The Good milk: A mixed methods approach to understanding the infant feeding outcomes, influences and experiences of Indian, Pakistani and Bangladeshi mothers living in the United Kingdom

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PhD

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A thesis submitted in partial fulfillment of the University's requirements for the Degree of Doctor of Philosophy.

Certificate of Ethical Approval

Applicant:

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Project Title:

South Asian womens infant feeding beliefs and experiences within an acculturation framework.

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

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Abstract

Background / Aims

Breastfeeding has significant short and long-term effects on the health and development of the child and the mother's health. Little contemporary research exists on the infant feeding outcomes, influences and experiences of Indian, Pakistani and Bangladeshi (IPAB) mothers. The thesis aimed to describe the (a) breastfeeding outcomes (b) antenatal/postnatal factors associated with infant feeding amongst IPAB mothers (c) understand the influences on infant feeding choices (d) and the infant feeding experiences and practices of IPAB mothers and grandmothers living in the United Kingdom (e) and to define the next steps for intervention development to support optimal breastfeeding amongst IPAB mothers.

Method

A mixed methods approach was adopted. Aims (a) and (b) were addressed via a secondary analysis of the 2010 Infant Feeding Survey. A scoping review of the existing literature addressed aim (c). Qualitative interviews were conducted to address aim (d). Aim (e) was addressed by describing existing interventions available and recommendations were made about the next steps for designing a suitable intervention to meet the needs of the above sub-groups using the REPLACE framework.

Results

The secondary analysis highlights that lower proportions of Pakistani and Bangladeshi mothers breastfed at week one and six postpartum compared to Indian mothers. The scoping review shows that discarding colostrum and administering prelacteal feeds are practised amongst IPAB mothers. The qualitative data showed that mothers and grandmothers were unaware of colostrum and its

benefits. Mothers' bottle fed in response to feelings of helplessness and needing to '*get the baby used to the bottle'*. Pardah (Modesty) was a major barrier to breastfeeding. The REPLACE framework shows promise in addressing socially and culturally ingrained messages about infant feeding that may deter mothers from optimally breastfeeding their babies.

Conclusion

This novel, mixed method approach has demonstrated that varying outcomes exist amongst IPAB mothers living in the UK. Significant social, cultural and psychological barriers to exclusive breastfeeding exist within a conflicting context that teaches mothers that breast is best but encourages practices such as discarding colostrum and prelacteal feeds which harm breastfeeding. Messages about preserving the mother's modesty and beliefs that the baby should get used to the bottle hinder mothers' abilities to breastfeed. Interventions will need to engage with the wider communities to minimise the impact of these practices and beliefs and create supportive environments for mothers to feed their babies.

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1 Introduction

1.1 Chapter Overview

The latest release from the Office of National Statistics (ONS) on childhood mortality in England and Wales stated that infant mortality has risen from 3.6 deaths per 1000 live births in 2014 to 3.7 deaths in 2015 (ONS 2017). This number is disproportionately highest amongst South Asian mothers (ONS 2017). For example, Pakistani mothers were reported to have 8.2 deaths per 1000 live births compared to the lowest rate recorded as 3.5 deaths amongst the White Other ethnic group. Increasing rates of breastfeeding in disadvantaged groups has been identified as a key step in reducing inequalities in infant mortality. There is therefore, a strong impetus to explore infant feeding practices amongst Indian, Pakistani and Bangladeshi (IPAB) sub-groups.

This chapter provides the backdrop for the thesis. An overview of the health benefits of breastfeeding and breastfeeding outcomes in the UK are presented. The results of the most recent 2010 Infant feeding survey (IFS) are presented with an overview of the policy context to support infant feeding in England. The literature on the infant feeding outcomes of IPAB mothers in the UK are discussed, and the facilitators and barriers to breastfeeding highlighted. The final part of the chapter discusses the South Asian cultural context of infant feeding. The chapter closes with a discussion of the importance of the immigration and acculturation context when exploring infant feeding outcomes, experiences and practices. The thesis acknowledges the debates around ethnicity and definitions of various sub-groups; however it is beyond the scope of this thesis to go into this discussion.

1.2 Health benefits of breastfeeding

> "*Breastfeeding is a child's first inoculation against death, disease and poverty, but also their most enduring investment in physical, cognitive and social capacity*" (Hansen 2016:416).

Never has so much been known about the benefits of breastfeeding for both mother and infant (Victora et al. 2016). The literature has benefited from several recent, high-quality systematic reviews and meta-analyses synthesising the data on breastfeeding and various maternal and infant health outcomes (e.g. Grummer-Strawn and Rollins 2015, Horta, Loret de Mola, and Victora 2015, Victora et al. 2016). A special issue of Acta Paediatrica (Grummer-Strawn and Rollins 2015) aimed to systematically bring together the literature to date on the impact of breastfeeding on maternal and infant health. The issue concluded that there were higher risks of all-cause and infection-related mortality with sub-optimal breastfeeding practices in the first two years of life (Sankar et al. 2015). Even partial breastfeeding had a modest protective effect on infection-related mortality compared to no breastfeeding (Sankar et al. 2015), breastfeeding was positively associated with better performance on intelligence tests in childhood and adolescence (Horta, Loret de Mola and Victora 2015), reduced the odds of obesity, type 2 diabetes (Giugliani, Horta, Loret de Mola, and Victora 2015), and the risk of asthma in childhood (Lodge et al. 2015). Breastfeeding protects against dental caries up to 12 months (Tham et al. 2015) and against the risk of acute otitis media in the first two years of life (Bowatte et al. 2015).

Maternal outcomes were also investigated in the series. The risk of developing breast carcinoma and ovarian cancer was reduced amongst women who cumulatively breastfed for more than 12

months compared with women who did not breastfeed (Chowdhury et al. 2015). More recently, The Lancet published a two-part series, reviewing, amongst other things, the short and long-term consequences of breastfeeding for both the mother and child (Victora et al. 2016). The systematic reviews emphasised the importance of breastfeeding for all women and children, regardless of where they lived and whether they were rich or poor (Victora et al. 2016). Findings confirmed that appropriate breastfeeding practices prevented child morbidity due to diarrhoea, respiratory infections and otitis media (Victora et al. 2016). Breastfeeding offered protection where infectious diseases were common causes of death, and in high-income countries, it lowered mortality from causes such as necrotising enterocolitis and sudden infant death syndrome (Victora et al. 2016). Breastfeeding was also implicated in increasing intelligence in infants (Victora et al. 2016). Breastfeeding was confirmed to be beneficial for nursing mothers, particularly in terms of preventing breast cancer, ovarian cancer and diabetes in mothers (Victora et al. 2016). Victora and colleagues do not report on effects of breastfeeding on cardiovascular disease amongst mothers. However, there has been some evidence to suggest the increased duration of lactation was associated with lower prevalence of hypertension and cardiovascular disease (Schwarz et al. 2009). Thus, the research to date demonstrates the varied and substantial benefits of breastfeeding that are experienced well beyond the period that breastfeeding is stopped (Grummer-Strawn and Rollins 2015). For this reason, as a global public health recommendation, infants should be exclusively breastfed (i.e. not given any other food, or drink, not even water) for the first six months of life to achieve optimal development and health (WHO 2003).

It is important to consider some of the debates that surround the 'benefits of breastfeeding' research to contextualise the findings and understand the wider picture. Most studies looking at the benefits of breastfeeding use observational, cross-sectional designs and are retrospective. Such study designs restrict the conclusions that can be drawn in systematic reviews and meta-analyses such as those mentioned above. The gold standard for breastfeeding research would be

a trial randomising mothers to exclusive breastfeeding or not, and seeing whether those exposed to the 'intervention', i.e. breastfeeding, fared better than those that were not breastfed. However, such an approach is unfeasible (Bartick 2013) and unethical. Observational/cross-sectional studies attract numerous sources of bias related to measurement, selection, confounding and reverse causality (Kramer et al. 2001), and thus need to account for this confounding (Grummer-Strawn and Rollins 2015). Experimental data are scarce because breastfeeding promotion activities must be highly effective to change feeding patterns that then leads to a measurable effect on short and long-term health outcomes (Victora et al. 2016). Confounding can occur at many levels in breastfeeding research; for example, breastfeeding is associated with higher socio-economic status in high-income countries (McAndrew et al. 2012). Thus, the effect on outcome needs to be separated from such confounders. More advanced systematic reviews such as the work of Victora et al. (2016) have conducted separate analyses for low-middle income countries with the recognition that in these countries, individuals from poorer backgrounds breastfeed for longer than richer people; an association that is reversed in high-income countries (Victora et al. 2016). Other issues that potentially challenge breastfeeding research and need consideration when interpreting results is the idea that women who intend to breastfeed may engage in other healthier behaviours that may also explain better health outcomes (Bartick 2013). Unsuccessful breastfeeding may also be due to other underlying health issues which may also explain worse health outcomes in infants. For example, obese women and those that have diabetes have more difficulty in establishing breastfeeding than those that do not suffer from such conditions (Bartick 2013). The dose-response effects offer support for the benefits of breastfeeding that can be attributed to, and not just associated with breastfeeding. For example, it has been reported that there were reduced odds of illness and sick baby medical visits among fully breastfed babies compared to those that were partially breastfed or formula fed (Raisler, Alexander and O'Campo 1999). There were also no reduced odds ratios of illness amongst the group that provided the least amount of breastmilk to their babies (Raisler, Alexander and O'Campo 1999). Other challenges that face breastfeeding research are the length of recall (mothers may be prone to recall bias if the

length of period is long), unclear definitions of breastfeeding outcomes, combining dissimilar outcomes and not defining comparison groups. The challenges add to the difficulty of combining the results of multiple studies (Grummer-Strawn and Rollins 2015).

At this point, it is useful to introduce the work of Kramer and Colleagues (2001). They conducted the Promotion of Breastfeeding Intervention Trial (PROBIT) in Belarus, which was the first randomised controlled trial modelled on the Baby-Friendly Hospital Initiative (BFHI). No breastfeeding support groups existed in Belarus at the time of the PROBIT. Sixteen hospital sites and their associated clinics were assigned the breastfeeding intervention, while the other 16 were provided with standard care (control). The PROBIT trial also provided the opportunity to assess the relationship between a breastfeeding promotion intervention and infant health and the link between infant feeding and infant morbidity in healthy mothers and their infants (Kramer et al. 2001). The authors concluded that the intervention was successful not only in increasing breastfeeding duration and exclusivity in the first year of life, but there was also a 40% reduction in the intervention group for the incidence of gastrointestinal tract infection in infants. The experimental condition was also successful in reducing the risk of atopic eczema in the first year of life in infants. The PROBIT trial is an important contribution to the breastfeeding literature and provides the evidence and experimental rigour to confirm the benefits that breastfeeding confers (Martens 2012).

Despite some of the limitations discussed, the literature continues to reinforce the important and substantial health benefits of breastfeeding for the mother and child and is one of the few interventions where the benefits span the entire continuum of childhood: new-born, infancy and childhood (Sankar et al. 2015).

1.3 Breastfeeding in the UK

Despite the vast health benefits of breastfeeding for mother and infant, the UK has the lowest rates of breastfeeding in Europe (Avery and Lazdane 2015). For this reason, attention has been paid to the question of 'who breastfeeds?'

The following sections discuss the policy context in the UK that encourages breastfeeding and the breastfeeding outcomes of mothers in the UK. Breastfeeding research has advanced a great deal over the decades which has resulted in the evolution of breastfeeding recommendations (Victora et al. 2016). Infant nutrition has a significant role in reducing morbidity and mortality in infants and has been recognised in several evidence-based policy initiatives that have been implemented to promote and protect exclusive breastfeeding.

In the 1990's, policy makers and international agencies adopted the Innocenti Declaration (UNICEF 1990) which stated that as a global goal for optimal maternal and child health, all infants should receive exclusive breastfeeding from birth to 4-6 months. After that, infants should continue to be breastfed (UNICEF 1990) while receiving appropriate and adequate complementary foods for up to two years of age or beyond (UNICEF 1990). The Innocenti Declaration was updated in 2005, with an additional five operational targets to ensure optimal feeding amongst infants, which included recommendations for exclusive breastfeeding for six months followed by the introduction of complementary feeding and continuation of breastfeeding for up to two years of age or beyond (UNICEF 2007). The premise of the Declaration has stayed the same over the years; every child has a right to adequate nutrition and that society must ensure that this right is exercised (UNICEF 2007).

The World Health Organisation (WHO 2014) has outlined global targets for key areas that need change, one of which is breastfeeding (WHO 2014). By 2025, the target aims to increase the rate of exclusive breastfeeding in the first six months by up to 50% (WHO 2014). This would mean a

relative increase of 2.3% per year and would result in approximately 10 million more infants being exclusively breastfed up to the ages of six months (WHO 2014).

Nationally, in England, the Department of Health (DH) measures a range of indicators under the Public Health outcomes framework for England (2016), which allows monitoring progress yearly on several health outcomes which are grouped into four main domains (DH 2016); (1) Improving wider determinants of health (2) Health Improvement (3) Health protection and (4) Healthcare public health and preventing premature mortality. As a specific indicator, monitoring of breastfeeding (under domain two) requires local authorities to prioritise breastfeeding support locally and to increase breastfeeding initiation and prevalence rates (Entwistle 2013). Increasing rates of breastfeeding initiation and continuation are also recommended within the DH Healthy Child Programme (DH 2016).

How infants and young children are fed has a major impact on their health and well-being and public health across the nation (World Breastfeeding Trends Initiative (WBTi) 2016). Over recent decades there has been a consensus globally on key strategies to improve infant and young child feeding (IYCF) practices (WBTi 2016). However, there are still major gaps in policy and practices to support breastfeeding practices. In the UK, the Department of Health, National Health Service and the World Health Organisation's (WHO) public health recommendation is for all babies to be exclusively breastfed for the first six months, followed by the introduction of complementary solid foods alongside continued breastfeeding for up to two years of age or beyond (DH 2003, WHO 2003). Unfortunately, there is no established infant feeding strategy for England to implement the WHO recommendations to protect, promote and support breastfeeding or clear current infant feeding recommendations (WBTi 2016). Such non-existence of a national IYCF or nutrition policy could contribute to the low rates of breastfeeding seen in the UK (Bosi et al. 2015).

In 2016, UNICEF UK released a call to action calling on the UK and all governments involved to 'promote, protect and support breastfeeding' (UNICEF UK 2016). The call to action asks for a fundamental shift in UK policy thinking around breastfeeding (UNICEF UK 2016), and presents four key actions to create an environment supportive of breastfeeding (UNICEF UK 2016); one action is the development of a National Infant Feeding strategy board responsible for developing and implementing a National Infant Feeding strategy in the UK, which is currently lacking. The call for action recognises that a multifaceted approach is needed to promote and protect breastfeeding, and this needs to be reflected in various UK policies. It is well recognised that infant feeding has a key role in various policy areas such as obesity, perinatal mental health, cancer prevention and early years development, however it is not acknowledged in the policy and guidance addressing these issues (UNICEF UK 2016).

The WHO recommends the use of three core indicators for assessing breastfeeding practices; early initiation of breastfeeding (within an hour after birth), exclusive breastfeeding (at six months) and continued breastfeeding at one year (Bosi et al. 2015). Data for UK breastfeeding initiation and exclusive breastfeeding at one year was unavailable (Bosi et al. 2015). The percentage of mothers breastfeeding exclusively at six months was reported to be less than 1% compared to the highest performing country, Slovakia, where 49.3% of mothers were exclusively breastfeeding at six months. By 2025, the WHO has set targets to increase the rate of exclusive breastfeeding in the first six months by up to 50% (WHO 2014), however breastfeeding practices within the WHO European region, especially exclusive breastfeeding are currently not in line with the WHO recommendations (Bosi et al. 2015). Despite initiatives established 25 years ago, to promote and support breastfeeding (Rollins et al. 2016), and the evidenced benefits of breastfeeding, global and national initiation and exclusivity rates remain low. The UK has one of the lowest rates of exclusive breastfeeding at six months compared to other WHO regions (Avery and Lazdane 2015).

Breastfeeding data are available via the Public Health Outcomes Framework, where data are incorporated from all hospital trusts in England. However, the data collection and submission is not mandatory, and therefore the dataset suffers from considerable gaps (WBTi 2016).

Between 1975 and 2010, the Infant Feeding Surveys (Martin 1978, White, Freeth and O'Brien 1992, Foster 1997, Hamlyn et al. 2002, Bolling et al. 2007, and McAndrew et al. 2012) were conducted every five years, surveying mothers at three intervals in the first twelve months of infancy with the primary aims to establish how infants were being fed and to provide national figures on the incidence, prevalence and duration of breastfeeding (WBTi 2016). The IFS's have now been discontinued, and currently there is no other source of information for these important indicators.

Given the gaps in the public health data, the figures from the latest and final IFS will be cited here to describe breastfeeding practices in the UK. Although breastfeeding initiation and prevalence at 6-8 weeks continue to be measured in the UK, the IFS was the only source of data on the timing of breastfeeding initiation, exclusive breastfeeding to 6 months and continued breastfeeding up to 1 year (WBTi 2016).

The incidence of breastfeeding, defined as the proportion of all babies who were breastfed initially (and includes all babies who were put to the breast at all, even if it was only once) was reported as 81% for the UK in 2010 (McAndrew et al. 2012). Considerable variations existed in initiation rates amongst sub-groups, with the highest incidences found amongst mothers aged 30 years or over (87%), those from minority ethnic groups (97% for Chinese or other ethnic group, 96% for Black and 95% for Asian ethnic group), who left education over the age of 18 (91%), in managerial and professional occupations (90%) and those living in the least deprived areas (89%). Although, first time mothers were more likely to start breastfeeding than mothers of second or

later babies (84% compared with 78%), mothers who had previous experience of breastfeeding their baby for at least six weeks were more likely to start breastfeeding their youngest baby than those who had breastfed a previous child for less than 6 weeks or not at all (97% compared with 79% and 35%, McAndrew et al. 2012).

As mentioned previously, the WHO recommends that all infants are exclusively breastfed (i.e. given only breastmilk without any additional food or drink, not even water) for the first six months of life (WHO 2003). However, only a small percentage of mothers were exclusively breastfeeding by the time their infants were six weeks old. Across the UK, 69% of mothers were exclusively breastfeeding at birth in 2010 (McAndrew et al. 2012). At one week, less than half of all mothers were exclusively breastfeeding (46%), which had fallen to less than a quarter by six weeks (McAndrew et al. 2012). Variations in prevalence of exclusive breastfeeding were largely like those patterns described for the incidence of breastfeeding (McAndrew et al. 2012). Mothers from managerial and professional occupation groups were the most likely to be breastfeeding exclusively at birth (79%), compared to mothers from routine and manual occupations (61%) and those who had never worked (53%). Mothers living in the least deprived areas were more likely to exclusively breastfeed at birth (77%) compared to those from the most deprived areas (60%). Although first time mothers were most likely to be exclusively breastfeeding at birth (71%) they were also more likely to introduce something other than breast milk at an early stage. This meant three weeks post-birth, the pattern changed, and more mothers of second or later babies were exclusively breastfeeding (38%) compared to first-time mothers (33%). Mothers who were older (76%) exclusively breastfed at birth, with this pattern evident at later ages of the baby (McAndrew et al. 2012). Rates of exclusivity did differ by age at later ages, with 30% of mothers aged 35 or over exclusively breastfeeding at six weeks compared to 12% of mothers aged under 20.

As with breastfeeding initiation, mothers from ethnic minority groups were most likely to breastfeed exclusively at birth compared to White mothers. For example, 68% of White mothers breastfed exclusively at birth compared to 78% of Black mothers and 75% of Asian mothers. However, at week one, levels of breastfeeding exclusivity were similar with 46% of White mothers feeding exclusively compared with 48% of Asian and 49% of Black and Chinese or Other ethnic groups (McAndrew et al. 2012). At six weeks, there was no distinction in breastfeeding exclusivity rates by ethnicity (McAndrew et al. 2012). Thus, although the prevalence of breastfeeding initiation was higher for Asian, Black and Chinese or Other ethnicities, this was not the case for exclusive prevalence after week one.

Ethnic minority groups appear to have favourable breastfeeding practices compared to the White population; however, this advantage may not hold when looking at exclusivity rates over a longer period. Given the WHO recommendations for exclusively breastfeeding for up to at least six months of age (WHO 2003), it is concerning that such a small percentage of mothers from all ethnicities are exclusively breastfeeding in the first couple of weeks post-birth.

1.4 Facilitators and barriers to breastfeeding

The question of how mothers can be supported to initiate and continue exclusive breastfeeding to meet the WHO recommendations has been the centre of breastfeeding research for decades. Facilitators and barriers to optimal breastfeeding practices have been explored in great depth and the conclusions remain the same; reasons for breastfeeding or not are multi-faceted (Rollins et al. 2016).

It has been known for a long time that mothers, who are older, well-educated and earning a higher income are more likely to breastfeed for longer (Meedya, Fahl and Kable 2010). Although these factors are not amenable to change, information such as this helps health professionals focus their

education and support for certain sub-groups that may not engage in breastfeeding (Meedya, Fahl and Kable 2010).

