parental or collective efficacy (Wright & Cullen, 2001) and family efficacy (Bandura et al., 2011) have been described in the context of adolescent behaviour and the prevention of behaviour problems and crime. Family efficacy, including all significant others, is important, as partners, mothers, female network members or health professionals as single populations are unlikely to be the solution the health service is seeking to improve infant feeding outcomes, as few patterns between the characteristics of significant others and feeding outcomes were observed in the data. Instead a holistic approach is needed which aims to increase family efficacy and confidence by understanding the values and meanings attributed to infant feeding, the importance of perceptual and tangible situations, past experiences and the influences of social network members. This has many parallels with the Family Nurse Partnership programme that was introduced in Scotland in 2011. Although family efficacy is a relatively new concept, others have described how breastfeeding may cease if family welfare is being harmed or breastfeeding is conflicting with other family demands (Andrew & Harvey, 2011; Entwistle et al., 2010; Hauck & Irurita, 2003).

5. Conclusions and Recommendations

5.1. Summary

This study illustrates how maternity and postnatal care which is delivered predominantly to women and focuses on the health benefits of exclusive breastfeeding until six months is failing to recognise the complexity of meanings and values attributed by families and social networks to infant feeding. Behaviour change occurs at pivotal points when the immediate benefits of change are seen to outweigh the longer term benefits of optimal feeding. To improve infant feeding outcomes health care services need to anticipate these pivotal points and to provide support which helps prevent feeding change until later in the infant feeding journey. This study suggests that this requires a new family-centred discursive approach where health professionals listen and discuss family narratives about infant feeding. Throughout the infant feeding journey there are a range of people, situations and experiences that influence infant feeding behaviour, either towards or away from what is currently considered optimal feeding. A healthcare approach that recognises the uniqueness of how infant feeding fits into each family context is needed. This study recommends a proactive approach (Hoddinott et al., 2010), with the aim of increasing the woman's own feeding and parenting self-efficacy together with family efficacy. This may reduce the mismatch between idealism and realism which occurs at pivotal points where feeding behaviour changes away from the optimum. Over time, such a narrative and family-centred approach might reduce the negative stories circulating amongst social networks and improve community efficacy towards optimal feeding practices.

Targeting services and interventions towards significant others is only part of the solution. Situations are another key influence on feeding behaviour, often precipitating a change in feeding in order for the family to regain control. Without understanding the meaning and values attached to these both perceptual and tangible situations, attempts to promote and support optimal feeding behaviour are likely to fail. The current health service approach to improving feeding outcomes targets women, is feeding-centred and largely reactive when difficulties arise. For parents adjusting to life with a new baby, the overriding aim is to maximise emotional and physical wellbeing, with feeding being one of the few things that can be changed in an effort to control unpleasant situations. Negative situations and unsupportive people may precipitate or endorse feeding changes while feeding may be maintained by social network and health professional influences which boost the woman's self-efficacy and family efficacy. Once a behavioural change has taken place, how this is resolved is likely to affect how women portray feeding within their social network and influence feeding decisions with future children and grandchildren. A change of approach is needed if the status quo of unchanging suboptimal feeding behaviours is to be broken.

5.2. Implications

This study recommends that one of the aims of infant feeding care is to understand the meanings, values and goals each family has around infant feeding, their social network and how these are likely to impact on feeding

behaviour. As feeding behaviour change is determined by a complex interaction of significant others, situations, and experiences an understanding is also required of any anticipated or expected scenarios likely to lead to behaviour change. Few families consider the introduction of solids during pregnancy however, it would help prepare parents if information and discussion about current recommendations related to solids is available and reinforced in the first few months after birth.