The breastfeeding literature has benefited from several reviews looking at the factors associated with breastfeeding initiation (for example Dyson et al. 2006) and breastfeeding exclusivity (for example De Jager et al. 2013). Most recently, a large systematic review published by The Lancet Breastfeeding group last year has drawn together a large body of published and unpublished worldwide data from 28 systematic reviews and meta-analyses on determinants of breastfeeding (Rollins et al. 2016). The series highlighted the complexity of breastfeeding which is affected by a range of historical, social, cultural and individual factors (Rollins et al. 2016). Some of the key findings from Rollins et al's (2016) work are highlighted below. Several pregnancy-related factors such as high-risk pregnancies, assisted delivery, long hospital stays, maternal illness, pre-term illness or low birth weight babies can result in delayed breastfeeding. Hospital related factors such as the separation of the infant from the mother, prelacteal supplementation and free samples of breast milk substitution affected breastfeeding. Family dynamics such as the practices and experiences of female relatives affect both the incidence and duration of breastfeeding. Some traditional societies view colostrum as harmful and it is discarded which can delay the initiation of breastfeeding. Partner's preference or support of breastfeeding has been implicated in longer breastfeeding duration. Going out to work has a negative effect on breastfeeding and few women are provided with adequate maternity and workplace rights to work and still breastfeed their infant. At an individual level, subjective norms ('*the perceived social pressure to perform or not to perform the behaviour'*, Ajzen 1991:188) about breastfeeding and the knowledge of benefits of breastfeeding are the most cited reasons for intending to breastfeed. Practices and advice that undermine maternal confidence negatively impact on breastfeeding. Poor breastfeeding positioning and latching, as well as inadequate support, were reported as common reasons to stop breastfeeding. Infant feeding characteristics such as crying, perceived hunger, the inability to settle the infant often causes mothers to perceive that she has insufficient milk and to then

introduce breast milk substitutes. Findings such as those from the review above highlight the complexity faced by those promoting breastfeeding behaviours with many factors (acting simultaneously) that may impact a mother's ability to breastfeed. The challenge for health professionals is, then to develop and deliver appropriate interventions to mothers to support optimal breastfeeding.

Systematic reviews of the determinants of breastfeeding have been important in aiding our understanding of how best to support optimal feeding in mothers. Reviews such as those by Rollins et al. (2016) and others (e.g. Meedya, Fahy, Kable 2010) often collate all information and discuss factors for mothers in general and may not necessarily break the information down by the individual sub-group. This is a challenging task when there is so much data to collate. However, given that it has been demonstrated that sub-groups have varying infant feeding outcomes (McAndrew et al. 2012) it is of interest to understand what factors influence infant feeding practices amongst individual sub-groups.

Most of the interest in infant feeding research has focused on various socio-demographic variables associated with infant feeding practices and less on the social and cultural context and reasons for why mothers adopt a particular method (Hufton and Raven 2016). Further, most research has centred on the behaviour and experience of White British mothers with little consideration to women of ethnic minority groups (Hufton and Raven 2016).

1.5 Breastfeeding and the South Asian sub-group

'Inequalities in health rise because of inequalities in society – in the conditions people are born into, grow, live, work and age' (Marmot et al. 2010:16).

In the UK literature, there has long been an interest in the health behaviours of ethnic minority groups, because these sub-groups have poorer health than the rest of the population (Matthews 2015). Persistent health inequalities have been seen amongst Pakistani and Bangladeshi women compared to White mothers (Becares 2013, Evandrou et al. 2016) and have also been evident in their maternity outcomes (Bharj and Salway 2008). Studies on South Asian mothers' breastfeeding outcomes have found mixed results. For this reason, the South Asian sub-group and their infant feeding outcomes require closer examination.

The following section aims to provide an overview of the literature on South Asian mothers' infant feeding outcomes and practices. This will highlight the conclusions that have been drawn to date and the work that still needs to be done in the area.

1.5.1 Infant feeding outcomes in South Asian populations in the UK

Large scale surveys such as the IFS have examined the differences in breastfeeding rates by various sub-groups including differences between ethnic groups. The results from the latest IFS (McAndrew et al. 2012) have been described earlier in this chapter (section 1.3) with the conclusion that the highest incidence of breastfeeding and prevalence of breastfeeding exclusivity were amongst ethnic minority groups (i.e. Asian, Mixed, Black and Chinese ethnic groups).

Most research into ethnicity and health is based on the paradigm that presents data using the White population as the standard (Senior and Bhopal 1994). Such an approach (commonly known as the comparative approach) pays attention to certain diseases or behaviours that are more prominent in ethnic minority groups compared to the White population (Bhopal 1997) and '*displaces the problem in question that is common in ethnic minorities but less so than in the White population from their rightful place as high priorities for ethnic minorities'* (Bhopal, 1997:1754). The comparative approach has been discussed regarding cancers and respiratory disease (Bhopal 1997), but also has relevance to infant feeding behaviours.

Breastfeeding outcomes of mothers living in the UK have traditionally been presented as comparisons between the ethnic majority (White mothers) and the ethnic minority. A breastfeeding outcome that is common in the ethnic minority than in the White population is considered to be less of a problem essentially because the rates demonstrated are higher than the majority White population (Bhopal 1997). Such an approach misses the opportunity to understand and explore breastfeeding rates and experiences of the minority groups and more importantly may miss opportunities for improving infant feeding practices amongst these sub-groups.

When a non-comparative approach is taken and breastfeeding data are examined within minority ethnic groups, Asian mothers have lower rates of breastfeeding incidence and prevalence of breastfeeding up to 6 months compared to Black and Chinese ethnic sub-groups (McAndrew et al. 2012). When duration of breastfeeding is examined, the Asian sub-group consistently fare worse at weeks one and six and at six months post-birth compared to all other ethnic groups (McAndrew et al. 2012). Such findings are masked because when compared to the majority population (White), overall ethnic minority groups demonstrate *better* outcomes. Indeed, available research suggests that the South Asian sub-group may need attention in supporting optimal breastfeeding outcomes (Choudhry and Wallace 2012, Anwar and Wallace 2013, Kelly, Watt and Nazroo 2006). This provides a strong impetus to understand the infant feeding outcomes of IPAB mothers, the sub-groups that make up the 'South Asian' group.

Another widespread practice over the last two decades amongst large surveys has been to combine Indian, Pakistani, and Bangladeshi sub-groups under the broad umbrella category of 'South Asian'. Pragmatically, such steps address small sample sizes or help manage large numbers of sub-groups. However, the 'South Asian' or 'Asian' sub-group is made up of a number of heterogeneous sub-groups, such as IPAB sub-groups (Bhopal 1997), with evident variations by country of origin, religion, language and diet (Bhopal 1997).The importance of treating individual South Asian sub-groups as heterogeneous, particularly in terms of their health behaviours and needs has been highlighted for many years (Bhopal 1997, Gill et al. 2007). For this reason, there is merit in understanding breastfeeding rates by individual sub-groups that make up the 'South Asian' sub-group.

One of the first national surveys of infant feeding in South Asian mothers was presented by Thomas and Avery in 1997. The survey was commissioned by the ONS and was designed to look at the early feeding practices and growth of babies born to mothers of IPAB origin (Thomas and Avery 1997). Twenty per cent of Bangladeshi, 21% of Indian, 35% of Pakistani mothers and 60% of White mothers had started breastfeeding within an hour of the birth (Thomas and Avery 1997). By eight weeks old, 33% of Indian, 27% of White and Bangladeshi and 20% of Pakistani mothers were breastfeeding (Thomas and Avery 1997). Pakistani mothers breastfed for the shortest length of time. At eight weeks old, 64% of Pakistani mothers had stopped breastfeeding compared to 54% of Bangladeshi, 48% of Indian and 46% of White mothers who initially breastfed had stopped.

The survey also provided information on the bottle-feeding behaviours of the mothers in the sample. When babies were nine weeks old, 95% of Bangladeshi, 91% of Pakistani, 83% of White and 81% of Indian babies were bottle fed at least some of the time (Thomas and Avery 1997). Such findings point to important differences amongst South Asian sub-groups that are masked when results are presented under the broad grouping of 'South Asian'. Unfortunately, subsequent infant feeding surveys (such as Hamlyn et al. 2002, Bolling et al. 2007, and McAndrew et al.

2012) do not present findings by individual South Asian sub-group; it is therefore unclear if such patterns within the IFS still exist.

Other large-scale surveys of infant feeding outcomes amongst ethnic minority groups confirm variances highlighted by the work of Thomas and Avery (1997). For example, The Millennium Cohort Study (MCS), a longitudinal survey of the health and development of approximately 19000 babies across the UK (Smith and Joshi 2002) revealed that after adjustment for maternal education, socio-economic status, employment, age, parity and lone parenthood, mothers from most ethnic minority groups were less likely to stop breastfeeding before four months compared to White mothers. However, this was not true for Pakistani and Bangladeshi mothers. After adjustment for the above socio-demographic variables, these sub-groups were likely to stop breastfeeding before four months compared to White mothers (Griffiths et al. 2007).

Hawkins et al. (2008) reported on a study that included 1197 mothers from the Indian (n=348) and Pakistani or Bangladeshi (n=849) groups. Breastfeeding initiation was highest amongst Indian mothers (86%) compared to Pakistani and Bangladeshi mothers (76%), and a similar pattern was found for the percentages breastfeeding until at least 4 months. A later study confirmed variances amongst IPAB mothers, but different patterns were observed to those highlighted by previous authors. Baker and colleagues (2011) found that a higher percentage of Indian mothers (85%) and Bangladeshi mothers (84%) were breastfeeding at two weeks post-partum compared to 72% of Pakistani mothers.

Given the varying results reported between studies (particularly for the Bangladeshi sub-group) it is difficult to come to definite conclusions about the infant feeding outcomes of IPAB mothers. Indian mothers are known to generally have the breastfeeding advantage over Pakistani and Bangladeshi mothers (i.e. Thomas and Avery 1997). Contrasting findings such as those presented by Baker and colleagues where both Indian and Bangladeshi mothers were more likely to be breastfeeding compared to Pakistani mothers may well reflect changing behaviours over time for

these sub-groups. Up to date knowledge is required to address the gap in understanding infant feeding outcomes of these sub-groups and to confirm whether the patterns described above still exist.

Issues of ethnocentricity and heterogeneity of individual sub-groups within broader ethnic groups such as the South Asian group raise the importance of understanding the breastfeeding outcomes of individual ethnic sub-groups in more detail. Particularly as ethnic minority groups such as those that make up the South Asian sub-group cannot be seen as homogenous in their infant feeding behaviours (Burton-Jeanagros 1995). Only by understanding such variances will mothers from the IPAB sub-groups be supported in optimally feeding their babies.

1.5.2 Infant feeding experiences in South Asian populations

Observations of variations in the prevalence of a health behaviour, such as breastfeeding, should be followed by detailed examination of the relative importance of environmental, lifestyle and cultural influences on the behaviour (Senior and Bhopal 1994). However, only a small number of research studies exist that employ qualitative or mixed methods to provide a deeper insight into the infant feeding experiences of IPAB mothers and the meaning behind the infant feeding choices that they make.

Meddings and Porter (2007) conducted a review of the literature to investigate what was known about the intentions and decisions of Pakistani women regarding infant feeding. The authors noted that literature on Pakistani mother's infant feeding in the UK was minimal, therefore literature was used in the review that did not specifically relate to Pakistani women, but literature was included '*where it could be generalised to Pakistani and other populations'* (Meddings and Porter 2007:328). Little information is provided about the other populations included. Although entitled '*Pakistani women: feeding decisions'* the study does not provide findings on this sub-group. This can be attributed to the fact that the review did not include any studies on Pakistani mothers. The review does state that the Pakistani community are reluctant to give colostrum to their new-born

and those Muslim women '*are unwilling to expose their bodies'* (Meddings and Porter 2007:330). It is unclear where this information was obtained from but points to potential barriers to Pakistani mothers initiating and continuing breastfeeding.

Using questionnaires, Burton-Jeangros (1995) explored infant feeding attitudes, knowledge and practices amongst Pakistani mothers. Little detail is provided on the methods used in the above study. Authors state that semi-standardised questionnaires were used and that mothers were interviewed in their homes. However, information on the tools and the questions asked are not disclosed. The study concluded that most of the sample of Pakistani mothers had initiated breastfeeding, however by eight weeks, the majority were bottle feeding. Reasons for infant feeding choice were not explored. A small minority of mothers did not give colostrum to their infant; however, the study does not explore reasons as to why this may be. Data pertaining to advantages and disadvantages of breastfeeding and bottle feeding are presented by the authors, however it is unclear how this data was collected; whether it was an open-ended response format or whether mothers were given a list of advantages and disadvantages and were asked to 'agree' or 'disagree' to statements. Further, it is unclear whether the cited advantages and disadvantages of feeding methods had a bearing on the choice of feeding or whether other factors played a role. Some mothers identified barriers to breastfeeding such as not knowing how much milk the baby was taking and that the mother had to watch her diet while breastfeeding (Burton-Jeangros 1995). Pakistani mothers also cited the advantages bottle feeding afforded; such as addressing the embarrassment associated with breastfeeding in front of other family members or friends or public and allowing sharing the feeding with other family members (Burton-Jeangros 1995).

The paper explored infant feeding information and support. Alarmingly, most of the Pakistani mothers in the sample had not spoken to any health professional about infant feeding in their latest pregnancy. Most of the mothers had not discussed infant feeding with their husbands either. A

small minority of the sample had discussed infant feeding with other female relatives (Burton-Jeangros 1995). The findings begin to build a picture of Pakistani mothers' infant feeding knowledge, attitudes and practices. However, there are questions that remain unanswered and may well be due to the constraints of the semi-standardised questionnaire that did not allow further exploration of important findings that emerged within the study. Some mothers discarded colostrum in the sample. Given the health benefits of administering colostrum to new-borns (WHO 2003) it is important to understand why mothers were discarding colostrum, and whether such practices still exist today. The majority of the mothers in Burton-Jeangros' (1995) sample had not spoken to a health professional about infant feeding needs. Further exploration, particularly in terms of whether mothers experienced barriers in doing so or whether they preferred gaining such information from other sources is required.

In 1997, Catherine Littler, a midwife working in Tower Hamlets, London also found the practice of discarding colostrum occurring in a sample of Bangladeshi mothers. Littler's (1997) study provides further information about discarding colostrum. There was recognition that little was known about the factors that affected feeding practices amongst Bangladeshi mothers. Only a small minority of women were aware of the attributes of colostrum, with most mothers describing it as thin, white water (Littler 1997). Mothers discussed not giving the 'thin, white water' and disposing of the early milk into the sink or during bath times. Mothers initiated breastfeeding on the third day when the breast was fuller with 'thick full milk' (Littler 1997). Mothers had not discussed infant feeding with their husbands. Some mothers had noted that their mothers-in-law, mothers and sisters had influenced their choice of feeding (Littler 1997).

Findings such as the above set the foundations to explore the cultural and social factors that influence South Asian mothers' infant feeding practices and provides a story behind varying infant feeding outcomes.

Just under a decade after Littler's (1997) work, Condon and colleagues (2003) explored, qualitatively, the cultural influences on breastfeeding practices amongst Pakistani mothers. Mothers spoke about the health benefits of breastfeeding; however, Pakistani mothers were divided about whether colostrum should be given to the infant or not, with most mothers stating that it should be discarded. These mothers also spoke about the inadequate quality of milk that was often associated with the mother not eating a good diet (Condon et al. 2003). Condon and colleagues (2003) report on the difficulties of feeding outside the home experienced by Pakistani and Bangladeshi mothers, which was mainly to do with issues of modesty. Muslim mothers often cited their religion as a motivating factor to breastfeed. The above studies highlight the importance of understanding the social and cultural context of infant feeding. This is particularly important as there may be socially and culturally specific factors that impact on infant feeding amongst IPAB mothers.

Ingram and colleagues (2008) specifically explored the barriers to exclusive breastfeeding in Black and Minority ethnic groups in the UK. Although there is no indication in the paper which individual sub-groups were involved, the translation of the questions into Punjabi, Bengali and Urdu indicates that the 'South Asian' group would have most likely consisted of IPAB mothers. The findings highlighted that most of the South Asian mothers were aware of the benefits of breastfeeding; however, there was a minority that introduced water and/or solid foods from the age of four months old. Barriers to exclusive breastfeeding cited by South Asian mothers were a lack of support with housework and other family commitments that inhibited breastfeeding (Ingram et al. 2008). This paper did not ask mothers about the practices related to administering or discarding colostrum like Littler (1997), Burton-Jeangros (1995) and Condon et al. (2003) did.

Twamley et al. (2011) conducted a study of UK born ethnic minority womens' experiences of feeding their infant and found that breastfeeding was time consuming compared to bottle feeding and thus was seen as a chore. South Asian mothers who lived in the extended family (within their in-laws' family) reported a pressure to formula feed. South Asian mothers also stated an embarrassment to breastfeed particularly in front of visitors coming to the home and in public (Twamley et al. 2011). Interestingly, health professionals voiced concerns about mothers delaying initiation and discarding colostrum however this practice was not borne out in the interviews with the mothers. It is unclear from the study whether mothers were specifically asked about whether they discarded colostrum or not or whether mothers' reports of breastfeeding initiation were taken to mean that colostrum was administered. The study above sheds light on the importance of considering the context within which South Asian mothers feed their infants. All mothers were aware of the health benefits of breastfeeding but the pressure to formula feed from the extended family and embarrassment of feeding in front of visitors in the home impacted infant feeding.

In 2012, several papers were published around infant feeding and South Asian mothers. Choudhry and Wallace's (2012) work built on that of Twamley and colleagues (2011) and sought to understand the specific social and cultural barriers that existed in a sample of Pakistani mothers living in the UK (Choudhry and Wallace 2012).

The paper focused on the role of acculturation; '*the extent to which people from one culture adapt to or accommodate their behaviour and thoughts and perceptions of the norm of second culture*' (Rassin. et al. 1993:p29) and how this influenced infant feeding behaviours. Studies from the US have long confirmed the detrimental effects of acculturation on breastfeeding behaviours (Ahluwalia et al. 2012). Choudhry and Wallace (2012, See Appendix 1) were the first to highlight the potential detrimental role that acculturating to the UK may have on Pakistani mothers breastfeeding behaviours. Low acculturation levels to the UK were protective of breastfeeding. Mothers who displayed such low levels of acculturation were aware of living in a formula feeding culture but it had little influence on their breastfeeding behaviours. These mothers drew upon

South Asian cultural teachings about the benefits of breastfeeding to inform their own choice of feeding. Mothers who demonstrated high levels of acculturation or those that could be classified as bicultural (showing similar levels of acculturation to the culture of the UK and the South Asian culture) experienced a need to merge their feeding to fit in with the perceived norm of the UK, which mothers felt was formula feeding. All mothers regardless of acculturation experienced conflict between the information they received about breastfeeding being the best form of feeding for their baby and their role as a daughter-in-law. Often the role of the daughter-in-law was incompatible with breastfeeding their infant, because they had to attend to competing tasks as a daughter-in-law (i.e. household chores). The work highlights a different dimension to exploring the social and cultural context of infant feeding amongst South Asian mothers, and calls for understanding the immigration experience and the acculturation process that may influence infant feeding.

The findings above contrast with the findings of Williamson and Sacranie (2012) who found that in the small sample of women in their study, those that were practising Muslims relied heavily on the religious scriptures to inform their choice to breastfeed. Such teachings were seen to complement the biomedical information they were given about the benefits of breastfeeding which in turn strengthened their decision to breastfeed. In this instance, it can be said that Islam, and those that fully practice it may be protected from sub-optimal breastfeeding outcomes.

Although several systematic reviews exist on factors that influence infant feeding (for example, Victora et al. 2016, De Jager et al. 2013, Meedya, Fahy and Kable 2010), these reviews do not provide information on whether the factors identified are relevant to mothers from ethnic minority groups such as those from the South Asian sub-groups. To the knowledge of the authors, there are no published systematic reviews on the factors that influence infant feeding practices of IPAB

mothers living in the UK. The review conducted by Meddings and Porter (2007) on Pakistani feeding decisions reveals very little information about Pakistani mothers' feeding decisions.

Sharma and Byrne (2016) have recently published a review of factors and barriers that influence early initiation in South Asia (with most of the studies from India and Pakistan). Given that a substantial proportion of non-UK born mothers are from the South Asian background (ONS 2017) it is interesting to explore these factors in more detail. The review revealed several individual, health, socio-economic and geographical factors that influenced breastfeeding initiation within one hour after birth (Sharma and Byrne 2016). A summary of the findings from the review follows. At an individual level, the birth order, previous birth interval, being a teenage mother and having a male child were associated with early initiation of breastfeeding. In India and Pakistan, first time mothers were less likely to initiate breastfeeding within one hour after birth, and delayed initiation was common amongst Bangladeshi mothers of five children or more. Health factors influenced the practice or non-practice of early initiation of breastfeeding. The mother's ill health was implicated in the delay of breastfeeding initiation; this delay was also experienced when infants were ill. Delivery by caesarean section was cited as a barrier to early initiation of breastfeeding. There were factors related to a mother's access to antenatal and postnatal check-ups, and home deliveries negatively impacted breastfeeding initiation.