Throughout the feeding journey, but particularly in pregnancy, the immediate postnatal period and at around three months (to focus on the introduction of solids), a discursive, family-centred and caring communication style is recommended for health professionals. The ideal would be to involve partners and significant others in health professional discussions and practical help, if the woman wishes this. The aim is to encourage parents to talk openly about the following issues:

- For multiparous women: their previous feeding experiences and how these might influence feeding this time
- Feeding stories of family and friends
- Family feeding plans and goals. Aim to determine what matters most on the continuum between long term health outcomes (breastfeeding-centred) vs. current family wellbeing (family-centred)
- Situations which would prompt the family to change their feeding plans. For parents intending to breastfeed this would include a) the introduction of formula, b) stopping breastfeeding, c) early introduction of solids
- Concerns and expectations about feeding
- Emotions around infant feeding
- Women's confidence in their own ability to breastfeed or delay introduction of solids
- The family/significant other's confidence in the woman's ability to breastfeed or delay introduction of solids
- How involved women would like their significant others to be in health service feeding care, without making assumptions
- How feeding will fit into family life: how partners and significant others can bond with the baby; how they can help women with feeding; other baby care roles; household tasks and other commitments e.g. care of older children; work.

A recommendation is that women and their families/significant others are offered interactive group discussions in pregnancy and at around three months where experiences of recent new parents can be shared.

Understanding the meanings and values attributed to infant feeding in the wider family and social network context will help to identify women vulnerable to stopping breastfeeding or introducing formula milk or solids early. Vulnerable women are likely to be those who do not have positive breastfeeding experiences or experience of the later introduction of solids in their immediate social network, who have low confidence (self or significant other perceived), who anticipate situations that are likely to influence them to change their feeding behaviour, e.g.

pain, lack of sleep, poor baby weight gain, lack of time for other activities and/or baby cues interpreted as readiness for solids. It may be appropriate to target more care towards women who are more vulnerable at pivotal points where feeding behaviour changes away from the ideal. However, further research is required to determine the most effective and cost effective way to do this, as the timing is likely to differ between families. Similarly more research is required to design and deliver interventions that embrace a family-centred approach and address the situations that are such important determinants of feeding outcome. Importantly, understanding family narratives, developing trust and timely intervention at pivotal points, will require good inter-personal skills, continuity and proactive care which is consistent with the priorities in the Health Care Quality Strategy for NHS Scotland (The Scottish Government, 2010).

5.3. Policy recommendations

Recently published Scottish Government policies acknowledge the important influence of both parents and social networks on infant feeding decisions from pre-birth into childhood. However, practical recommendations concentrate on involving the wider network antenatally to encourage women to choose to breastfeed, rather than involving the wider network postnatally, to enable women to continue to breastfeed their baby once they have made this initial decision or to delay the introduction of solids. This leads to the postnatal focus being on women and their babies with limited recommendations or practical strategies for involving partners and significant others following the birth. It is recommended that policy takes a more inclusive approach to involving the partner and significant others throughout the infant feeding journey.

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Appendix 1: Significant other data

Structured data to be completed at the end of every interview from mother

1. Check opt in form data complete and clarify anything that is unclear.
2. Who are the significant others in relation to infant feeding?

Definition: The person or persons identified by the mother who has/have the strongest influence on the feeding decisions made by the mother of the baby, regardless of the direction of influence (e.g. pro or anti breastfeeding). The significant other can be any person (including a health professional) and the most significant other may change with time over the course of this study.

[illegible]