The review did identify specific cultural factors that may help understand the sub-optimal breastfeeding practices of South Asian mothers. There was a lack of information and associated misconceptions about breastfeeding, a lack of knowledge about the important of early initiation of breastfeeding and the cultural misconception that water must be given was observed in Bangladesh (Sharma and Byrne 2016). Breastfeeding was started at a specific time after birth and at the advice of a holy priest, the use of prelacteal feeds and discarding colostrum and the influence of the mother-in-law all delayed the initiation of breastfeeding (Sharma and Byrne 2016). The authors do highlight that the review experienced a lack of strong quality studies (Sharma and

Byrne 2016) therefore this limits the strength and generalisability of the findings. Nonetheless, the review is a crucial step in highlighting some of the factors that may inhibit South Asian mothers to initiate breastfeeding and to breastfeeding exclusively.

As it stands, the literature on infant feeding and South Asian mothers is disjointed. Large scale surveys adopt an ethnocentric approach and conclude that this sub-group fare better on many breastfeeding outcomes compared to the White population. However, examination of breastfeeding outcomes within the ethnic minority group suggests that they are vulnerable to reduced rates of breastfeeding and may require support. Indeed, smaller studies that adopt qualitative methods reveal specific social and cultural factors that may explain the reduced rates of breastfeeding.

1.6 The South Asian cultural context of feeding

An aspect that is not always paid attention to is the context within which South Asian mothers make infant feeding decisions. Pregnancy and childbirth are almost universally associated with culturally based ceremonies and rituals (Choudhry 1997). There are several traditions that exist with respect to breastfeeding. This is complicated by the fact that some traditions are culturally rather than religiously prescribed, nonetheless, these traditions are important to their followers and should not be ignored (Zaidi 2014).

For Muslim mothers, breastfeeding is not simply just a nutritional or health care choice, but has a religious basis (Roberts 2003). Islam recommends breastfeeding for up to two years (Gatrad 1994). However, there are many challenges that can prevent Muslim mothers from following the Islamic teachings on breastfeeding (Zaidi 2014). Many Muslim mothers discard colostrum, believing it to be harmful (Gatrad 1994). Mothers may give their baby sugar and water instead (known as 'ghutti' or prelacteal feeds) before starting breastfeeding on the second or third day. Such practices are founded on cultural rather than religious teachings that are passed down the generations (Gatrad 1994). There is a strong emphasis on modesty in Islam (Shaikh and Ahmed 2006). Maintaining modesty while breastfeeding in public (such as a hospital) may be challenging for some women, prompting them to bottle feed (Zaidi 2014).

Within the Muslim community, the practice of prelacteal feeds, (called 'tehneek' or 'Ghutti'), is performed soon after the baby is born and before initiation of breastfeeding (McKenna and Shankar 2009). Islamic and Hindu Religious scriptures advise giving prelacteal feeds to the new-born to welcome the child into the family and as a way of passing on virtuous qualities to the child (McKenna and Shankar 2009). For this reason, the prelacteal feed(s) are administered by a respected member of the family. In Hindu cultural and religious beliefs, prelacteal feeds are thought to have positive effects on the baby's gastrointestinal and genitourinary systems

(McKenna and Shankar 2009). It is unclear whether feeding of prelacteal feeds is a one-off occurrence or a continued practice that mothers engage in. Amongst some Hindu mothers, colostrum is discarded because of a belief that it may be difficult for the baby to swallow, or that it is old milk (McKenna and Shankar 2009). Both prelacteal feeds (Khanal et al 2013) and discarding colostrum (Rogers et al 2010) impact on optimum breastfeeding initiation and exclusivity. Thus, religious and cultural traditions (such as those mentioned above) have strong influences on infant feeding choice (Simmie 2006) and need attention in terms of how breastfeeding can be supported in the context of such practices.

The family context is important in the South Asian culture (Anto-Awuakye 2009). For this reason, this context needs acknowledgement to provide an understanding for the discussions on infant feeding. Within the South Asian family, the care of the infant extends beyond the mother and father to both maternal and paternal relatives (Anto-Awuakye 2009). Traditionally, women get married into their in-law's family and they may live within that family unit for a short or extended period. Although there is some indication that this may be slowly changing as marriages of choice (as opposed to arranged marriages) become more common. However, living within the in-law's family is still practised by some South Asian individuals in the UK today. In the context of infant feeding, it can provide a powerful support system for a new mother. In extended households, grandmothers play a key role in infant feeding and care, and labouring mothers prefer an older female such as their mothers or mothers-in-law in attendance, rather than their husbands (Gatrad 1994, Patel, Banerjee and Kaletwad 2013).It has been noted in past literature (for example, Twamley et al. 2011 Choudhry and Wallace 2012,) that grandmothers/mothers/mothers-in-law may have a significant role in infant feeding choices. Grandmothers are also seen as the transmitters of social, cultural and religious teachings within the family. More recent research has found that grandmothers have the potential to influence exclusive breastfeeding (Negin et al. 2016). In the South Asian context, grandmothers have been shown to be enthusiastic about breastfeeding (Ingram, Johnson and Hamid 2003) which contrasts with some of the findings

presented above by Twamley and colleagues and Choudhry and Wallace (2012). For this reason, it is important to understand the role of grandmothers in the context of infant feeding practices in the South Asian communities. The influence of grandmothers on breastfeeding outcomes has been mixed with some having potentially positive influences (Ingram, Johnson and Hamid 2003) and others reporting negative influences often resulting in grandmothers supporting formula feeding as a suitable way to feed the baby (Choudhry and Wallace 2012, McFadden, Renfrew and Atkin 2012). It has been found in the author's previous work (Choudhry and Wallace 2012) that grandmothers are the gatekeepers to accessing mothers for recruitment in a study and often speak on their behalf (particularly if the mothers are non-UK born residents). For this reason, it is of value to consider the family context and involve members from the family context (such as grandmothers) to provide a full picture of the infant feeding experiences and practices experienced by IPAB mothers living in the UK.

1.7 Immigration and Acculturation

Research on ethnicity and infant feeding practices has not always differentiated between UK and non-UK born mothers even though they may have varying feeding outcomes (Hawkins et al. 2008). This is evident in the Infant feeding surveys where there has been little differentiation amongst UK and non-UK sub-groups within ethnic sub-groups. Foreign-born population health has been said to be slightly worse than that of the native-born population (Jasso et al. 2004). However, this contrasts with breastfeeding outcomes. Immigrant mothers in the US initiate breastfeeding at much higher rates than their US-born counterparts (Celi et al. 2005). This was also true of those mothers born in the UK. In the UK, it was found that first and second-generation mothers were less likely to start breastfeeding than non-UK born mothers (Hawkins et al. 2008). Others have shown that breastfeeding outcomes within the same ethnic group can vary considerably by country of birth.

A quantitative study of women in 2002 revealed that the initial method of feeding was significantly different between UK and Non-UK born Pakistani mothers. There were significantly more mothers exclusively breastfeeding in Pakistan than in the UK (Sarwar 2002). The majority of those mothers in the UK breastfed for less than a month whilst those in Pakistan did so for 6 months or longer. In Pakistan, breastfeeding was commonly practised, but for mothers in the UK, bottle feeding predominated (Sarwar 2002). Further, maternal health behaviours vary with the length of residency in the UK. For every additional five years spent in the UK, mothers were 5% less likely to breastfeed at four months (Hawkins et al. 2008). Such findings call to explore how immigration may influence infant feeding practices of mothers living in the UK.

A lot of the available literature has drawn associations between immigration status and breastfeeding behaviours (e.g. Hawkins et al. 2008); however adopting such an approach means that there is little understanding for why immigration has such a detrimental effect on health behaviours. The concept of acculturation provides a useful framework to understand the influence of immigration on breastfeeding behaviours. Acculturation has been used to refer to the '*process of cultural and psychological change that results following a meeting between two cultures*" (Sam and Berry 2010: 472), and research has highlighted that the process has detrimental effects on various health behaviours including breastfeeding (Ahluwalia et al. 2012).

It is beyond the scope of the thesis to discuss in detail about the debates that surround measurement of acculturation, but a brief discussion will be had to introduce some of the key points that need consideration when measuring acculturation. Several different methods have been adopted to conceptualise and measure this phenomenon (Lopez-Class, Castro and Ramirez 2011).The majority of the acculturation scales derive from the US where most of the acculturation literature is centred. The majority of publicly available acculturation scales are targeted to specific sub-groups of the population (Celenk and Van de Vikver 2011), and there continues to be a lot of discussion about which scales are most appropriate for sub-groups. Proxy measures of acculturation status have widely been used such as immigration status, language use and length

of residency (Thomson, Hoffman and Goetz 2009). Such measures have been criticised for not capturing the core elements of acculturation such as attitudes and behaviour which are often affected during the acculturation process (Thomson, Hoffman and Goetz 2009).

Research has focused on the unidimensional versus bidimensional conceptualisation of acculturation. Unidimensional conceptualisations posit that acculturation is the process of moving from one cultural identity (i.e. ethnic identity) to the other (i.e. mainstream cultural identity, Kang 2006). However, this conceptualisation is strongly criticised in the literature because it assumes that individuals can only hold on to one cultural identity at a time (Lopez-Class, Castro and Ramirez 2011). Due to this limitation, the literature made way for bidimensional/multidimensional models.

The bidimensional conceptualisation of acculturation does not conceptualise acculturation along a continuum of cultural identity from one end to the other (like the unidimensional approach), instead it proposes an independence assumption (Kang 2006). The independence assumption proposes that the maintenance of ethnic identity is independent from the development of mainstream cultural identity (Kang 2006). It is generally accepted that bidimensional/multidimensional models of acculturation capture more of the acculturation process than previous unidimensional models did, and for this reason are most appropriate to use when assessing acculturation (Abraido-Lanzo et al. 2006). In the context of this study, the bidimensional approach allows individuals to be attached to their own culture (South Asian), the culture of the UK or both.

Much of the acculturation literature has been based in the US, and although there has been recognition in the UK that immigration status impacts health behaviours including breastfeeding (Hawkins et al. 2008) the literature has been slow to differentiate between UK and Non-UK sub-groups and even slower to adopt the framework of acculturation when designing research studies.

Acculturation is often viewed as an inevitable and important part of adapting to a new society, but it may not be the primary reason for women's breastfeeding attrition (Hufton and Raven 2016). It may be the mother's abilities to continue to engage with cultural practices is affected rather than their cultural beliefs relinquishing (Hufton and Raven 2016). The author's previous work (Choudhry and Wallace 2012) was one of the first to explore infant feeding experiences amongst Pakistani mothers within an acculturation framework. It was found that some distinctions in infant feeding beliefs existed amongst those who displayed low levels of acculturation to the UK and those that were acculturated both to the UK and their own country and those that displayed high levels of acculturation. For example, those who displayed low levels of acculturation were aware of living in the formula feeding culture of the UK but used the pro-breastfeeding teachings of their culture to inform their decision to breastfeed (Choudhry and Wallace 2012). Whilst those who displayed high levels of acculturation to the UK informed their choice of feeding on the perceived norm of the UK which was often seen as formula feeding (Choudhry and Wallace 2012). For this reason, there is a strong need to understand the kind of influence acculturation may potentially have on South Asian mothers immigrating to the UK.

South Asia, particularly India, Pakistan and Bangladesh have some of the worst initiation of breastfeeding practices in the world (Sharma and Byrne 2016). Traditional feeding practices such as prelacteal feeds, myths about colostrum and advice that discourages breastfeeding initiation have been highlighted in a systematic review of the determinants of early initiation in South Asia (Sharma and Byrne 2016). Such findings are relevant to the UK context as the UK continues to grow as a multi-cultural society with high numbers of immigrants settling in the UK from South Asia (ONS 2017). In 2015, 1 in 8 (13.3%) of the resident population of the UK were born abroad (ONS 2017), with India and Pakistan being the second and third most common non-UK countries of birth. Those immigrating to a new country bring with them their cultural beliefs that may or may not change depending on how much they acculturate to their new host country (Choudhry

1997). Most research exploring infant feeding experiences of those immigrating to a new country such as the UK have paid little attention to how the adaptation to a new host country and culture (i.e. the process of acculturation) may influence infant feeding practices and beliefs. For this reason, it is important to understand the acculturation process and how it may impact on infant feeding practices of those immigrating to a country like the UK. In this thesis the acculturation framework will help inform the understanding of the wider immigration context and the explicit exploration of how (if at all) the process of immigration and more importantly acculturation has impacted on infant feeding decisions, beliefs and behaviours of IPAB mothers.

1.8 Understanding Health Behaviour- the Breastfeeding perspective

Health behaviour theories have allowed huge gains to be made in identifying what it takes to change health behaviour (Sheeran, Klein, Rotham 2016). Such theories are a family of psychological models that have been used to understand and predict health behaviours (Ryan, 2012). Michie et al. (2014) have identified 83 theories comprising more than 1000 constructs relevant to health behaviour change. With a wealth of theoretical information on how to change health behaviour, it is surprising that interventions to improve infant feeding behaviour have seldom made use of behaviour change theory (McInnes et al. 2013).

Where breastfeeding research has used psychological theory, the theory of planned behaviour (Ajzen 1991) seems to be the most common (e.g. Armitage and Connor 2001, Swanson et al. 2011, Swanson and Power 2005, Bartle and Harvey 2017). At the centre of this theory is the role of the individual's intention to perform a given behaviour. In general, the stronger the intention to engage in behaviour the more likely it is to occur (Ajzen 1991). An individual's attitude towards the behaviour, the subjective norm (the perceived social pressure to perform or not to perform the behaviour) and perceived behavioral control (i.e. the perception of the ease or difficulty of the behaviour) predict intention which in turn predicts the likelihood of that behaviour occurring (Ajzen 1991). Application of this theory to breastfeeding has found that attitude, subjective norms

and perceived behavioural control were significant predictors of breastfeeding intention (Guo et al. 2016). Intention was a strong predictor of breastfeeding behaviour (Guo et al. 2016).

The application of this theory to South Asian mothers' infant feeding behaviours has echoed similar findings, where feeding intentions were significantly predicted by modifiable variables from the theory of planned behaviour such as attitudes, descriptive norms and self-efficacy (Cabieses et al. 2014, Lawton et al. 2012). However, the theory of planned behavior and health behaviour theories in general focus more on the factors important at an individual level but there is little scope for understanding the wider social and cultural factors. This is a particularly pertinent issue when wanting to understand infant feeding amongst South Asian that may be important in impacting infant feeding behaviours such as those presented by Sharma and colleagues and others (e.g. Gatrad 1994, McKenna and Shanker 2009) earlier on. This is a critical issue, and even more so for South Asian sub-groups particularly as culture is seen to play a key role in infant feeding practices (Choudhry and Wallace 2012). For this reason, a behaviour change theory that incorporates the societal and cultural context in promoting optimal feeding is critical amongst South Asian sub-groups. Without addressing such contexts interventions to support the above sub-group will be ineffective in promoting optimal feeding. An approach that puts the cultural and societal context at the centre of behavior change is the REPLACE approach (Barrett et al. 2015). A discussion of its application to breastfeeding amongst IPAB will be had later on in the thesis (Chapter 8).

1.8.1 A conceptual framework to understand infant feeding amongst South Asian sub-groups

Given the multitude of factors that may impact on IPAB mothers' infant feeding practices, it is beneficial to adopt a conceptual framework to organize and understand the levels at which such factors may have an impact.

Hector and colleagues (2005) have devised a conceptual framework of factors affecting breastfeeding which is based on the school of ecological models (i.e. the work of Tiedje et al. 2002). Ecological models of breastfeeding examine factors traditionally related to breastfeeding such as the mother/infant and the family but also include mesosystem and exosystem sources of influences on families (Tiedje et al. 2002) such as healthcare delivery system, the community and the societal and cultural context. Hector and colleagues (2005) propose several levels where factors may impact on breastfeeding. Individual, group and society level factors interact to have an impact. Individual levels factors relate directly to the mother, infant and the 'mother-infant dyad'. These include mothers' intentions to breastfeed, breastfeeding knowledge, skills, parenting experience, the birth experience health status of both the mother and infant and he nature of early interaction between the mother and infant (Hector et al. 2005). Many women may experience suboptimal lactation due to various biological factors (Lee and Kelleher 2016); it is important to note that Hector et al. (2005) do not mention biological factors within the discussion of individual level factors. However, such factors could come under the '*attributes of the mother*' strand that exists within the individual level theme and this is where they have been considered throughout this thesis. Group level factors are attributable to the environments in which mothers and infants find themselves. Environments with a direct influence on mothers and infants include; the hospital and health facilities (including providing professional support) which may influence early feeding practices (Hector et al. 2005). The home and peer environment where factors such as size of household, family circumstances, partner attitudes and support and peer support affect mother's ability to engage in infant feeding practices (Hector et al. 2005). The work environment in which policies and facilities such as work hours and support for onsite expression and storage of breast milk influences mother's ability to combine work and breastfeeding (Hector et al. 2005). The community environment is also included in the 'group level factors' and this relates to the extent to which breastfeeding is recognised as a norm and supported by facilities and policies in public places (such as breastfeeding friendly place, parenting rooms in shopping centres etc.). Societal level factors influence the acceptability and expectations about breastfeeding (Hector et al. 2005).

Thus, it is evident that factors influencing infant feeding practices are potentially far reaching. Figure one summarises the conceptual framework for factors affecting breastfeeding practices proposed by Hector et al. (2005).

Figure 1- A conceptual framework of factors affecting breastfeeding practices (Hector et al. 2005).

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Hector and colleagues' (2005) model provides a useful framework to appreciate the multilevel factors that work to facilitate or hinder infant feeding. To understand the infant feeding practices and experiences amongst South Asian mothers, particularly IPAB mothers, the social and cultural context within which such practices take place needs to be appreciated. The use of qualitative enquiry would allow this. However, most research with these sub-groups has been quantitative. Such an approach is beneficial in quantifying various infant feeding outcomes or infant feeding related factors against various ethnic sub-groups and identifying where differences exists, but does not provide richer more reflective answers as to why such differences exist or certain sub-groups behave in certain ways, or how infant feeding choices are made and maintained. Given the findings of authors such as Littler (1997) and Choudhry and Wallace (2012) there is a strong impetus to explore the social and cultural context in more detail that may be inhibiting optimal infant feeding in these sub-groups.

1.9 Chapter Summary

The literature discussed in this chapter has demonstrated that there are significant health and economic benefits for breastfeeding. Policy at a global and national level has been designed to support mothers to optimally feed their babies. Variations in breastfeeding outcomes amongst sub-groups have received a lot of focus in the literature, with the conclusion that ethnic minority groups are at a breastfeeding advantage compared to White mothers. Closer examination of the South Asian group reveals that Indian mothers have consistently been reported to have the breastfeeding advantage but Pakistani and Bangladeshi mothers fare worse in their breastfeeding outcomes compared to Indian mothers. The latest IFS merges the sub-groups above noted to have varying breastfeeding outcomes under the broad category of South Asian. Whether such variations still exist remains to be explored.

Facilitators and barriers to breastfeeding are very well known in the infant feeding literature, yet there is still a surprising gap in the literature with regards to the South Asian population. Given that infant feeding outcomes vary amongst IPAB mothers there has been little systematic investigation of the facilitators and barriers that may impact breastfeeding amongst these sub-groups. The cultural and social context of infant feeding amongst South Asian mothers along with how the process of acculturation may affect South Asian mothers in the UK is under-researched. Designing research within the acculturation framework may help to understand the infant feeding practices of those mothers immigrating to the UK from South Asia.

Up to date understanding about how IPAB mothers living in the UK feed their babies is required, what influences their infant feeding practices and what their experiences are of infant feeding. Currently, understanding of these issues is limited to older studies that provide conflicting findings.

There has been significant interest in the literature regarding infant feeding in the last two decades. Predominantly this focus has been on maternal and child health outcomes as well as the socio-demographic variables associated with infant feeding practices (Hufton and Raven 2016). Less focus has been on the personal and socio-cultural implications of such practices and the reasons behind why mothers adopt a feeding method (Hufton and Raven 2016). Of the research that does explore the complex factors associated with infant feeding practices, most focus on the behaviours and experiences of White British mothers (Hufton and Raven 2016). What else is apparent is that both quantitative and qualitative methods alone are not enough to provide a comprehensive picture of the infant feeding practices and experiences of IPAB mothers.

1.10 Overall aims of the thesis based on the literature discussed

The overall aims of the thesis are to:

Aim one: Describe the infant feeding behaviours of IPAB mothers living in the UK

Aim two- Explore antenatal beliefs and postnatal behaviours of IPAB mothers living in the UK.

Aim three: Collate and analyse the existing literature on the factors that influence IPAB mothers' infant feeding practices.

Aim four: Understand the infant feeding beliefs, practices and experiences of IPAB mothers living in the West Midlands

Aim five: Define the next steps for intervention development to support IPAB mothers to optimally feed their infant.

2 Epistemological paradigm

2.1 Chapter overview

As has been presented in the previous chapter, the aims of the thesis were to describe feeding behaviours and beliefs, describe the existing literature on the influences of infant feeding amongst South Asian mothers, understand the infant feeding beliefs, experiences and practices of IPAB mothers living in the UK and to provide recommendations for an intervention that would support infant feeding amongst these sub-groups. With such aims it is evident that the sole use of quantitative or qualitative methods alone would be inadequate. This is because although, quantitative methods such as those adopted by large surveys can highlight differences and describe feeding behaviours, they do not provide information about the societal and cultural context within which infant feeding practices and experiences occur. For this reason, a mixed method approach was thought most suitable to address the research gaps pertaining to infant feeding amongst IPAB mothers. Before addressing how mixed methods will be used, it is important to understand the epistemological paradigm within which this thesis is positioned.

A brief discussion about quantitative and qualitative approaches will be presented and then the 'paradigm wars' will be presented which lays the foundation for the mixed methods approach.

Thomas Kuhn (1962) was responsible for the popularity of paradigms as a framework for highlighting researchers' beliefs about their efforts to create knowledge (Morgan, 2007). Paradigms are distinctive belief systems that influence how research questions are asked and answered. For this reason, researchers are encouraged to embed their research in an appropriate paradigm as this has implications for how the research questions will be answered. Without nominating a paradigm there is no foundation for choices regarding methodology, methods, literature or research design (McKenzie and Knipe 2006).

Research has traditionally adopted the positivist (quantitative) or constructivist (qualitative) paradigms to understanding research phenomena (Tashakkori and Teddie 2008). Quantitative researchers hold the view that social research should adopt a scientific method, and broadly speaking, adopt techniques associated with gathering, analysing, interpreting and presenting numerical information (Tashakkori and Teddie 2008). The positivist paradigm is associated with the deductive approach and assumes that there is one reality that can be identified through objective measurement such as questionnaires and surveys. This has been the case for understanding infant feeding. Large surveys such as the IFS have quantified infant feeding outcomes and have identified variations between (and sometimes within) sub-groups. However, such an approach may not always provide answers as to why the variations exist and mothers' reasons for infant feeding choice.

In contrast, qualitative researchers (often associated with the constructivist paradigm) adopt techniques associated with gathering, analysing, interpreting and presenting narrative information. The constructivist paradigm is based on the inductive approach. Constructivists believe that researchers individually and collectively construct meaning of the phenomena under investigation. They believe that there are multiple realities constructed by the participants, and their approach encourages an interpretative stance where the goal is to understand the meanings voiced by participants and their construction of reality (Morgan 2007). Approaches include interviews and focus groups. Some research exists looking at the infant feeding experiences and practices of South Asian mothers, however not all studies (particularly those that have come later) have asked mothers about the detrimental practices such as discarding colostrum and administering prelacteal feeds that are known to exist amongst the South Asian sub-group. Thus, understanding of South Asian mothers' experiences of infant feeding is incomplete.

Such contrasting paradigms and their underpinning assumptions led some to question whether the two paradigms (positivist and constructivist) and their associated methodologies (quantitative and qualitative) could be combined in research (Evans, Coon and Ume 2011), leading to the 'paradigm

wars' (Shannon-Baker 2016). Research paradigms are directly associated with appropriate research methods. If the underlying premise of different paradigms conflict with one another, the methods associated with those paradigms cannot be combined; dubbed the incompatibility thesis (Tashakkori and Teddie 2008). However, some suggested that combining the two methods was possible, which lay the foundation for a third methodological movement (Shannon-Baker 2016), that complements the existing quantitative and qualitative traditions (Tashakkori and Teddie 2008). This approach encourages the use of whatever qualitative and quantitative methodological tools are required to answer research questions effectively (Tashakkori and Teddie 2008), and yields both qualitative and quantitative data (Cresswell and Plano Clark 2007). The philosophical paradigm 'pragmatism' focuses on what is the truth regarding the research question under investigation (Tashakkori and Teddie 2008); pragmatism is orientated 'toward solving practical problems in the "real world" (Feilzer 2010) rather than assumptions about the nature of the knowledge (Shannon-Baker 2016). The paradigm of 'pragmatism' has strong associations with mixed methods research.

Mixed methodology, where qualitative and quantitative approaches (or components) are used together in a single study or series of related studies (Bishop 2015) is an underutilised approach (Ritchie and Lewis 2003). This is surprising given that when both approaches are combined a much broader and in-depth picture of a phenomena can be explored that would not be possible if research was dependent on one approach or the other approach. Thus, mixed methods, provides a powerful way in which to understand the behaviour of sub-groups most in need of breastfeeding support and who in the past have been hard to reach.

Thus, this thesis adopts a pragmatic approach and adopts the most appropriate methodology to address the aims in question. The thesis presents four studies that address the first four aims of the study outlined in chapter one. Aim five is addressed in chapter eight. Table one presents the title of each study, the corresponding aims and the methods adopted to address each aim.

Table 1 – Chapter title, thesis aims and methodological approach.

Chapter title	Aim	Method Adopted
Chapter 3: Breastfeeding initiation, prevalence, and exclusivity outcomes of Indian, Pakistani and Bangladeshi mothers living in the United Kingdom: a secondary analysis of the 2010 Infant feeding survey.	Describe infant feeding behaviours of IPAB mothers living in the UK.	Quantitative methods to conduct a secondary analysis of existing data from the 2010 IFS.
Chapter 4: Antenatal beliefs and postnatal behaviours of Indian, Pakistani and Bangladeshi mothers: A secondary analysis of the 2010 Infant feeding survey	Describe antenatal beliefs and postnatal behaviours of IPAB mothers living in the UK.	Quantitative methods to conduct the second part of the secondary analysis of the 2010 IFS.
Chapter What factors influence infant feeding practices of Indian, Pakistani and Bangladeshi mothers living in the UK and in South Asia?	Collate and describe the existing literature on the factors that influence IPAB mother's infant feeding practices.	A systematic scoping review to collate existing literature. Qualitative methods (content analysis) to gather information from included studies. Hector et al's (2005) framework is used to understand the levels (i.e. individual, group or societal) at which various factors may influence infant feeding practices.
Chapter Infant feeding practices and experiences of Indian, Pakistani and Bangladeshi mothers living in the UK and in South Asia.	Understand the infant feeding beliefs, practices and experiences of IPAB mothers living in the West Midlands	Qualitative methods to conduct interviews with mothers and grandmothers from the IPAB sub-groups living in the UK. Hector et al's (2005) framework is used to understand the levels at which various factors may influence infant feeding practices.
Chapter 8: Infant feeding support for Indian, Pakistani and Bangladeshi mothers: Where are we now and where do we need to go?	Define the next steps for intervention development to support IPAB mothers to optimally feed their infant.	Collation of information on existing interventions draws on qualitative findings of the thesis to describe the support needs of the mothers and presents recommendations for a suitable intervention.

2.1.1 Mixed methods integration

When conducting mixed methods research it is advised that some discussion is had about how the different methods (i.e. quantitative and qualitative) will be integrated (to form the 'mix methods') and analysed (Bishop 2010). Integration may occur at several stages in the research process, including data collection, data analysis, and interpretation of results or a combination of the above (Zhang and Creswell 2013). The sequential explanatory mixed method design for the thesis is such that quantitative and qualitative approaches of the study occur in chronological order. In particular the qualitative components of the thesis will be employed to try to understand and contextualise the quantitative results. Each study will inform the next stage (and next study). For example, the questions and procedures of the IFS secondary analysis (aims one and two) will feed into the scoping review (aim three) which will feed into the in-depth, qualitative interviews (aim four), Overall the qualitative components will help understand what may be happening behinds the breastfeeding behaviours explored by the secondary analysis. This information will collectively then feed into the final aim of the thesis of defining the next steps for recommendations for suitable interventions to support infant feeding amongst IPAB mothers. For this reason each type of data will be kept analytically distinct and analysed using techniques associated with that type of data (Bishop, 2010). This approach will allow preserving the integrity of each data whilst '*capitalising on the potential for enhanced understanding from combining the sets of data and findings'* (Bishop, 2010:6) which will be presented in the final two chapters when defining the next steps for intervention development and new understandings as a result of the mixed methods approach. It is thought that the different approaches (i.e. quantitative and qualitative) will tap into and address different gaps in knowledge, thus providing diverse types of information about infant feeding amongst IPAB mothers. Therefore each empirical chapter presents its own analysis of data (i.e. chapters 3 and 4 present quantitative analysis and chapters 5 and 7 present qualitative analysis). These findings are then discussed in chapter nine within the broader context of integration and the value added to the

thesis by utilising mixed methods rather than relying solely on quantitative or qualitative methods alone (Tariq and Woodman 2013).

2.2 Chapter summary

This chapter has outlined the research paradigm and the methods adopted for the overall thesis. A discussion about the integration of the methods in thesis was had. The methods adopted to address each of the aims of the thesis will be presented in each of the relevant chapters (Chapters 3,4,5,7 and 8).

What follows in the next chapter is the first part of the secondary analysis of the IFS dataset to understand the breastfeeding behaviours of IPAB mothers living in the UK.

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3 Breastfeeding initiation, prevalence, and exclusivity behaviours of Indian, Pakistani and Bangladeshi mothers living in the United Kingdom: A secondary analysis of the 2010 Infant feeding survey (Part 1)

3.1 Chapter overview

This chapter presents the first part of the secondary analysis of the latest IFS (McAndrew et al. 2012). There is a lack of understanding about the breastfeeding behaviours of IPAB mothers living in the UK. The IFS provide a unique opportunity to be able to understand such behaviours based on a nationally representative sample of mothers.

3.2 Introduction

As stated in Chapter one, exclusive breastfeeding rates in the United Kingdom (UK) remain one of the lowest in Europe (Avery and Lazdane 2015)and vary by age, ethnicity and socio-economic status of the mother (McAndrew et al. 2012). The National Infant Feeding Survey (IFS) was commissioned by the Office for National Statistics (ONS) and provides information about the antenatal and postnatal practices adopted by mothers living in the UK. Findings from the most recent IFS conducted in 2010 revealed that older mothers were more likely to breastfeed compared to younger mothers and mothers from managerial and professional posts were more likely to be exclusively breastfeeding at birth compared to mothers who had never worked (McAndrew et al. 2012). It also showed that breastfeeding initiation, the prevalence of breastfeeding, and breastfeeding exclusivity was highest amongst mothers from minority ethnic groups (including Black, Chinese, Asian, and mixed ethnic groups) compared to White mothers. For example, 68% of White mothers breastfed exclusively at birth compared with 78% of Black mothers and 75% of Asian mothers. Importantly, this breastfeeding advantage had reduced by

one week postnatal, with 46% of White mothers feeding exclusively compared with 48% of Asian and 49% of Black and Chinese or other ethnic groups respectively (McAndrew et al. 2012).

Historically, the IFS have aggregated ethnic sub-groups into broader ethnic groups for analysis so that IPAB sub-groups are merged under the umbrella term of 'South Asian'. Aggregation at this level does not recognise that sub-groups within the South Asian classification are heterogeneous in their beliefs and behaviours (Bhopal 1997). The United Kingdom (UK) Department of Health commissioned one of the first surveys of infant feeding in South Asian families living in England between 1994-1996 which highlighted the varying infant feeding behaviours of IPAB mothers (Thomas and Avery 1997). Bangladeshi mothers were more likely to have ever breastfed (90%) compared to Indian (82%) and Pakistani (76%) mothers (Thomas and Avery 1997). The survey also reported that Pakistani mothers displayed the shortest length of breastfeeding duration compared to Bangladeshi and Indian mothers. Of those Pakistani mothers that initiated breastfeeding, 64% stopped by the time their baby was eight weeks old, compared to 54% of Bangladeshi and 48% of Indian mothers (Thomas and Avery 1997).

The findings of Thomas and Avery (1997) above need to be interpreted with caution, particularly as the association of ethnicity and breastfeeding outcomes has not controlled for socio-demographic variables. It is explained in chapter one that the highest incidences of breastfeeding are amongst older mothers, mothers from minority ethnic groups, those who left education later (over the age of 18), those in managerial and professional posts and those living in the least deprived areas (McAndrew et al. 2012). However, there are clear distinctions regarding ethnicity and socio-economic group (McAndrew et al. 2012). In the recent IFS (2012), White mothers were more likely to be in managerial and professional occupations (37%) compared to Asian (26%) and Black mothers (23%). Asian mothers were more likely to have never worked (36%) compared to 6% of White mothers. Thus, the association between ethnicity and breastfeeding is complex,

particularly as ethnicity is conflated with other socio-demographic variables (Singh, Kogan and Dee 2003). Later studies in the UK have explored the association between ethnicity and breastfeeding while controlling for socio-demographic variables such as maternal education, socio-economic status, employment and parity with varying results. For example, in unadjusted analyses, odds of breastfeeding initiation for Bangladeshi, Indian and Pakistani mothers were 3.5, 2.6 and 1.6 respectively when compared to White mothers. When analyses were adjusted for demographic, economic and psychosocial factors the odds of initiation increased for Bangladeshi (7.9) and Pakistani mothers (3.2) (Griffiths et al. 2007).Data from the Millennium cohort study, of over 18,000 mothers in the UK also showed differences between South Asian mothers and those of other ethnicities. Breastfeeding initiation and continuation patterns showed consistently higher rates for Black African mothers and consistently lower rates for Pakistani mothers (Kelly, Watt and Nazroo 2006). In 2007, Griffiths and colleagues concluded that Bangladeshi, Pakistani and White mothers were most likely to stop breastfeeding before four months (66%, 64% and 62% respectively, Griffiths et al. 2007).

A year later, Hawkins and colleagues highlighted similar findings. Higher proportions of Indian mothers were more likely to initiate breastfeeding and breastfeed for at least four months compared to Pakistani and Bangladeshi mothers (Hawkins et al. 2008). However, these findings need to be interpreted with caution. The authors merge the data of the 'Pakistani' and 'Bangladeshi' sub-groups together. These sub-groups are heterogeneous in their behaviours (Bhopal 1997) and whether the data is a true reflection of the sub-groups needs questioning.

Santorelli and colleagues, similarly merge sub-groups together, merging Indian and Bangladeshi sub-groups. This is problematic as these sub-groups in past literature have been shown to demonstrate varying feeding outcomes with Indian mothers having the favourable rates compared to Bangladeshi mothers. The authors conclude that higher proportions of Other South Asian (91.7%) initiated breastfeeding compared to Pakistani mothers (79.9%) and breastfed exclusively at four months (51%) compared to Pakistani mothers (28%). Further work is needed to understand

whether these findings are reflective of the sub-groups included in the 'Other South Asian' category or are representative of the Indian mothers who, in the past have demonstrated desirable infant feeding outcomes compared to Other South Asian sub-groups (Thomas and Avery 1997).

Given the findings to date in the literature, further work is still needed to understand the infant feeding outcomes of IPAB mothers living in the UK. Two key issues exist in earlier work; the merging of South Asian sub-groups and a lack of information of the infant feeding outcomes particularly in relation to the early days post-partum and the level of exclusivity. Past studies report on any breastfeeding (at four months) rather than breastfeeding exclusivity. Little is known about the infant feeding outcomes in the very early days post-birth. Given that the first few weeks are crucial to establishing successful breastfeeding it is important to understand this from the perspective of IPAB mothers living in the UK.

Currently, to the knowledge of the authors there is little information on whether IPAB mothers are susceptible to early breastfeeding cessation. Literature does suggest that lower numbers of Pakistani and Bangladeshi mothers breastfed at four months (Santorelli et al. 2013) but whether reduction in number of mothers breastfeeding from these sub-groups happens earlier on post-partum remains to be explored. Several reasons are cited for early cessation of breastfeeding (Rollins et al. 2016). Early support for a woman who is having difficulty breastfeeding may prevent breastfeeding discontinuation (Rollins et al. 2016).

This chapter addresses aim one of the thesis (outlined in Chapter 1) seeking to;

> Describe the infant feeding behaviours of Indian, Pakistani and Bangladeshi mothers living in the UK.

The specific research questions to be addressed were;

- *What were the breastfeeding initiation rates of Indian, Pakistani and Bangladeshi mothers living in this UK sample?*
- *What were the breastfeeding prevalence and exclusivity rates between week one and six postpartum of this sample of Indian, Pakistani and Bangladeshi mothers living in the UK?*
- *Is ethnicity independently associated with breastfeeding initiation, and with breastfeeding prevalence and exclusivity between week one and six post-partum, while adjusting for mother's socio-economic status, education, parity and mothers' age in this sample of Indian, Pakistani and Bangladeshi mothers living in the UK?*

3.3 Method

3.3.1 IFS 2010 Study design and setting

The IFS (2010) was conducted as three separate cross-sectional surveys of mothers; stage one of the survey was sent out to mothers when their babies were aged four to ten weeks old, stage two was sent out when babies were aged four to six months and stage three was sent out to mothers when their babies were aged eight to ten months (McAndrew et al. 2012). The sample for the IFS was drawn from birth registration records in the UK and covered all births registered between August and October 2010. The target sample size by stage three of the survey was reported to be 10,400 (5000 births in England, 1800 births in Wales, 1800 in Scotland and 1800 births in Northern Ireland). Births were randomly selected from all those registered in England and

Scotland during the defined sampling period (McAndrew et al. 2012). In any survey, differential non-response is likely. There is a possibility that not all mothers responding at stage one of the survey will have responded to the surveys at stage two and three. For this reason, the data in the IFS were weighted to be representative of all mothers who gave birth in the sampling period within each country by the age of mother and deprivation status of mother ('deprived' was defined as 'living in an area in the lowest quintile of deprivation as per the Indices of Multiple Deprivation, McAndrew et al. 2012).

3.3.2 Participants

The secondary analysis has been conducted on data collected at stage one as this is the only stage where data are reported by South Asian ethnicity (i.e. IPAB). At stage one, from the 30,760 questionnaires that were posted to mothers, a total of 15,724 mothers returned the questionnaire (a response rate of 51%). Of those, 583 (3.7%) women classified themselves as 'South Asian'. The majority of the mothers (n=455, 78%) lived in England, 13.7% (n=80) lived in Scotland and 8.2% (n=48) in Wales. No mothers from Ireland classified themselves as South Asian.

3.3.3 IFS 2010 survey procedure and questions

The IFS states that the stage one survey took approximately 25-30 minutes to complete and consisted of 150 questions in 12 sections. This secondary analysis concerns itself with questions from the section 'About the milk that you give your baby' which includes items about breastfeeding initiation, duration and supplementation with infant formula. At stage one of the survey, postal questionnaires were despatched to mothers' homes during September to December 2010. It was intended that the questionnaire reached the mother when the baby was six weeks old. Mothers who had not returned a questionnaire received up to three reminders over a six-week period. The questionnaires were written in English.

3.3.3.1 Secondary analysis methodology

Permission was sought and granted from the UK Data service. Authors were required to provide a 500-word summary and justification for the use of the data. Ethical approval was granted for the secondary analysis by a local research ethics committee (Appendix 1). The authors identified questions from the survey that addressed the aims and research questions of the secondary analysis and are included Appendix 1.

3.3.3.2 Variables analysed

The key breastfeeding outcome measures for the secondary analysis are described below. All variables used in the analysis were categorical. The definitions are those used in the 2010 IFS (McAndrew et al. 2012).The breastfeeding outcomes below are those calculated and presented in the dataset provided by IFS.

Incidence of breastfeeding: This refers to the proportion of babies who were breastfed initially. This includes all babies who were put to the breast at all, even if this was only once, and even if breastfeeding was supplemented by giving formula milk. It also includes giving babies expressed breast milk. The incidence of breastfeeding was assessed by the answers to these questions:

Thinking about the milk that your baby has received over the last seven days, has he/she had

Only breast milk

Only infant formula

Breast milk and infant formula

Has your baby EVER been given breast milk (via syringe, bottle or cup, etc.) or have you put your baby to the breast, even if this was only once?

Yes

No

Mothers who responded with any of the answers highlighted in bold were classified as having initiated breastfeeding. The incidence of breastfeeding was classified as 'yes breastfed' or 'no, never breastfed'.

***Prevalence of any breastfeeding*:** This refers to the proportion of all babies who were being breastfed (including being given expressed breast milk) at specific ages, even if they were also receiving infant formula, solid food or other liquids. The baby was deemed to have been breastfed at week one if breastfeeding duration was more than a week, as a binary variable (breastfed or not breastfed). Prevalence of any breastfeeding was recorded as breastfeeding at week one or not. Prevalence of any breastfeeding at week six was recorded as breastfeeding at week six or not.

Prevalence of exclusive breastfeeding: This refers to the proportion of all babies who had only ever been given breast milk up to specific ages and who had never been fed formula, solid foods or any other liquids. Prevalence of exclusive breastfeeding was assessed by the following questions;

> *How old was your baby when he or she was FIRST given something apart from milk to drink, such as water, fruit juice or herbal drink?*
>
> The response format ranged from up to 1 week to up to 11 weeks old.
>
> *How old was your baby when he/she first had any food apart from milk? (Weeks)*
>
> The response format ranged from two weeks up to 11 weeks and over.
>
> *How old was your baby when he/she FIRST received infant formula? (Days)*
>
> The response format ranged from under one week to over 11 weeks.

Mothers were only recorded to be exclusively breastfeeding if they reported that they had not given any other foods, liquids or milks apart from breast milk at the time point.

The IFS recorded breastfeeding prevalence and breastfeeding exclusivity at week one, two and week six postpartum. The secondary analysis is conducted on breastfeeding initiation, breastfeeding prevalence and breastfeeding exclusivity at week one and six. Data from national surveys suggest that these are points where mothers' breastfeeding may reduce or stop (McAndrew et al. 2012). Explanatory variables were chosen because they were theoretically significant (based on previous research) to the relationship between ethnicity and breastfeeding initiation, prevalence and exclusivity. Below each variable is described in detail.

Ethnic group: Mothers were asked to indicate the ethnic group that they most associated themselves with. The ethnic grouping question was the ONS ethnic group question that was first introduced in 2001 (McAndrew et al. 2012) and the response options for the South Asian were: Indian, Pakistani, Bangladeshi, Any Other Asian background.