Appendix 2: Summary of interviews and feeding outcomes

Study no.	Maternal age	Age at leaving education	SIMD	Parity	Type of delivery	Formula introduced	Non-milk fluids introduced	Solids introduced	Breastfeeding stopped	No. of interviews
1010	21-30	19 or over	3	Multip	Elective C/S	Weeks 5-6		17-20 weeks	Weeks 21-24	6
1033	21-30	19 or over	5	Primip	SVD	Weeks 13-16		17-20 weeks		6
1040	31-40	19 or over	5	Multip	SVD	Weeks 3-4	Weeks 21-24	21-24 weeks	Weeks 21-24	6
1044	31-40	19 or over	4	Primip	Emergency C/S	Week 1	Week 2	>24 weeks	Week 1	6
1054	31-40	19 or over	3	Multip	SVD	Week 1	Weeks 3-4	21-24 weeks		5
1056	41 or over	19 or over	5	Multip	SVD	Weeks 21-24	Weeks 21-24	>24 weeks		6
1057	31-40	18	2	Primip	SVD	Week 1	Weeks 17-20	17-20 weeks	Weeks 9-12	6
1075	31-40	19 or over	1	Multip	SVD	Week 2		21-24 weeks		6
1094	31-40	19 or over	5	Primip	SVD	Weeks 7-8		17-20 weeks		6
1108	31-40	19 or over	3	Primip	Forceps or ventouse		>24 weeks	>24 weeks		6
1148	31-40	19 or over	2	Multip	Elective C/S	Weeks 17-20	>24 weeks	17-20 weeks		6
1167	21-30	19 or over	1	Primip	Emergency C/S	Week 1	Weeks 3-4	>24 weeks	Weeks 3-4	4
1173	41 or over	19 or over	2	Primip	Emergency C/S	Week 1	Weeks 3-4	>24 weeks	Weeks 3-4	6
1176	21-30	19 or over	3	Primip	SVD		Weeks 21-24	21-24 weeks		6
1188	31-40	18	3	Multip	Emergency C/S	Weeks 9-12				5
1208	31-40	16 or under	3	Multip	SVD	Week 1	Week 2	17-20 weeks	Weeks 9-12	5
1210	41 or over	18	2	Multip	Emergency C/S	Week 1	Weeks 21-24	21-24 weeks		5
1226	31-40	17	1	Primip	Emergency C/S	Week 2	Weeks 9-12	17-20 weeks	Weeks 17-20	5
2003	31-40	16 or under	5	Primip	SVD	Week 1		17-20 weeks	Weeks 3-4	8
2020	31-40	19 or over	2	Multip	SVD	Weeks 13-16	Weeks 17-20	17-20 weeks		8
2037	21-30	17	4	Multip	SVD	Weeks 9-12	Weeks 17-20	21-24 weeks	Weeks 21-24	6
2039	31-40	19 or over	3	Primip	SVD	Week 1	Weeks 9-12	>24 weeks	Weeks 3-4	7
2047	31-40	19 or over	2	Multip	SVD	Week 1		17-20 weeks	Did not start	7
2056	31-40	18	2	Multip	SVD		Weeks 17-20	17-20 weeks		8
2057	31-40	19 or over	1	Primip	SVD			16 weeks or less		7
2061	31-40	17	3	Primip	Elective C/S	Week 1	Weeks 5-6	17-20 weeks	Weeks 5-6	8
2103	21-30	19 or over	3	Primip	SVD	Week 3-4	Weeks 13-16	17-20 weeks		8
2128	20 or under	17	1	Primip	Forceps or ventouse	Week 1	Weeks 21-24	17-20 weeks		6
2169	31-40	19 or over	3	Multip	SVD	Weeks 13-16		16 weeks or less		7
2181	21-30	17	2	Primip	Emergency C/S	Week 1	Weeks 5-6	17-20 weeks	Week 1	8
2192	31-40	17	1	Multip	SVD	Weeks 5-6	Weeks 21-24	21-24 weeks	Weeks 21-24	7
2203	20 or under	19 or over	2	Primip	SVD	Week 1		No information	Week 1	2
2255	21-30	19 or over	1	Primip	Emergency C/S	Week 1	Week 2	No information	Week 1	2
2287	20 or under	16 or under	4	Multip	SVD	Weeks 3-4	Week 1	16 weeks or less	Weeks 7-8	5
2294	31-40	16 or under	5	Primip	SVD	Week 1	Weeks 7-8	16 weeks or less	Weeks 21-24	7
2295	21-30	19 or over	4	Multip	SVD	Weeks 5-6	Weeks 13-16	16 weeks or less		6
HV1										1
HV2										1

This Table is an updated version of Table 2.2 in the study Final Report where 5 entries on the introduction of formula or solids were missing

Appendix 3: Significant others identified as influencing feeding at the end of each interview aggregated across all interviews and ordered by parity