Parity: All mothers were asked if their current child was their first child, and if not, how many children they had. Results were banded into the following categories; 1, 2, 3, and 4+.

Mother's Age: This was the age of mothers when they completed the stage one survey. The data are recorded in five age categories: Under 20 years of age 20-24, 25-29, 30-34 and 35 or over.

National statistics Socio-economic classification (NS-SEC): This classification was introduced for all official UK surveys and statistics in 2001 (McAndrew et al. 2012), based upon occupations rather than skill level. The mother's socio-economic status was classified into four groups; managerial and professional occupations, intermediate occupations, routine and manual occupations and never worked.

Education level: All mothers were asked the age at which they left full-time education and were classified into the following categories; 16 or under, 17 or 18 and over 18 years. Those mothers who left full-time education at 16 or under were categorised as having the lowest level of education and mothers who left education over the age of 18 represented those that had the highest educational attainment (McAndrew et al. 2012).

Mother's age, parity, socio-economic classification and age at which the mother left full-time education from here on in will be referred to as the 'socio-demographic variables' in the secondary analysis (where appropriate).

3.3.3.3 Statistical methods

Univariate analyses (frequencies and Chi-square test) were used to report the data and establish whether differences existed between IPAB mothers in breastfeeding initiation, breastfeeding prevalence and breastfeeding exclusivity (at week one and week six post-partum).

Multivariate logistic regression was used to model initiation of breastfeeding, breastfeeding prevalence and exclusivity (at weeks one and six). Explanatory variables (listed above) were included in the model if the Univariate test showed a p value of <0.05. Five models of logistic regression were run for (1) breastfeeding initiation, (2) breastfeeding prevalence at week one (3) breastfeeding prevalence at week six (4) breastfeeding exclusivity at week one and finally (5) breastfeeding exclusivity at week six. Each model had two steps. The author was interested on looking at the effect of ethnicity on various breastfeeding behaviours over and above the effect of socio-demographic variables. For this reason the socio-demographic variables were entered into the model first (step one) followed by ethnicity (step two). This method was chosen to establish the effect of ethnicity over and above the other socio-demographic variables. The 'forward' method was used to enter the variables into the logistic model sequentially. The significance level was set at < 0.05. Outcomes are presented as adjusted odds ratio (e β) with 95% confidence intervals (CI's). Multicollinearity was assessed through analysis of the correlation coefficients and the associated standard error for each variable entered in the model. The fit of the models was assessed using the Hosmer-Lemeshow goodness of fit. Diagnostic assessments used plots of a) the deviance of residuals versus estimated logistic probabilities and Cook's distances (Cook's D) versus estimated logistic probabilities. The goodness of fit testing confirmed that the logistic regression distribution was appropriate for analyses. The logistic regression results are presented with an overall evaluation of the logistic regression model (via the likelihood ratio test, score test and Wald test), the goodness of fit statistic (via the Hosmer and Lemeshow test), and the tests of

the individual predictors (via the Wald Chi-square statistic). It should be noted that there may be instances that all three tests mentioned above of the overall evaluation of the model different results. Where this occurs the likelihood ratio and score tests will be consulted (Peng, Lee and Ingersoll 2002).

All statistical analyses were conducted using SPSS version 22.0 (Statistical Package for the Social Sciences).

There was missing data for socio-economic status (n=58), age at which mother left full-time education (n=15), mother's age (n=7) and parity (n=4). Data were estimated in 73 cases using 15 imputed datasets. The Little's MCAR test (missing completely at random) was significant ($p<0.001$), meaning that the data were not missing at random. Multiple imputation was chosen for addressing missing data because it allowed for the uncertainty about the missing data by creating several different plausible datasets and then combining the results obtained from each dataset (Fichaman and Cummings 2003, Sterne et al. 2009). Sensitivity analyses showed a similar pattern of findings when cases with missing data were excluded. Data are presented for imputed models only.

3.4 Results

3.4.1 Descriptive data for mothers in the sample

The South Asian sample (N=583) consisted of 265 (45.5%) Indian, 248 (42.5%) Pakistani and 70 (12%) Bangladeshi mothers. Most South Asian mothers were aged 25-29 (n=229, 39.3%) or 30-34 (n=167, 28.6%). There was a spread across all the socio-economic groups for the South Asian mothers. However, most mothers were classified as either 'never worked' (n =189, 32.4%) or as 'managerial and professional' (n=171, 29.3%). The majority of the mothers had left full-time education over the age of 18 (n=371, 63.6%). Almost half of the mothers in the sample were first-time mothers (n=238, 40.8%). Indian mothers were mostly older (30-34 years old) than Pakistani

and Bangladeshi mothers who were mostly in the 25-29-year-old bracket. Visible differences existed in terms of IPAB mother's age, socio-economic classification and parity. The majority of Indian mothers could be classified within the 'Managerial and Professional' category (n=129, 48.7%) whilst the majority of Pakistani (n=117, 47.2%) and Bangladeshi mothers (n=25, 35.7%) had 'never worked'. Most Indian (n=123, 46.4%) and Pakistani mothers (n=92, 37.0%) were first time mothers while most Bangladeshi mothers (n=26, 37.1%) were second time mothers. (See Table 2)

Table 2-Demographic profile of the total South Asian mothers' and Indian, Pakistani and Bangladeshi sub-groups

	South Asian	**Indian**	**Pakistani**	**Bangladeshi**
	N (%)	**n (%)**	**n (%)**	**n (%)**
Ethnicity[a]	583	**265 (45.5)**	248 (42.5)	70 (12)
Age				
Under 20	5 (0.9)	1 (0.3)	3 (1.2)	1 (1.4)
20-24	88 (15.1)	22 (8.4)	53 (21.0)	13 (18.5)
25-29	**229 (39.3)**	89 (33.8)	**113 (45.5)**	**27 (38.5)**
30-34	167 (28.6)	**102 (38.4)**	45 (18.4)	20 (28.6)
35 or over	87 (14.9)	49 (18.6)	31 (12.7)	7 (10.0)
Missing	7 (1.2)	2 (0.2)	3 (1.2)	2 (2.8)
Socio-economic classification				
Managerial and Professional	171 (29.3)	**129(48.7)**	36 (14.5)	6 (8.6)
Intermediate occupations	65 (11.1)	23 (8.7)	31 (12.5)	11 (15.7)
Routine and manual occupations	100 (17.2)	47 (17.7)	42 (16.9)	11 (15.7)
Never worked	**189 (32.4)**	47 (17.7)	**117 (47.2)**	**25 (35.7)**
Missing	58 (9.9)	19 (7.2)	22 (8.9)	17 (24.3)
Age mother left full time education				
16 or under	76 (13.0)	17 (6.4)	45 (18.1)	14 (20.0)
17 or 18	121 (20.7)	39 (14.7)	61 (24.5)	21 (30.0)
Over 18	**371 (63.6)**	**204(76.9)**	**134(54.0)**	**33 (47.1)**
Missing	15 (2.6)	5 (1.8)	8 (3.2)	2 (2.8)
Parity				
1	**238 (40.8)**	**123(46.4)**	**92 (37.0)**	23 (32.8)
2	219 (37.5)	113(42.6)	80 (32.2)	**26 (37.1)**
3	76 (13.0)	20 (7.5)	44 (17.7)	12 (17.1)
4+	46 (7.9)	8 (3.0)	29 (11.7)	9 (12.8)
Missing	4 (0.7)	1 (0.4)	3 (1.2)	0 (0)

[a] Bold figures indicate modal category

3.4.2 Breastfeeding rates

The overall breastfeeding initiation rate for South Asian mothers was 94.2% (n=532), of these mothers, 48% (n=271) were exclusively breastfeeding at week one and at week six 25.9% (n=132) were exclusively breastfeeding. The prevalence of any breastfeeding at week one by South Asian mothers was 87.8% (n=496), and 76.9% (n=392) were breastfeeding when their infant was six weeks old. Univariate tests (Chi-Square) revealed that lower proportions of Pakistani and Bangladeshi mothers initiated breastfeeding, breastfed at week one and six and did so exclusively at these time points compared to Indian mothers ($p<0.001$), (see Table 3)

Table 3-Breastfeeding incidence, prevalence and exclusivity of any breastfeeding at week one, two and week six for South Asian mothers and individual ethnic sub-group

	South Asian N (%)	**Indian** n (%)	**Pakistani** n (%)	**Bangladeshi** n (%)
Incidence of breastfeeding	532 (94.2)	**257[b] (98.8)**	211 (88.7)	64 (95.5)
Prevalence of breastfeeding				
At Week one	496 (87.8)	**252 (96.9)**	187 (78.6)	57 (85.1)
At Week six	392 (76.9)	**200 (86.2)**	146 (66.1)	46 (80.7)
Exclusivity of breastfeeding				
At Week one	271(48.0)	**148 (56.9)**	100 (42.0)	23 (34.3)
At Week six	132 (25.9)	**75 (32.3)**	47 (21.3)	10 (17.5)

[b] Bold figures represent the modal category

3.4.3 Sociodemographic factors that explain breastfeeding incidence, and prevalence and exclusivity (at weeks one and six post-partum) amongst Indian, Pakistani and Bangladeshi mothers living in the UK: The results of the Logistic Regression analyses.

3.4.4 Predicting breastfeeding incidence

The effectiveness of the model was assessed by the overall model evaluation (via the likelihood ratio test, score test and Wald test) and the Goodness-of-fit test (via Hosmer & Lemeshow test). These tests suggested that the model was a better fit to the data than the null model. Table 4 provides further details of these tests for both steps of the model.

Table 4-Evaluation of the overall logistic regression model for Breastfeeding initiation

	Step one			**Step two**		
Test	χ^2	*df*	*p*	χ^2	*df*	*p*
Overall model Evaluation						
Likelihood ratio test	26.83	11	0.0005	40.01	13	0.0001
Score test	28.41	11	0.0005	26.83	11	0.0005
Wald test	30.66	1	0.0005	30.476	1	0.0001
Goodness-of-fit test						
Hosmer & Lemeshow	4.73	8	0.785	5.62	8	0.689

None of the socio-demographic variables significantly explained breastfeeding initiation amongst IPAB mothers. When ethnicity was added to the model, the logistic regression showed that Pakistani mothers were less likely to initiate breastfeeding compared to Indian mothers (Adj

OR=0.15, 95% CI: 0.04-0.55). Negelkerke's R^2 suggested that with the addition of ethnicity, 19% of the variance in breastfeeding initiation could be explained by the model, see Table 5.

Table 5-Results of hierarchical binary logistic regression of factors influencing breastfeeding initiation[c].

Model one **Stage one**				**Model one** **Stage two**			
Predictor	e β (odds ratio)	CI (95%) Lower	 Upper	**Predictor**	e β (odds ratio)	CI (95%) Lower	 Upper
Constant	34.10	9.78	119.02	Constant	111.2	20.94	591.1
Mother's age [d]				**Mother's age**			
Under 20	0.324	0.02	4.48	Under 20	0.44	0.03	6.53
20-24 years	0.709	0.20	2.43	20-24 years	0.91	0.26	3.21
25-29 years	0.644	0.27	1.52	25-29 years	0.78	0.32	1.89
30+ years	-	-	-	***30+ years***	-	-	-
Socio-economic status				**Socio-economic status**			
Managerial/Professional	4.15	0.83	20.72	Managerial/Professional	2.42	0.46	12.68
Intermediate	0.62	0.22	1.70	Intermediate	0.52	0.17	1.15
Routine/manual	1.21	0.43	3.39	Routine/manual	0.96	0.32	2.92
Never worked	-	-	-	***Never worked***	-	-	-
Parity				**Parity**			
1 child	-	-	-	***1 child***	-	-	-
2 children	0.74	0.27	1.99	2 children	0.81	0.29	2.23
3 children	0.38	0.12	1.20	3 children	0.53	0.16	1.74
4+ children	0.30	0.08	1.07	4+ children	0.39	0.10	1.42

[c] Table continues onto next page

[d] Bold indicates reference categories for the logistic regression analyses

Model one **Stage one**				**Model one** **Stage two**			
Predictor	e β (odds ratio)	CI (95%) Lower	Upper	**Predictor**	e β (odds ratio)	CI (95%) Lower	Upper
Age left education				**Age left education**			
16 or under	0.45	0.17	1.18	16 or under	0.43	0.16	1.19
17 or 18	0.77	0.29	2.00	17 or 18	0.80	0.30	2.10
Over 18	-	-	-	***Over 18***	-	-	-
Ethnicity				**Ethnicity**			
Indian	-	-	-	**I*ndian***	-	-	-
Pakistani	-	-	-	Pakistani	0.15[e]	0.04	0.55
Bangladeshi	-	-	-	Bangladeshi	0.50	0.09	2.72
Negelkerke's R^2	0.13			**Negelkerke's R^2**	0.19		

[e]significant at $p<0.01$

3.4.5 Predicting breastfeeding prevalence at week one

The effectiveness of the model was assessed by the overall model evaluation (via the likelihood ratio test, score test and Wald test) and the Goodness-of-fit test (via Hosmer & Lemeshow test). The tests suggested that the model was a better fit to the data than the null model. Table 6 highlights the evaluation of the logistic regression model.

Table 6-Evaluation of the overall logistic regression model for Breastfeeding Prevalence at week one

	Step one			**Step two**		
Test	χ^2	*df*	*P*	χ^2	*df*	*p*
Overall model Evaluation						
Likelihood ratio test	46.49	11	0.0001	66.15	13	0.001
Score test	42.11	11	0.0001	39.23	11	0.001
Wald test	31.79	1	0.0001	36.75	1	0.001
Goodness-of-fit test						
Hosmer & Lemeshow	7.52	8	0.4822	7.91	8	0.44

Mothers in managerial and professional posts were more likely to be breastfeeding at week one post-partum compared to those mothers who had never worked (Adj OR= 5.83, 95% CI: 1.86-18.24). Ethnicity was a significant predictor of breastfeeding status over and above other sociodemographic variables; Pakistani (Adj OR=0.19, 95% CI 0.08-0.43) and Bangladeshi mothers (OR=0.35, 95% CI: 0.12-1.98) were less likely to be breastfeeding at week one compared to Indian mothers. 20% of the variance in breastfeeding prevalence could be explained by the model (as assessed by Negelkerke's R^2, table 7).

Table 7-Results of hierarchical binary logistic regression of factors influencing breastfeeding prevalence at week one.

Model two **Stage one**				**Model two** **Stage two**			
Predictor	*e* β (odds ratio)	CI (95%) Lower	Upper	**Predictor**	*e* β (odds ratio)	CI (95%) Lower	Upper
Constant	10.96	4.58	26.27		30.73	10.28	91.86
Mother's age				**Mother's age**			
Under 20	0.70	0.07	6.52	Under 20	0.88	0.09	8.21
20-24 years	0.62	0.26	1.49	20-24 years	0.78	0.32	1.90
25-29 years	0.73	0.38	1.40	25-29 years	0.87	0.44	1.68
30+ years	-	-	-	***30+ years***	-	-	-
Socio-economic status				**Socio-economic status**			
Managerial/Professional	5.83[f]	1.86	18.24	Managerial/Professional	3.51[f]	1.09	11.31
Intermediate occupations	0.71	0.34	1.49	Intermediate occupations	0.62	0.28	1.34
Routine/manual occupations	1.40	0.67	2.96	Routine/manual occupations	1.14	0.52	2.50
Never worked	-	-	-	***Never worked***	-	-	-
Parity				**Parity**			
1 child	-	-	-	***1 child***	-	-	-
2 children	0.76	.39	1.46	2 children	0.81	0.41	1.59
3 children	0.63	.26	1.51	3 children	0.87	0.36	2.13
4+ children	0.48	.18	1.28	4+ children	0.63	0.23	1.69
Age left education				**Age left education**			
16 or under	0.52	0.25	1.09	16 or under	0.53	0.25	1.14
17 or 18	0.58	0.30	1.10	17 or 18	0.61	0.31	1.19
Over 18	-	-	-	***Over 18***	-	-	-

Model two **Stage one**			**Model two** **Stage two**		
Predictor	*e* β (odds ratio)	CI (95%) Lower Upper	**Predictor**	*e* β (odds ratio)	CI (95%) Lower Upper
Ethnicity					
Indian	-	--		-	- -
Pakistani	-	--		0.19[f]	0.08 0.43
Bangladeshi	-	- -		0.35[g]	0.12 0.98
Negelkerke's R^2	0.15		**Negelkerke's R^2**	0.20	

[f]*Significant at p<0.005*

[g]*Significant at p<0.005*

3.4.6 Predicting breastfeeding prevalence at week six

The effectiveness of the model was assessed by the overall model evaluation (via the likelihood ratio test, score test and Wald test) and the Goodness-of-fit test (via Hosmer & Lemeshow test). These tests suggested that the model was a better fit to the data than the null model, table 8.

Table 8-Evaluation of the overall logistic regression model for Breastfeeding prevalence at week six

	Step one			**Step two**		
Test	χ^2	*df*	*p*	χ^2	*df*	*p*
Overall model Evaluation						
Likelihood ratio test	28.675	11	0.003	47.55	13	0.0001
Score test	28.62	11	0.005	46.23	11	0.001
Wald test	29.75	1	0.0001	38.61	1	0.0001
Goodness-of-fit test						
Hosmer & Lemeshow	8.50	8	0.386	7.72	8	0.46

Mothers who left education at 16 years or under (Adj OR=0.48, 95% CI: 0.26-0.91) or between the ages of 17 and 18 (Adj OR=0.54, 95% CI: 0.33-0.90) were less likely to be breastfeeding six weeks post-partum compared to those mothers who left education later (over the age of 18). This was still true when ethnicity was entered into the model (mothers who left education at the age of 16 years or under (Adj OR=0.47, 95% CI: 0.25-0.90) or between the ages of 17 or 18 years (Adj OR=0.56, 95% CI: 0.34-0.94) were less likely to breastfeed than those who left education later). Mothers in managerial and professional posts were less likely to be breastfeeding at week six

post-partum (Adj OR=0.53, 95% CI: 0.26-1.05) compared to mothers who had never worked. Over and above sociodemographic variables, ethnicity was significant with Pakistani mothers less likely to be breastfeeding at six weeks compared to Indian mothers (Adj OR=0.34, 95% CI: 0.20-0.56). There was no significant difference between Bangladeshi and Indian mothers. With the addition of the ethnicity variable, the model explained 11% of the variance in breastfeeding prevalence at week six, see table 9.

Table 9-Results of hierarchical binary logistic regression of factors influencing breastfeeding prevalence at week six.

Model three **Stage one**				**Model three** **Stage two**			
Predictor	*e* β (odds ratio)	CI (95%) Lower	Upper	**Predictor**	*e* β (odds ratio)	CI (95%) Lower	Upper
Constant	6.34	3.19	12.58		11.01	5.11	23.71
Mother's age				**Mother's age**			
Under 20	1.34	0.16	11.28	Under 20	1.68	0.19	14.40
20-24 years	0.54	0.27	1.08	20-24 years	0.66	0.32	1.33
25-29 years	0.69	0.42	1.13	25-29 years	0.81	0.49	1.34
30+ years	-	-	-	***30+ years***	-	-	-
Socio-economic status				**Socio-economic status**			
Managerial/Professional	1.22	0.65	2.29	Managerial/ Professional	0.53	0.26	1.05
Intermediate occupations	0.60	0.30	1.16	Intermediate occupations	0.69	0.37	1.28
Routine/manual occupations	0.82	0.46	1.48	Routine/ manual occupations	1.68	0.19	14.40
Never worked	-	-	-	***Never worked***	-	-	-
Parity				**Parity**			
1 child	-	-	-	***1 child***	-	-	-
2 children	0.98	0.60	1.58	2 children	0.99	0.61	1.62
3 children	0.86	0.43	1.70	3 children	1.12	0.55	2.26
4+ children	0.77	0.34	1.74	4+ children	0.95	0.41	2.18
Age left education				**Age left education**			
16 or under	0.48[h]	0.26	0.91	16 or under	0.47[h]	0.25	0.90
17 or 18	0.54[i]	0.33	0.90	17 or 18	0.56	0.34	0.94
Over 18	-	-	-	***Over 18***	-	-	-

[h]*Significant at p<0.05*

[i]*Significant at p<0.0001*

Model three **Stage one**				**Model three** **Stage two**			
Predictor	*e* β (odds ratio)	CI (95%) Lower Upper		**Predictor**	*e* β (odds ratio)	CI (95%) Lower	Upper
Ethnicity				**Ethnicity**			
Indian	-	-	-	***Indian***	-	-	-
Pakistani	-	--		Pakistani	0.34[h]	0.20	0.56
Bangladeshi	-	-	-	Bangladeshi	0.69	0.33	1.42
Negelkerke's R^2	0.07			**Negelkerke's R^2**	0.11		

3.4.7 Predicting breastfeeding exclusivity at week one

The effectiveness of the model was assessed by the overall model evaluation (via the likelihood ratio test and score test) and the Goodness-of-fit test (via Hosmer & Lemeshow test) suggested that the model was a better fit to the data than the null model (Table 10). The Wald test score was insignificant which suggests that one or more of the variables in the model did not make a significant contribution. Table 11 provides further details about which variables these may be.