ID number	No. of interviews	Prim / Multip	Weeks after birth			Number of times each significant other mentioned																
			Formula introduced	Solids introduced	Breastfeeding stopped	Partner	Self & Partner	Self	Baby	Self & baby	Mother	Sister	Mother-in-law	Sister-in-law	Other family	Friends/colleagues	Groups/classes	Media/culture	Midwife	Health Visitor	GP	Other health professional
1033	6	P	13-16	17-20		5		1			4	1	1							1	1	
1044	6	P	1	>24	1	5	1					2	1	1						1		
1057	6	P	1	17-20	9-12	3			1		1					1		1	4	1	1	
1094	6	P	7-8	17-20		5	1				4	3				1		2				
1108	6	P		>24		1	2				1			1	1	4	1		1			
1167	4	P	1	>24	3-4	1		1			3		1		1	1	1		1			
1173	6	P	1	>24	3-4				5		1					4		1	2			
1176	6	P		21-24				2										2	4			
1226	5	P	2	17-20	17-20	1	1	4			1			1				2	1			
2003	8	P	1	17-20	3-4			3			1	4				1			1			
2039	7	P	1	>24	3-4	4		5			4			1	1	2		2	3			
2057	7	P		<16			2		4								4	1	2			
2061	8	P	1	17-20	5-6	2	2	2	3							1			1	2	1	
2103	8	P	3-4	17-20		4					3			2		6	3		1			
2128	6	P	1	17-20		1		1			4					1		1	3			
2181	8	P	1	17-20	1			1	4									1	1			
2203	2	P	1	No data	1			2										2				
2255	2	P	1	No data	1						2				1							
2294	7	P	1	<16	21-24	1		3	1		1					2	2		3			
1010	6	M	5-6	17-20	21-24	1		3	2		2			1	1				1	2		
1040	6	M	3-4	21-24	21-24	1		1	2	3	1											
1054	5	M	1	21-24					1			5							1	1		
1056	6	M	21-24	>24		1		2			1	6				6	1		2			
1075	6	M	2	21-24		6		3								3	1		3			
1148	6	M	17-20	17-20		5					4	2				6			1	2		
1188	5	M	9-12			3	1	1			4	3	1			2						
1208	5	M	1	17-20	9-12	5		1										1				
1210	5	M	1	21-24				4	1											1	1	
2020	8	M	13-16	17-20		4		6			3				1			1				
2037	6	M	9-12	21-24	21-24	5		1			2											
2047	7	M	Birth	17-20	Non-starter	4		1			2								2			
2056	8	M		17-20		1		3	2	4									1			
2169	7	M	13-16	<16		4		5	2		2		1									
2192	7	M	5-6	21-24	21-24	1		6								2			1			
2287	5	M	3-4	<16	7-8	1	2	2								1						
2295	6	M	5-6	<16				5											3			

Appendix 4: Significant others named as influential at interviews before and after feeding behaviour change

[illegible]

Significant others named at the interviews before (B) and after (A) the introduction of solids, ordered by the age of the baby at the time

[illegible]

Significant others named at the interviews before (B) and after (A) breastfeeding stopped, ordered by the age of the baby at the time

ID number	Prim / Multip	Time of interview (weeks postnatal)	Stopped breastfeeding (weeks postnatal)	Partner	Self & Partner
1044	P	3	1	A	
2181	P	2	1		
2203	P	3	1		
2255	P	3	1		
1167	P	4	3-4		
1173	P	6	3-4		
2003	P	6	3-4		
2039	P	7	3-4	BA	
2061	P	5	5-6	BA	
2287	M	12	7-8		A
1057	P	13	9-12	BA	
1208	M	16	9-12	BA	
1226	P	>24	17-20		A
2294	P	>24	21-24		
1010	M	>24	21-24		
1040	M	>24	21-24	A	
2037	M	24	21-24	BA	
2192	M	>24	21-24	A	
2047	M		Non-starter		
1033	P				
1094	P				
1108	P				
1176	P				
2057	P				
2103	P				
2128	P				
1054	M				
1056	M				
1075	M				
1148	M				
1188	M				
1210	M				
2020	M				
2056	M				
2169	M				
2295	M				