Table 10-Evaluation of the overall logistic regression model for Breastfeeding exclusivity at week one

	Step one			**Step two**		
Test	χ^2	*df*	*p*	χ^2	*Df*	*p*
Overall model Evaluation						
Likelihood ratio test	24.19	11	0.01	32.57	13	0.005
Score test	23.778	11	0.01	20.13	11	0.014
Wald test	0.11	1	0.73	0.29	1	0.58
Goodness-of-fit test						
Hosmer & Lemeshow	11.06	8	0.19	9.86	8	0.27

Second time mothers were more likely to be exclusively breastfeeding at week one compared to first time mothers (Adj OR=1.62, 95% CI: 1.09-2.40). With the addition of ethnicity into the model, parity still had an influence on breastfeeding exclusivity at week one. Second time mothers were more likely to be breastfeeding exclusively at week one (Adj OR=1.67, 95% CI: 1.12-2.49) compared to first time mothers. Ethnicity was a significant predictor of breastfeeding status over and above other sociodemographic variables; Pakistani (Adj OR=0.62, 95% CI:

0.41-0.92) and Bangladeshi mothers (Adj OR=0.46, 95% CI: 0.26-0.84) were less likely to be exclusively breastfeeding at week one compared to Indian mothers. The final model explained 7% of the variance in breastfeeding exclusivity at week one, (Table 11).

Table 11-Results of hierarchical logistic regression of factors influencing breastfeeding exclusivity at week one.

Model four **Stage one**				**Model four** **Stage two**			
Predictor	*e* β (odds ratio)	CI (95%) Lower	Upper	**Predictor**	*e* β (odds ratio)	CI (95%) Lower	Upper
Constant	0.77	0.44	1.37		1.01	0.55	1.85
Mother's age				**Mother's age**			
Under 20	2.55	0.24	26.73	Under 20	2.88	0.28	29.04
20-24 years	0.76	0.41	1.40	20-24 years	0.84	0.45	1.56
25-29 years	0.81	0.54	1.21	25-29 years	0.87	0.58	1.31
30+ years	-	-	-	***30+ years***	-	-	-
Socio-economic status				**Socio-economic status**			
Managerial/Professional	1.55	0.93	2.57	Managerial/Professional	1.28	0.75	2.17
Intermediate occupations	0.94	0.51	1.75	Intermediate occupations	0.93	0.50	1.72
Routine/manual	1.15	0.68	1.95	Routine/manual	1.05	0.61	1.80
Never worked	-	-	-	***Never worked***	-	-	-
Parity				**Parity**			
1 child	-	-	-	***1 child***	-	-	-
2 children	1.62[j]	1.09	2.40	2 children	1.67[k]	1.12	2.49
3 children	0.84	0.47	1.49	3 children	0.97	0.54	1.75
4+ children	0.94	0.45	1.97	4+ children	1.09	0.52	2.30

[j]Significant at p<0.01

[k]Significant at p<0.05

Model four **Stage one**				**Model four** **Stage two**			
Predictor	*e* β (odds ratio)	*CI (95%)* *Lower* *Upper*		**Predictor**	*e* β (odds ratio)	*CI (95%)* *Lower*	*Upper*
Age left education				**Age left education**			
16 or under	1.38	0.78	2.45	16 or under	1.45	0.81	2.59
17 or 18	0.66[j]	0.42	1.04	17 or 18	0.70	0.44	1.10
Over 18	-	-	-	***Over 18***	-	-	-
Ethnicity				**Ethnicity**			
Indian	-	-	-	***Indian***	-	-	
Pakistani	-	-	-	Pakistani	0.62[j]	0.41	0.92
Bangladeshi	-	-	-	Bangladeshi	0.46[j]	0.26	0.84
Negelkerke's R^2	0.05			**Negelkerke's R^2**	0.07		

3.4.8 Predicting breastfeeding exclusivity at week six

The effectiveness of the model was assessed by the overall model evaluation (via the Likelihood ratio test) and the Goodness-of-fit test (via Hosmer & Lemeshow test) suggested that the model was a better fit to the data than the null model. Table 12 provides further details.

Table 12-Evaluation of the overall logistic regression model for Breastfeeding exclusivity at week six

	Step one			**Step two**		
Test	χ^2	*df*	*p*	χ^2	*Df*	*p*
Overall model Evaluation						
Likelihood ratio test	12.76	11	0.304	23.30	13	0.05
Score test	12.23	11	0.346	10.23	11	0.23
Wald test	10.80	1	0.0001	4.82	1	0.05
Goodness-of-fit test						
Hosmer & Lemeshow	6.242	8	0.620	7.88	8	0.445

Mothers who left education at the age of 17 or 18 were less likely to be exclusively breastfeeding at week six (Adj OR=0.49, 95% CI: 0.28-0.86) compared to those mothers leaving education later (over the age of 18). This influence was still evident when adjusting for mother's ethnicity (Adj OR=0.52, 95% CI: 0.29-0.91).Ethnicity was a significant predictor of breastfeeding exclusivity over and above the other sociodemographic variables. Pakistani (Adj OR=0.54, 95% CI: 0.34-0.86) and Bangladeshi mothers (Adj OR=0.40, 95% CI: 0.19-0.83) were less likely to be exclusively breastfeeding at week six compared to Indian mothers. Negelkerke's R^2 indicated that 5% of the variance in breastfeeding exclusivity could be explained by the model, see table 13.

Table 13-Results of hierarchical binary logistic regression of factors influencing breastfeeding exclusivity at week six.

Model five **Stage one**				**Model five** **Stage two**			
Predictor	*e* β (odds ratio)	*CI (95%)* *Lower*	*Upper*	**Predictor**	*e* β (odds ratio)	*CI (95%)* *Lower*	*Upper*
Constant	0.30	0.15	0.57		0.41	0.20	0.81
Mother's age				**Mother's age**			
Under 20	2.26	0.32	15.82	Under 20	2.66	0.40	17.76
20-24 years	1.27	0.64	2.53	20-24 years	1.45	0.72	2.94
25-29 years	0.87	0.55	1.37	25-29 years	0.96	0.60	1.530
30+ years	-	-	-	***30+ years***	-	-	-
Socio-economic status				**Socio-economic status**			
Managerial/Professional	1.55	0.87	2.75	Managerial/Professional	1.22	0.67	2.25
Intermediate occupations	1.08	0.53	2.20	Intermediate occupations	1.05	0.51	2.18
Routine/manual occupations	1.10	0.59	2.02	Routine/manual occupations	0.97	0.51	1.82
Never worked	-	-	-	***Never worked***	-	-	-
Parity				**Parity**			
1 child	-	-	-	***1 child***	-	-	
2 children	1.30	0.84	2.02	2 children	1.35	0.87	2.11
3 children	1.01	0.52	1.95	3 children	1.22	0.62	2.39
4+ children	1.32	0.57	3.02	4+ children	1.60	0.69	3.73

Model five **Stage one**				**Model five** **Stage two**			
Predictor	*e* β (odds ratio)	*CI (95%)* *Lower*	*Upper*	**Predictor**	*e* β (odds ratio)	*CI (95%)* *Lower*	*Upper*
Age mother left education				**Age mother education**			
16 or under	1.12	0.60	2.11	16 or under	1.19	0.63	2.24
17 or 18	0.49[l]	0.28	0.86	17 or 18	0.52[l]	0.29	0.91
Over 18	-	-	-	***Over 18***	-	-	-
Ethnicity				**Ethnicity**			
Indian	-	--		***Indian***	-	-	-
Pakistani	-	--		Pakistani	0.54[l]	0.34	0.86
Bangladeshi	-	-	-	Bangladeshi	0.40[l]	0.19	0.83
Negelkerke's R^2	0.03			**Negelkerke's R^2**	0.05		

[l]Significant at $p<0.05$

3.5 Discussion

The chapter has utilised high-quality data provided by the IFS 2010 to explore if there were infant feeding inequalities between IPAB mothers, in the early weeks post-birth. This re-analysis has demonstrated that breastfeeding initiation, prevalence and exclusivity rates (at weeks one and six) differ significantly amongst IPAB mothers living in the UK, even when accounting for socio-demographic differences. The overall findings conclude that Pakistani and Bangladeshi mothers who took part in the 2010 IFS were less likely to initiate breastfeeding, breastfeed at weeks one and six post-partum, and less likely to do so exclusively compared to Indian mothers.

Socio-demographic variables were associated with breastfeeding at week one and week six. Mothers who had not worked were less likely to breastfeed at week one and six compared to mothers in managerial and professional posts. This association was still evident when ethnicity was entered into the model. Pakistani and Bangladeshi mothers were less likely than Indian mothers to breastfeed at week one and six compared to Indian mothers. At week six, mothers who left education earlier were less likely to breastfeed compared to those that had left education later. Mother's socio-economic status was only associated with breastfeeding at week six when the ethnicity variable was also present. Pakistani mothers and those with a higher socio-economic status were less likely to be breastfeeding at six weeks compared to Indian mothers and those mothers that had not worked.

Breastfeeding exclusivity at week one was associated with parity and ethnic group. First time mothers and Pakistani and Bangladeshi mothers were less likely to be exclusively breastfeeding at week one. At week six, mothers who left education later, Pakistani and Bangladeshi mothers were less likely to be breastfeeding compared to mothers who left education earlier and those from the Indian sub-group.

Overall, the models explained breastfeeding initiation, prevalence and exclusivity at weeks one and six well. This was demonstrated by Negelkerke's R^2 values which ranged from 3-20%. Interestingly the values of Negelkerke's R^2 reduce for breastfeeding prevalence. Suggesting that there may be more influences of socio-demographic variables on initiation but this effect diminishes for prevalence of breastfeeding and even less for breastfeeding exclusivity. These findings make sense when it is considered that longer term breastfeeding is influenced by other factors such as attitudes and cultural and social aspects that mothers experience (Victora et al. 2016).

The findings of the secondary analysis have implications for the nature and timing of the support needed by IPAB mothers. Indian mothers show a breastfeeding advantage compared to Pakistani and Bangladeshi mothers. Positive reinforcement of Indian mothers' decisions to initiate and continue breastfeeding will ensure that such decisions are sustained. Pakistani and Bangladeshi mothers may need support in initiating breastfeeding and in breastfeeding exclusively.

Thomas and Avery's (1997) survey on infant feeding amongst Asian families highlighted differences amongst IPAB mothers' infant feeding behaviours. The analyses were simple descriptive statistics, so the effect of potentially correlated socio-demographic variables was not examined. This secondary analysis of the IFS 2010 provides further details of where these differences exist by not only reporting the breastfeeding incidence, prevalence and exclusivity of the IPAB sub-groups but also provides evidence of the association with socio-demographic variables and that the effect of ethnicity on breastfeeding rates is independent of socio-demographic variables.

Socio-demographic variables are important predictors of breastfeeding rates. Research that is available on South Asian mothers' infant feeding practices acknowledges the role of such factors (e.g. Santorelli et al. 2013). Of the socio-demographic variables associated with breastfeeding

rates such as mothers' age, parity, socio-economic status and age at which mother left full-time education reported in other UK studies (McAndrew et al. 2012, Kelly, Watt and Nazroo 2006), these were found in our study not to be consistently associated with breastfeeding initiation, and breastfeeding prevalence and breastfeeding exclusivity at week one and six post-partum. Further research is required to determine if other, potentially modifiable variables are associated with South Asian mothers' breastfeeding choices and infant feeding outcomes.

The findings should be interpreted considering some limitations of the secondary analysis and the IFS. The extent to which the data is representative of South Asian mothers living in the UK needs to be questioned. The Survey was only written in English, and thus reflects the findings of those IPAB mothers that could read and understand English. There are sub-groups of this population, living in the UK, that are unable to read English and may need specialist infant feeding support. It is imperative that future surveys are inclusive of these sub-groups. Until surveys can capture the information from mothers that are unable to read or understand English, the picture of the infant feeding outcomes and practices of IPAB mothers will remain fragmented. The UK is fast becoming a multicultural, multi-ethnic country. During 1993-2012 foreign-born individuals in the UK doubled from 3.8 million to 7.7 million, with India and Pakistan being the top countries of birth. (Rienzo, Cinzia and Vargas-Silva 2012). Births to women born outside the UK accounted for more than a quarter of all live births in 2016 (Office for National Statistics 2017). The ONS reports in 2016, that amongst non-UK born births 18,578 were to Pakistani births, 14,044 to Indian mothers and 7,982 to Bangladeshi mothers (Office for National Statistics 2017).Whether the IFS is inclusive of these mothers is questionable. Depending on recency of migration, these individuals may not be fluent in English and therefore may inadvertently be excluded from the survey. This has implications for the sample data because immigration into the UK has been shown to be potentially detrimental to rates of breastfeeding (Hawkins et al. 2008). The IFS does not collect data on country of birth and recency of immigration, and so it is not possible to analyse breastfeeding rates by these variables. The results therefore may only be representative of those

mothers that are able to access the IFS; who are able to understand the IFS and the questions within it. Future work would benefit from ensuring that such surveys are inclusive of Non-UK born individuals that may, as has been shown in chapter 1, have varying breastfeeding behaviours compared to their UK-born counterparts.

The authors of the IFS 2010 identified that the survey was prone to systematic error. Systematic error makes survey results unrepresentative of the target population. This can arise if either the original sample was unrepresentative or if the response rate to the survey was low and differed across various groups of participants. The authors assert that error due to the original sample being unrepresentative is minimal as all mothers who registered births in the UK at a given time were eligible to take part in the survey. Non-response rates were identified to be higher amongst young mothers and mothers from higher levels of deprivation. For this reason, the authors of the IFS weighted the achieved sample at each stage of the survey by age levels of deprivation to correct for this variance in response rate (McAndrew et al. 2012).The role of such weighting is important given that non-response introduces bias whereby respondents may have characteristics different from non-respondents (Lahaut et al. 2002). Weighting such as that conducted by the authors of the IFS allows confidence in the conclusions drawn from the survey data because it provides a more representative picture of the whole sample population than if data were unweighted (McAndrew et al. 2012).

The IFS secondary analysis was only conducted on the data at stage one (i.e. infants aged between 8-12 weeks old) as this was the only stage where ethnicity data was available regarding individual sub-groups (i.e. IPAB). It would be of interest to understand how breastfeeding outcomes change for these mothers at six months, in line with the WHO's recommendations to exclusively breastfeed until this time point. The academic community would benefit by having up to date information on breastfeeding outcomes of IPAB mothers living in the UK up until six months.

This is particularly important given the results of earlier surveys that have shown that breastfeeding outcomes are reduced by four months post-partum (Griffiths et al. 2007).

Extensive survey data is invaluable in providing information on broad patterns of behaviour that exist amongst sub-groups of the population. However, the comparative approach employed by such inquiries (Bhopal 1997) may detract from key issues that need addressing, with regards to the ethnic sub-groups such as the South Asian sub-groups. Pakistani and Bangladeshi mothers are vulnerable to lower rates than what is demonstrated when results are presented under the broad umbrella term of 'South Asian'.

The secondary analysis does not explain the reasons for the different breastfeeding outcomes by these ethnicities. It is suggested that observations of variations in the prevalence of a health behaviour, such as breastfeeding, should be followed by detailed examination of the relative importance of environmental, lifestyle and cultural influences on the behaviour (Senior and Bhopal, 1994). Given the variations highlighted in breastfeeding rates amongst IPAB mothers, further exploration is required to understand why these variations may exist. Understanding of the individual, societal and group level factors (as highlighted by Hector et al's (2005) conceptual framework in chapter 1) that may impact on IPAB mothers' infant feeding behaviours is needed. Currently, as highlighted in chapter one this information is scarce. Such information is imperative as it will allow designing support for these mothers that is tailored to their needs and preserves positive breastfeeding behaviours such as those potentially shown by Indian mothers. The data from the secondary analysis shows that the Pakistani and Bangladeshi sub-groups are vulnerable to poor breastfeeding outcomes. Pakistani mothers may benefit from tailored support to enable them to exclusively breastfeed. Bangladeshi mothers may benefit from targeted support antenatal and immediately postnatal to ensure that breastfeeding initiation and prevalence of any breastfeeding and exclusivity is improved at one and six weeks post-partum.

3.6 What this chapter adds

- A new, up to date, knowledge of the breastfeeding initiation and exclusivity rates of IPAB mothers living in the UK.
- The findings highlight that Pakistani and Bangladeshi sub-groups from the South Asian sub-group that were previously reported to have high rates of breastfeeding (e.g. McAndrew et al. 2012) are vulnerable to lower rates than first reported. The implication of this finding is that studies should collect data and report results by individual ethnic groups such as IPAB as opposed to aggregated ethnicities such as South Asian. Similar analysis of infant feeding rates collected in routine datasets in public health in the UK could be analysed by ethnicity to see whether variations amongst sub-groups exist. The presentation of data to local public health and health service commissioners could help targeting of interventions on those most vulnerable to poor infant feeding outcomes and help alleviate health inequalities.
- This secondary analysis of the IFS 2010 has implications for not only how ethnicity is defined in research but also how results should be presented for these ethnicities. To assume that the ethnicities can be aggregated for analysis is to ignore the likely variation in key cultural determinants of breastfeeding behaviours, beliefs and intention. IPAB mothers may have similar or different support needs, which has not been possible to determine from the IFS 2010 dataset. Information on country of birth and recency of migration may add further granularity to analyses with implications for the design of interventions to target those needing specific support from health services or via social and community interventions.

3.7 Conclusion

The research presents a detailed account of the breastfeeding initiation, prevalence of any breastfeeding and exclusivity of breastfeeding of IPAB mothers in the UK from a survey in 2010. This is the first known secondary analysis by South Asian ethnicity in the history of the IFS since the first in 1975 the first such analysis in nearly two decades. The results show that South Asian mothers in the UK demonstrate heterogeneous infant feeding rates and future research and studies with these sub-groups should take this into account especially when developing and evaluating infant feeding interventions for these sub-groups. The varying breastfeeding rates are the basis of this thesis. The rest of the thesis aims to understand why this may be, by focusing on individual, societal and group level factors that may impact on breastfeeding outcomes (as illustrated by Hector et al's (2005) conceptual framework in Chapter one).

3.8 Chapter Summary

The current chapter presented the first part of the secondary analysis of the IFS to understand the infant feeding behaviours of IPAB mothers living in the UK. Variations in breastfeeding initiation, prevalence and exclusivity have been demonstrated amongst the above sub-groups whilst controlling for socio-demographic variables thought to have an influence. Chapter three presents the second part of the secondary analysis of the IFS exploring individual factors that may help to understand why the variations in breastfeeding rates amongst IPAB mothers exist.

4 Antenatal beliefs and postnatal behaviours of Indian, Pakistani and Bangladeshi mothers: A secondary analysis of the 2010 Infant feeding survey data (Part 2).

4.1 Introduction

The previous chapter identified that Pakistani and Bangladeshi mothers who took part in the 2010 IFS were less likely to initiate breastfeeding, breastfeed at weeks one and six post-partum, and were less likely to do so exclusively compared to Indian mothers. Previously these differences were masked due to the aggregation of IPAB sub-groups under the broad umbrella term of 'South Asian'. Thomas and Avery's work was one of the first to highlight the differences in infant feeding outcomes amongst IPAB mothers in 1997 (discussed in chapter one). The survey also highlighted that Indian mothers were most likely to intend to breastfeed (73%) compared to Pakistani (68%) and Bangladeshi mothers (48%). Bottle feeding was more common amongst Bangladeshi (95%) and Pakistani (91%) compared to Indian mothers (81%) at nine weeks' post birth (Thomas and Avery 1997).

Later studies have produced conflicting findings which may well be due to the aggregation of individual sub-groups under the broad category of 'South Asian'. For example, in 2012, Lawton and colleagues found that intentions to breastfeed were significantly higher for mothers from the South Asian group compared to White mothers (Lawton et al. 2012) whilst later studies found that Pakistani mothers were more likely to have no clear intentions about how they would feed their baby after birth compared to the White or 'Other' ethnic group (Cabieses et al. 2014). There is little research on the awareness of health benefits of breastfeeding amongst IPAB mothers. The latest IFS found that White mothers are more likely than mothers from ethnic minorities to state awareness of health benefits of breastfeeding (McAndrew et al. 2012). Since Thomas and Avery's work in 1997, little research has focused on bottle feeding behaviours of South Asian mothers. It is of importance to understand if antenatal beliefs such as feeding intentions and awareness of

health beliefs and postnatal behaviours such as formula feeding differ by individual South Asian ethnic group. Such findings have implications for the interventions that may be required to support mothers to feed their infants optimally.

Given that Thomas and Avery's results are twenty years old, it is necessary to see if similar patterns occur in the data of subsequent surveys such as the IFS. Currently, the data from the recent IFS (McAndrew et al. 2012) is presented under the broad umbrella term of 'South Asian', thus whether differences exist like those highlighted by Thomas and Avery (1997) remain to be explored.

Further, it has been highlighted in Chapter one that mothers from the IPAB sub-groups may administer prelacteal feeds to their babies in the early days post birth (Sharma and Byrne 2016, Shaikh and Ahmed 2016), which has a negative impact on optimum infant feeding. However, there is no recent work in the UK exploring whether such practices still exist, and most of the available literature on prelacteal feed is dated or originates from South Asia. It is of interest to understand if and when mothers are introducing additional foods/drinks to their infants in the first few weeks post birth, as it has potentially detrimental effects on breastfeeding exclusivity. Knowing when mothers introduce such liquids will allow targeting support to mothers to optimally feed their babies. However, large, highly cited national surveys such as the IFS surveys conducted in 2000, 2005 and 2010(Hamlyn et al. 2002, Bolling et al. 2007, McAndrew et al. 2012) have not presented information on antenatal beliefs such as planned method of feeding the baby or health beliefs or postnatal behaviours such as administration of additional foods or liquids and bottle feeding by specific South Asian sub-group. Feeding intentions (Rollins et al. 2016), awareness of health benefits of breastfeeding and giving baby formula potentially influence breastfeeding initiation and exclusivity (Rollins et al, 2016). The IFS provides a window of opportunity to explore the prevalence of such behaviours. The above factors are amenable to modification and are routinely collected in the IFS and thus warrant further investigation to promote optimum feeding amongst IPAB mothers living in the UK.

This exploratory chapter aims to describe IPAB mothers' antenatal beliefs around planned method of feeding and awareness of the health benefits of breastfeeding and postnatal behaviours such as administration of formula feeding, additional liquids and/or foods in the early days after birth using the data from the 2010 IFS. The specific research questions to be addressed are as follows;

- *How did Indian, Pakistani and Bangladeshi mothers who completed IFS stage one report that they planned to feed their babies?*
- *Were Indian, Pakistani and Bangladeshi mothers aware of the health benefits of breastfeeding?*
- *What were the formula feeding behaviours of Indian, Pakistani and Bangladeshi mothers?*
- *Did Indian, Pakistani and Bangladeshi mothers report giving additional foods and liquids to their infants in the early days after birth*?

4.2 Methodology

4.2.1 Design

The IFS (2012) was a cross sectional survey completed by all mothers that had registered births between August and October 2010. At stage one of the survey, babies ranged from two to 12 weeks old.

4.2.2 Procedure

As in chapter three, the secondary analysis utilises data collected at stage one of the IFS survey (when infants were aged two to 12 weeks) as this was the only stage where data had been broken down by individual South Asian sub-group (IPAB).The analysis of the chapter follows on from the previous chapter, and selected questions that may indicate why breastfeeding outcomes varied amongst the three groups. Factors such as feeding intentions, health beliefs about breastfeeding and formula feeding behaviours that are known to have an influence on breastfeeding outcomes were selected to explore in more detail.

4.2.3 Participants

At stage one, a total of 15,724 mothers returned the questionnaire (51% response rate), of which, 583 women classified themselves as 'South Asian' (265 Indian mothers, 248 Pakistani mothers and 70 Bangladeshi mothers).Please consult chapter 3 for further details about the South Asian group.

4.2.4 Variables of interest

The questions from the IFS were chosen for the second part of the secondary analysis because they answered gaps in the literature regarding antenatal beliefs and postnatal behaviours of IPAB mothers. The questions and their response formats were as follows;

Feeding intentions

Thinking back to before you had your baby, how did you plan to feed him/her?

Infant formula

Breastfeed

Breastfeed and use infant formula

Had not decided

Health benefits of breastfeeding

Are you aware of any health benefits in breastfeeding, either for the mother or the baby?

Yes

No

Formula feeding

Has your baby ever been given infant formula, even if this was only once?

Yes

No

If mothers answered yes to the above, then they were asked to answer the following;

How old was your baby when he/she FIRST received infant formula?

Under 1 week

Over 1 week to under three weeks

Over three weeks to under six weeks

Over six weeks

Since your baby was born, how often has he/she been fed infant formula?

All or almost all feeds

About half of all feeds

One or two feeds a day

A few feeds a week, but not every day

A few feeds since they were born, but not every week

Only once or twice since they were born

Additional foods and liquids (and reasons for administration)

Has your baby EVER had anything else to drink apart from milk, such as water, fruit juice, squash or herbal drink?

Yes

No

Age of baby when first given a drink other than milk

Under 1 week

Over 1 week to under three weeks

Over three weeks to under six weeks

Over six weeks

Has your baby ever had any foods such as cereal, rusks, baby rice, fruit, vegetables or any other kind of solid food?

Yes

No

4.2.5 Statistical analysis

The aims to describe the data were addressed by running simple frequencies on questions/variables of interest (See appendix 1).

Chi square tests explored associations between ethnic group and various infant feeding related outcomes as described in section 4.2.4 (chi-square analyses was conducted where appropriate numbers of participants allowed).Standardised residuals were examined to understand the difference (and the strength of the difference) amongst the three sub-groups. An adjusted residual more than 2.0 indicates that the number of cases in that cell is significantly larger than would be expected if the null hypothesis were true. An adjusted residual less than 2.0 indicates that the number of cases in that cell are significantly smaller than would be expected if the null hypothesis were true (Agresti 2002).

4.3 Results

4.3.1 Sample characteristics

The sample was the same as the sample of mothers in the first part of the secondary analysis (Chapter 3). The South Asian sample (N=583) consisted of 265 (45.5%) Indian, 248 (42.5%) Pakistani and 70 (12%) Bangladeshi mothers. All other demographic information of the sample is highlighted in table 2, Chapter 3.

4.3.2 Antenatal factors

4.3.2.1 Feeding intentions

The majority of mothers (n=386, 66.2%, table 14) had intended to breastfeed their babies. Feeding intentions varied across the ethnic sub-groups ($p<0.001$). Higher proportions of Indian mothers planned to breastfeed their babies (76.2%) compared to Pakistani (58.9%) and Bangladeshi mothers (54.3%), higher proportions of Pakistani mothers intended to formula feed their babies (9.7%) compared to Bangladeshi (4.3%) and Indian mothers (1.1%), and higher proportions of Bangladeshi mothers (28.6%) intended to mix breast and formula feeds compared to Pakistani (21.4%) and Indian mothers (15.2%), table 14.

Table 14-Retrospective Feeding intentions of mothers before their babies were born.

	South Asian **N (% of total)**	**Indian** **n (% of total)**	**Pakistani** **n (% of total)**	**Bangladeshi** **n (% of total)**
Breastfeed	386 (66.2)	202 (76.2)	146 (58.9)	38 (54.3)
Breastfeed and infant formula	113 (19.4)	40 (15.1)	53 (21.4)	20 (28.6)
Had not decided	52 (8.9)	19 (7.1)	25 (10.1)	8 (11.4)
Infant formula	30 (5.1)	3 (1.1)	24 (9.7)	3 (4.3)
Missing	2 (0.4)	1 (0.3)	0 (0)	1 (0.4)

4.3.2.2 Awareness of health benefits of breastfeeding

Mothers were asked if they were aware of any health benefits that breastfeeding afforded for the mother or baby. Of those that responded (n=561), the majority of the mothers (n=408, 72.7%) were aware of such benefits (table 15). Awareness of the health benefits varied across individual sub-group ($p<0.001$). Lower proportions of Pakistani (65.7%) and Bangladeshi mothers (52.9%) stated this awareness compared to 78.4% of Indian mothers, table 15.

Table 15-South Asian mothers' awareness of the health benefits of breastfeeding for the mother and baby and individual sub-group awareness.

	South Asian N (% of total)	**Indian** n (% of total)	**Pakistani** n (% of total)	**Bangladeshi** n (% of total)
Yes	408 (69.9)	208 (78.4)	163 (65.7)	37 (52.9)
No	153 (26.2)	49 (18.4)	76 (30.6)	28 (40)
Missing	22 (3.8)	8 (3.0)	9 (3.6)	5 (7.1)

4.3.3 Postnatal feeding behaviours

4.3.4 Formula feeding

Mothers were asked whether their baby had ever received formula milk. Of those that responded (n=223,38.3%), only a small minority said that they had given their babies formula milk (n=66, 29.6%). Interestingly, when mothers were asked *when* their baby received their first formula feed more mothers responded (n=385) than the original number stating whether their baby had *ever* had formula. In this instance, the majority of mothers stated that their baby had received their first formula when their baby was just under a week old (n=249, 59%). This pattern was true across the three sub-groups, with Indian (55.8%), Pakistani (55.4%) and Bangladeshi mothers (63.1%) introducing formula to their infant when they were less than a week old (table 16).

Table 16-Age at which mothers introduced formula to their infant.

	South Asian N (%of those responding)	**Indian n (% of those responding)**	**Pakistani n (%of those responding**	**Bangladeshi n (%of those responding**
Under 1 week	249 (59.0)	96 (55.8)	117 (55.4)	36 (63.1)
1 week under 3 weeks	55 (13.0)	19 (11.0)	44 (20.8)	10 (17.5)
Over 3 weeks under 6 weeks	54 (12.7)	32 (18.6)	18 (8.5)	4 (7.0)
6 weeks and over	27 (6.4)	13 (7.5)	13 (6.1)	1 (1.7)
Not stated	37 (8.7)	12 (6.9)	19 (9.0)	6 (10.5)

Mothers were then asked about the frequency with which their infants had received infant formula, 404 mothers responded to this question. Of those, 34.5% (n=147) stated that all or almost all their infants' feeds since birth had been formula, table 17.

Table 17-Frequency with which infants were given infant formula.

	South Asian N (% of those responding)	**Indian n (% of those responding)**	**Pakistani n (% of those responding)**	**Bangladeshi n (% of those responding)**
All or almost all feeds	147 (34.5)	42 (23.8)	84 (43.5)	21 (36.8)
About half of all feeds	69 (16.1)	31 (19.3)	24 (12.4)	14 (24.5)
One or two feeds a day	94 (22.0)	48 (27.2)	36 (18.6)	10 (17.5)
A few feeds a week, but not every day	26 (6.1)	13 (7.3)	10 (5.1)	3 (5.2)
A few feeds since they were born, but not every week	24 (5.6)	13 (7.3)	9 (4.6)	2 (3.5)
Only once or twice since they were born	44 (10.3)	25 (14.2)	14 (7.2)	5 (8.7)
Not stated	22 (5.1)	4 (2.2)	16 (8.2)	2 (3.5)

4.3.5 Additional foods

Mothers were asked whether their infants had been introduced to additional foods since birth. The majority of mothers (n=582) stated that they had not given their infants additional foods since birth. When asked about additional liquids, of those that responded (n=573), 33.1% said that they had given their baby additional liquids (n=193) such as water, fruit juice, squash or herbal drinks. There were differences amongst the sub-groups ($p<0.0001$) with higher proportions of Pakistani (39.5%) and Bangladeshi mothers (45.7%) giving additional liquids compared to Indian mothers (23.7%), table 18.

Table 18-Whether mothers had ever given their infant anything else to drink apart from milk, such as water, fruit juice, squash or herbal drink

	South Asian (N) % of total	**Indian (n) % of total**	**Pakistani (n) % of total**	**Bangladeshi (n) % of total**
Yes	193 (33.1)	63 (23.7)	98 (39.5)	32 (45.7)
No	380 (65.1)	201 (75.8)	145 (58.4)	34 (48.5)
Not stated	10 (1.7)	1 (0.3)	5 (2.0)	4 (5.7)

Mothers were asked to state the age at which their infant was introduced to anything other than milk. Of those that responded (n=184), most mothers had given their infant something other than milk when their infant was over 3 weeks, up to 6 weeks old (n=75, 40.7%), table 19.

Table 19-Age at which mothers introduce their infants to drink other than milk such as water, fruit juice, squash or herbal drink.

	South Asian N(% of total)	Indian n (% of total)	Pakistani n (% of total)	Bangladeshi n (% of total)
Up to 1 week	24 (13.1)	5 (7.9)	12 (12.2)	7 (21.8)
Over 1 week, up to 3 weeks	50 (27.3)	17 (26.9)	24 (24.4)	9 (28.1)
Over 3 weeks, up to 6 weeks	75 (40.7)	26 (41.2)	39 (39.7)	10 (31.2)
Over 6 weeks	34 (18.5)	15 (23.8)	20 (20.4)	6 (18.7)
Not stated	3 (1.6)	0 (0)	3 (3.0)	0 (0)

4.4 Discussion

Chapter three highlighted varying breastfeeding initiation, prevalence and exclusivity rates amongst IPAB mothers. This chapter builds on these findings and starts to provide a picture of what may be happening behind the rates. This chapter adds to the knowledge gap regarding the antenatal beliefs related to planned methods of feeding and awareness of health benefits of breastfeeding, and postnatal behaviours such as the introduction of formula feeds and additional liquids (water, fruit juice or herbal drinks) and foods amongst IPAB mothers living in the UK. Going back to the conceptual model by Hector and colleagues (See figure 1) introduced in Chapter one, the findings from this chapter highlights factors at the 'individual level' (particularly beliefs and intentions) that may be influencing infant behaviours such as initiation and exclusivity. The findings are summarised below.

Intentions to breastfeed were lowest amongst Pakistani and Bangladeshi mothers. These mothers intended to formula feed and mix feed. This finding contrasts with the findings of Thomas and Avery (1997) who found both Indian and Pakistani mothers intended to breastfeed. Pakistani and Bangladeshi mothers feeding intentions need to be further explored through qualitative enquiry to understand why the sub-groups do not intend to breast feed their infants. Instilling positive messages about breastfeeding may help to modify their beliefs and ensure that they hold positive breastfeeding intentions

A small minority of mothers reported giving their infant formula, however a larger number of mothers (than those responding to whether they gave their infant formula) responded to the frequency of formula feeding. It may well be that mothers did not understand the question asked about infant formula or did not think it a socially desirable answer to report that they were formula feeding their infant. Further exploration is needed to understand formula feeding behaviours amongst these sub-groups. Most mothers who gave formula had first introduced formula just

under a week post birth. High proportions of Pakistani and Bangladeshi mothers reported giving their infant additional liquids, with most reporting this to be under six weeks of age. Such vulnerabilities would have been masked if the data were presented under the broad umbrella group of 'South Asian'. A very small minority of mothers reported giving additional foods to their infant's post birth. This is interesting given that prelacteal feeds are said to be a customary practice amongst the sub-groups involved (Shaikh and Ahmed 2006, Sharma and Byrne 2016). Further work is needed to understand the formula feeding behaviours of Pakistani and Bangladeshi sub-groups and to understand whether administration of additional foods such as prelacteal feeds is in fact not present amongst these sub-groups as the survey results suggest or whether the method with which the data was collected (i.e. quantitative) fail to capture such behaviours (perhaps because prelacteal feeds are not always considered 'food').

This is the first time that the information from the 2010 IFS on awareness of health benefits, formula feeding behaviours and administration of additional liquids have been examined by individual South Asian sub-group. Increasing Pakistani and Bangladeshi mothers' knowledge about the health benefits of breastfeeding is important and may be a pathway to changing their infant feeding intentions in support of breastfeeding. Indeed, this has been shown to be effective for increasing breastfeeding initiation and duration in other sub-groups (Kornides and Kitsantas 2013), and is, therefore a fruitful avenue to explore with IPAB mothers.

The findings have implications for the optimal feeding of babies amongst these sub-groups. Awareness of the health benefits of breastfeeding and intentions to breastfeed are key factors that if addressed, could influence breastfeeding initiation and exclusivity amongst these sub- groups. Further, most surveys on South Asian mothers report the breastfeeding outcomes (e.g. Cabieses et al. 2014, Santorelli et al. 2013), but little is known about formula feeding amongst this sub-group. This requires further exploration. The data for the administration of formula milk by IPAB mothers in the sample are confusing and need to be interpreted with caution. A small minority (n=66) stated that they gave their infants formula but a larger number (n=389) responded to the

question about the frequency of the formula feeding. This has implications for the methodology used to collect this data. It may be that the mothers did not understand the question or that they are less likely to answer questions about formula feeding behaviours accurately. It is important to follow this up with qualitative enquiry to understand fully why the sub-groups give formula feed their infants. This information is unknown in the literature currently.

Referring to the findings of the first part of the IFS secondary analysis (presented in Chapter 3) it was found that only a quarter of the South Asian sub-groups were breastfeeding exclusively with lower proportions of Bangladeshi mothers exclusively breastfeeding at weeks one and six compared to Indian and Pakistani mothers. The second part of the secondary analysis helps to understand how this exclusivity may have been lost, with the introduction of formula feeds and additional liquids in the very early weeks post-birth (i.e. between weeks one and six).

This administration of additional liquids (such as water, juice or herbal tea) not only has a potentially detrimental impact on a new-born's health (WHO 2014) it impacts on breastfeeding by delaying the successful initiation and establishment of breastfeeding (Rogers et al. 2011). The WHO recommends that babies should not be supplemented with fluids other than breast milk (WHO 2003). Further work is needed to explore fully the factors that may be having an impact on infant feeding choices of the above sub-groups. The next chapter uses the current findings as a basis and reports on a scoping review that explores the factors influencing infant feeding practices amongst IPAB mothers. Given that prelacteal feeds are deeply rooted in the culture and/or religion of IPAB mothers (Shaikh and Ahmed 2006), it is surprising that only a small minority reported giving additional foods in the survey. It may well be that mothers do not identify these prelacteal feeds as 'food' and instead think of these as a customary or traditional behaviour that is engaged in. It is important to understand whether this is the case. Are mothers simply not giving additional foods in the early days post birth, or are they administering prelacteal feeds but

this behaviour is not fully captured by survey methodology. One to one interviews or focus groups would help to understand this further.

The points highlighted regarding the representativeness of the sample used in the IFS (see pages 82-83) apply to the findings of the current chapter. Whether the findings of the survey and the findings of the secondary analysis presented in this chapter are truly representative of the South Asian population as a whole needs attention. As has been mentioned previously in chapter three, the IFS include those South Asian mothers who are able to read and understand English. Given that India, Pakistan and Bangladesh continue to rank highly as the most common Non-UK countries of birth for the majority of mothers giving birth in the UK further work is needed that this target sub group of the population is included and represented in large surveys such as the IFS.

The implications for the conclusions drawn from the IFS are such that the findings should be interpreted as representative of those mothers that are likely to be born in the UK or have been in the UK a long period of time and are able to read and understand English. Future work should aim to understand the infant feeding factors covered by the IFS including migrant populations from Indian, Pakistani and Bangladesh as their behaviours may be very different to those South Asian populations born in the UK (ref), and may be in need of further support to optimally feed their babies.

Given the exploratory nature of this chapter a chi-square analysis was used. The results therefore need to be interpreted with caution. Possible confounding variables such as mother's age, age at which mother left education, ethnic group, parity and mother's socioeconomic status that may impact on the antenatal and postnatal factors have not been controlled for. Future work would benefit from designing studies to understand how such confounding variables may have an impact on antenatal factors such as feeding intentions and awareness of health benefits of breastfeeding and postnatal factors such as formula feeding and the administration of additional foods/liquids.

The current chapter could also benefit from performing a logistic regression that would allow to control for such confounders and understand the factors associated with antenatal and postnatal beliefs and behaviours such as those mentioned in the current chapter.

This chapter provides a unique insight into the behaviours and beliefs of IPAB mothers in the first few weeks post birth. In this chapter, it has been learnt that Pakistani and Bangladeshi mothers are less likely to intend to breastfeed and be aware of the health benefits of breastfeeding compared to Indian mothers. Pakistani and Bangladeshi mothers were also more likely to administer additional liquids (such as water, fruit juice or herbal tea) in the first few weeks post birth compared to Indian mothers. For this reason, it is imperative to support these mothers antenatally and postnatally to ensure optimal feeding. This chapter also raises questions and opens important avenues that need to be explored further with regards to infant feeding practices amongst IPAB mothers. Survey data such as that of the IFS provides a foundation from which to explore factors in detail via qualitative enquiry.

There are still unanswered questions that need further exploration. For example, from the literature in chapter one it has been learnt that South Asian mothers may discard colostrum, however the IFS does not capture such information. It is imperative to understand whether such detrimental behaviours still exist. Colostrum is recommended by the WHO as the perfect food for the new-born (WHO ND), but no contemporary research on IPAB mothers exists about whether these mothers continue to discard colostrum. It is surprising that only a small minority of mothers stated that they had given additional foods to their new-borns, particularly as prelacteal foods have been shown to be common cultural practices amongst these sub-groups (Sharma and Byrne 2016). Many gains would be made from employing qualitative methodology to understand the social and cultural practices surrounding infant feeding that are so often missed by large quantitative surveys. Discarding colostrum and administering prelacteal feeds and the context in which infant feeding takes place needs further exploration, as there is little research available that explores this. Given that the cultural context has been shown to be potentially detrimental to South

Asian mothers optimal feeding in some studies (e.g. Choudhry and Wallace 2012), it is important to explore this further. Variations in, for example, antenatal beliefs such as feeding intentions and awareness of health benefits of breastfeeding and postnatal behaviours such as formula feeding and administration of additional foods post birth need to be understood from the perspective of the mother, particularly in terms of what these behaviours mean for the mother. Only by gaining this understanding (through qualitative means) will it be possible to deliver appropriate breastfeeding support to these sub-groups. Further work is needed to explore fully the factors that may be having an impact on infant feeding choices of the above sub-groups.

The next chapter uses the current findings as a basis and reports on a scoping review that explores the factors influencing infant feeding choices amongst IPAB mothers in both the UK and South Asian literature.

4.4.1 What this chapter adds

- Feeding intentions vary amongst IPAB mothers. Lower proportions of Pakistani and Bangladeshi mothers intended to breastfeed compared to Indian mothers.
- Awareness of health benefits of breastfeeding varied amongst IPAB mothers. Lower proportions of Pakistani and Bangladeshi mothers had this awareness compared to Indian mothers.
- Formula feeding behaviours were only uncovered when asking the question about the timing of when formula feeds were introduced rather than if mothers had ever given their babies formula. Most mothers introduced formula to their babies in the first week post birth.
- Mothers reported not giving their infants additional foods but gave additional liquids when their baby was 3-6 weeks old.

4.4.2 Conclusion

This chapter builds on the first part of the secondary analysis presented in Chapter 3 and starts to build a picture of potential reasons why varying breastfeeding rates exist amongst IPAB mothers in the sample. Referring to Hector and colleagues model (2005) that was presented in Chapter one, the findings of the second part of the IFS begin to show the factors that impact on IPAB mothers' breastfeeding rates and the levels at which they operate. At the individual level, the mother's intentions and knowledge about the benefits of breastfeeding may potentially impact on their breastfeeding behaviours. Formula feeds and the introduction of additional liquids in the early weeks postpartum have a detrimental impact on breastfeeding exclusivity. The next step is to understand some of the influences on the behaviours highlighted in the first and second part of the secondary analysis of the IFS (chapters 3 and 4).

4.4.3 Chapter Summary

This chapter has presented the second part of the secondary analysis of the IFS and has confirmed variations in infant feeding intentions and awareness of the health benefits of breastfeeding. Formula feeding and the administration of additional liquids by IPAB mothers has also been presented. These sub-groups lose their breastfeeding exclusivity in the very early days to the administration of formula feeding and additional liquids in the very early weeks post birth.

An understanding of the influences on infant feeding amongst these sub-groups is needed given the findings of chapter 3 and 4. The next chapter presents a scoping review of the influences of infant feeding amongst IPAB mothers.

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5 A Scoping review of the factors that influence infant feeding practices of Indian, Pakistani and Bangladeshi mothers living in the UK and in South Asia.

5.1 Chapter Overview

This chapter presents the findings of a scoping review undertaken of the academic literature to understand the influences on infant feeding practices of South Asian mothers. Very little understanding exists about the factors that may influence this sub-group's infant feeding. The current chapter therefore aims to address this gap. The framework adopted to guide the methods of the scoping review is presented along with a detailed account of the methods undertaken to conduct the scoping review. Results of the review are presented and implications of the findings are discussed.

5.2 Introduction

In chapter one the health benefits of breastfeeding have been highlighted and chapters 3 and 4 have identified that Pakistani and Bangladeshi mothers who took part in the 2010 IFS were less likely to initiate breastfeeding, breastfeed at weeks one and six post-partum, and less likely to do so exclusively compared to Indian mothers. These reduced breastfeeding rates are accompanied by formula feeding and mix feeding intentions and a lack of awareness of the health benefits of breastfeeding amongst Pakistani and Bangladeshi mothers. Mothers from the Bangladeshi sub-group introduce formula feeds very early on post birth and these mothers along with Pakistani mothers introduce additional liquids to their infant's diet in the first couple of weeks post-birth. The next step is to understand the factors (identified by existing literature) that influence infant feeding practices amongst IPAB mothers. What is clear from most of the research aiming to understand influences on breastfeeding behaviours is that often the sample from which

conclusions are drawn are from the White population and may not be representative of the influences experienced by mothers in other ethnic groups. Such research concludes there are a multitude of factors, operating at various levels that affect breastfeeding decisions and behaviours over time (Rollins et al. 2016). Conclusions from reviews on the factors affecting breastfeeding remain the same; factors such as those relating to legal and policy issues to social attitudes and norms, women's employment and the conditions and access to health care services all have an influence on women's infant feeding choices (Rollins et al. 2016). Although the reviews provide valuable information on factors that impact on various levels, they may miss important practices within the South Asian culture that may also impact on their breastfeeding behaviours. For example, of the most recent reviews, Victora et al. (2016) reference cultural practices such as delayed initiation of breastfeeding, administration of prelacteal feeds and discarding colostrum as factors that impact breastfeeding but there is no information about which sub-groups these behaviours exist in. The practices mentioned above are known to be common in the South Asian culture (Sharma and Byrne 2016, Patil et al. 2015). Practices such as those noted above are important and need attention particularly given the health implications for both mother and baby.

Research has focused mainly on socio-demographic variables such as ethnicity, mothers age, socio-economic status, parity and age at which mother left full time education as factors that influence infant feeding behaviours amongst South Asian mothers. Such research proves valuable in describing the varying patterns amongst sub-groups, however it does not highlight whether practices such as discarding colostrum and prelacteal administration still exist amongst South Asian mothers.

Scoping reviews are a way of collecting and organising important background information and develop a picture of the existing evidence base (Armstrong et al. 2011). The purpose of this scoping review is to identify the research gaps and summarise the findings in relation to the influences on infant feeding practices of IPAB mothers. The goal in undertaking the current scoping review was to understand the extent, range and nature of research activity (Daudt, Van

Mossel and Scott 2013). It was important to understand the research gaps in the existing literature as they relate to the influences on IPAB mothers' infant feeding practices. The inclusion of literature from South Asia is important as it will provide a context of the values and beliefs that South Asian mothers may bring with them when immigrating to the UK. The UK is fast becoming an ethnically diverse, multi-cultural country. Over a quarter (27.5%) of live births in England and Wales in 2015 were to women born outside of the UK; the highest level on record (Office for National Statistics 2017). Between 2001 and 2006, Pakistan, India and Bangladesh were consistently the three most common countries of birth for women who gave birth in the UK. Poland is now the number one country followed by Pakistan and India (Office for National Statistics 2017). Understanding the UK context and the context that South Asian mothers may potentially migrate from is crucial in delivering tailored support and information to the needs of UK and Non-UK born mothers.

Prelacteal feeds and discarding colostrum have been implicated in delayed initiation and impact on breastfeeding exclusivity (Sharma and Byrne 2016).However, the literature in the UK about discarding colostrum is dated and there is very little research on prelacteal feed administration in the UK. If these behaviours are to be addressed then there needs to be an understanding of what these practices mean for those that engage in them.

As per the aims outlined in chapter one, the scoping review aimed to collate and analyse the existing UK and South Asian literature on factors that influence infant feeding practices amongst IPAB mothers.

The research question to be addressed by the scoping review was;

> *What factors influence infant feeding practices of Indian, Pakistani and Bangladeshi mothers living in the UK and in South Asia?*

5.3 Method

5.3.1 Study Design

The review uses scoping methods. Although methods for conducting scoping reviews are not clearly defined. Arksey and O'Malley (2005) propose a framework for conducting a scoping review which is used to inform the current review. This framework captures all literature regardless of study design, providing a broad picture of the factors influencing infant feeding in IPAB mothers. The scoping review adopted the following five stages; identification of the research question, identification of relevant studies, study selection, charting the data and collating, summarising and reporting the results. A quality assessment was not incorporated into the current scoping review as it is not typical for scoping reviews given the breadth of research topics and designs (Alam, Speed and Beaver 2012).

5.3.1.1 Identification of the research question

The research question (as stated above) was based on findings from previous literature. Various systematic reviews have been conducted in the past to understand what facilitates or hinders optimum breastfeeding (e.g. Meedya, Fahy and Kable 2010, Rollins et al. 2016, see Chapter 1). However, there is little understanding of whether such factors influence infant feeding amongst IPAB mothers. Given that these ethnic groups show differences in infant feeding behaviours (chapter 3 and 4) it is imperative to understand what factors may influence such behaviours. This information will help inform the design and development of interventions to support infant feeding amongst the above sub-groups.

Sharma and Byrne's (2016) review of the South Asian literature demonstrates the importance of understanding the factors that influence infant feeding amongst these sub-groups independently from other sub-groups as there may be specific factors influencing sub-optimum feeding amongst these sub-groups. A major finding highlighted by Sharma and Byrne (2016) was the role of traditional beliefs and the role of the mother-in-law on breastfeeding. Traditional practices such as prelacteal feeds, misperceptions regarding colostrum and taking advice of the mothers-in-law that discouraged breastfeeding immediately after breastfeeding were highlighted (Sharma and Byrne 2016). It has been discussed in chapter one that discarding colostrum may be practiced amongst the above sub-groups in the UK; however current understanding of such practices is dependent on old literature (e.g. Littler 1997). Further, commentaries exist that suggest prelacteal feeds are common amongst mothers from the South Asian sub-group, yet there is very little understanding of such practices in the UK. This chapter builds on the work of Sharma and Byrne (2016) to understand whether traditional practices such as discarding colostrum and administering prelacteal feeds are evident in the UK. Discarding colostrum have been evidenced in the literature amongst Bangladeshi (Littler 1997) and Pakistani sub-groups (Burton-Jeangros 1995, Condon et

al. 2003). Whether other studies have explored such behaviours and the factors that influence infant feeding amongst IPAB sub-groups remains to be explored. A key step in understanding this is to firstly bring together the literature to understand what factors influence infant feeding amongst the above sub-groups. Discarding colostrum and prelacteal feeds are rooted in the traditions of South Asian culture, and are cited as barriers to breastfeeding (Sharma and Byrne 2016). However, little is known about what factors influence these practices.

Reviews of factors that inhibit or promote breastfeeding in the past have listed factors under broad categories such as psychosocial and biophysical yet there has been little information about what these terms mean as no clear definitions are provided. It is believed that Hector et al's (2005) conceptual framework (as described in chapter 1) will strengthen the synthesis of the data in the scoping review as it will allow to organise and understand the many factors that influence breastfeeding. The model proposes three levels of factors that influence breastfeeding practices: individual, group and society. The factors identified from the review will be classified into one of the three levels to better understand what levels the factors work on to impact infant feeding amongst IPAB mothers. This information will help target the type of intervention that may be used to address the factors experienced. A 'factor' was considered as anything that had an impact or potential impact on infant feeding practices of IPAB mothers.

5.3.1.2 Search strategy and study identification

Arksey and O'Malley (2005) do not specify how to develop an effective search strategy in their framework. The process was an iterative process that required continuous refinement to ensure optimal retrieval of the relevant literature. Prior to conducting the full search of the literature, a few short searches were conducted to trial the various terms and combinations of terms used (Aromataris and Riitano 2014). The review question and inclusion/exclusion criteria set the foundation for the search strategy and highlighted key words that needed to be incorporated in the search strategies. The initial, simple search using the terms *South Asian* and *breastfeeding* or *infant feeding* and *factors* was conducted. The titles and abstracts of the retrieved articles were inspected to identify key terms and concepts that were important to the scoping review question (Aromataris and Riitano 2014). Search strategies were tailored to each individual database and were searched from their commencement to June 2016. The search was updated in January 2017 to ensure any new data (since the initial search) was captured. Additionally, the NHS specialist library for ethnicity and health (www.evidence.nhs.uk) and the Cochrane database (www.cochrane.org) were searched with adapted search terms where appropriate. Commonly, when devising a search strategy, the PICO tool is used which focuses on the Population, Intervention, Comparison and Outcomes (Methley et al. 2014). Such a search format is often suited to quantitative studies and may not yield effective results when searching for qualitative studies (Methley et al. 2014). Cooke, Smith and Booth (2012) addressed this issue with the SPIDER tool (sample, phenomenon of interest, design, evaluation, research type). This tool has been utilised effectively in previous scoping reviews (in different topic areas). However, given there was very little known about how much literature was available on the topic area, factors such as design and research type could not be prescribed at such an early stage. For this reason, the search strategy was based on the Sample (South Asian or Indian or Pakistani or Bangladeshi

mother), Phenomenon of interest (Infant feeding behaviours) and Evaluation (factors or influences). See table 20 for the search strategy used.

Table 20-Search terms used to retrieve articles

Sample *AND*	South Asian or Indian or Pakistani or Bangladeshi or Black and Minority ethnic groups or Ethnic groups
Phenomenon of interest *AND*	Infant feeding or Breastfeeding or Bottle feeding or Formula feeding or Mix feeding or Prelacteal or Colostrum
Evaluation	Influences or determinants or experiences

Initial results were filtered by full text/abstract, academic journal, articles from the UK or India, Pakistan or Bangladesh.

The aim of the scoping review was to be comprehensive as possible in identifying primary published studies and reviews suitable for answering the central research question. To ensure this was possible, the search strategy was applied to various platforms such as electronic databases, reference/citation lists and hand searching of key journals.

5.3.1.3 Study selection

Ethical approval was gained from Coventry University's Ethics committee for this scoping review (See Appendix 2).

The inclusion criteria for the studies in the review were all studies that included Primiparous and/or Multiparous IPAB mothers of infants up to the age of two years old. Studies describing modifiable factors impacting on infant feeding were included. Studies reporting infant feeding practices (i.e. breastfeeding, artificial feeding, mix feeding) of the above sub-groups were included. No date restriction was imposed on searches as this was an original review. All study

citations were downloaded into specialist reference management software (Refworks). To be included in the scoping review, a study citation had to include an abstract written in the English language, describe a study focused on South Asian mothers of Indian, Pakistani and/or Bangladeshi origin (British or Non-British born). Studies that report findings by IPAB sub-groups or by the broad umbrella term of 'South Asian' were included. Articles that included various ethnic groups were included if the results presented were broken down by South Asian population. To make sense of the results obtained only articles reporting the influences on breastfeeding initiation, breastfeeding exclusivity, any breastfeeding, mix feeding or artificial feeding were included.

The exclusion criteria for studies were those articles that did not report the influences on infant feeding practices of IPAB mothers. Editorial /newspaper articles and any articles that were not in English. Commentaries or opinion pieces were excluded but were used to provide guidance and key references to articles that may be eligible for inclusion in the review. All studies reporting non-modifiable factors (such as socio-demographic variables) and their associations with infant feeding were excluded.

5.3.1.4 Electronic databases

Consultation with a subject specialist at the author's place of study identified the most relevant databases to be searched and were as follows; Academic Search Complete, Applied Social Science Index and Abstracts (ASSIA), Cumulative index to Nursing and Allied Health Literature (CINAHL), Medline, Psych INFO and SCOPUS. Individual databases were searched using a combination of MeSH terms and keywords. The search strategy was kept broad to encompass all types of literature. A subject librarian (with expertise in systematic reviewing) was consulted and helped identify key words (specific to the various databases).

Initial application of the search strategies to the electronic databases indicated that there were many irrelevant studies. Filters embedded within databases were applied to the initial results

which coincided with the inclusion criteria mentioned above (e.g. full text/abstract, Academic journals, English language, those articles originating from the UK and India, Pakistan and Bangladesh). The principal reviewer applied the inclusion and exclusion criteria to all the references (abstract). Full texts of articles were sought if the studies addressed the research question or if the inclusion criteria could not be determined by the abstract alone. The relevance of an article could not always be determined by abstract alone. In such instances, the full text of the article was ordered. Articles where the relevancy was less obvious were read by abstract or full text then a decision was made by the author and/or other members of the supervisory team. Articles were divided into those that met the inclusion criteria and those that did not. Excluded papers were screened again to ensure there were no articles that were relevant to the review.

5.3.1.5 Web searches

A web search was conducted using Google and Google Scholar search engines. The NHS specialist library for ethnicity and health (www.evidence.nhs.uk) and the Cochrane database (www.cochrane.org) were searched with adapted search terms where appropriate.

5.3.1.6 Reference lists

Reference lists of all those included articles were checked for additional references that addressed the research question.

5.3.1.7 Hand searching of key journals

It is important that key journals are hand searched to identify articles that may have been missed in databases, reference and citation list searches (Arksey and O'Malley 2005). For this reason, the following key journals were identified to hand search; BMC Pregnancy and Childbirth, Maternal and Child nutrition, Ethnicity and Health and British Medical Journal. A subject librarian was consulted to understand suitable date restrictions for hand searching. This was set as all articles from the last ten years.

5.3.1.8 Reference manager.

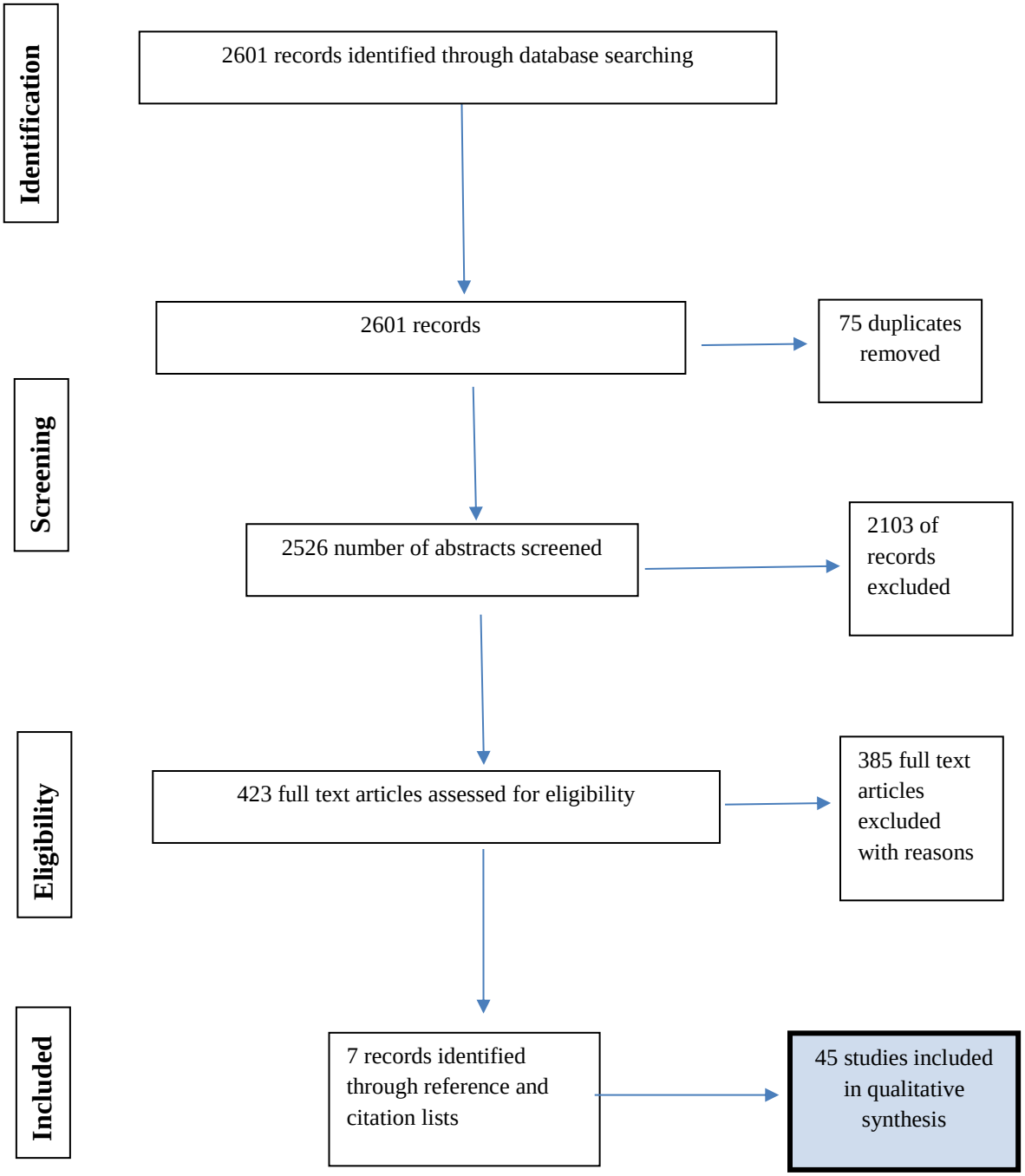
Refworks was used to manage all the bibliographic references obtained through searching the electronic databases.

5.4 Results

5.4.1 Record identification, screening and inclusion

The initial searches of the databases identified 2601 records. After removing duplicates, 2526 records remained. After screening these records, 2103 were excluded as they did not meet the inclusion criteria of the review. 423 full text articles were assessed for eligibility, of which 385 full text articles were excluded because they did not fulfil the inclusion criteria. Thirty-eight articles were included. Seven additional articles were included from other reference and citation lists. Figure 2 highlights the search process and articles retrieved.

Figure 2-The search process and numbers of articles retrieved.



5.4.2 Charting the data

The next stage of the scoping review involved synthesising and interpreting the qualitative data by '*sifting, charting and sorting material* '(Arksey and O'Malley 2005) according to key issues and themes. Decisions were made early on about what information needed to be extracted from the studies (See appendix 2 for study characteristics and data extraction tables). This was an iterative process based on the results of charting the data from the first few articles. Arksey and O'Malley (2005) recommend this stage should include extracting data that is a mixture of general information about the study and more detailed information relating to, the study population, outcome measures and the study design. The scoping review recorded the following information: General study information(record number, author(s), article title, country of origin), Study characteristics (Aims and objectives of the study , study design), Demographic information of the mother (Parity, level of education, socio-economic status, age , country of birth), Infant characteristics (Age of infant), Ethnicity/religion (of the mother and infant), Outcomes (the outcome measures/factors of interest), Definition of breastfeeding outcome(s)/ breastfeeding factors of interest, how breastfeeding outcomes are measured/ factors of interest explored), Key findings *(*All findings relating to factors/influences on breastfeeding initiation and breastfeeding exclusivity were extracted here and grouped as individual, group or societal level factors). See Appendix 2 for study characteristics and data extraction tables of findings.

5.4.3 Collating, summarising and reporting the results.

This section describes the 46 studies in terms of the country of origin of the studies, country of birth of the mothers in the sample, study design and broad topics areas covered by the studies. Population characteristics are then presented in terms of the mothers in the studies, parity, education and ethnicity design/method, participant characteristics, outcome measures and key findings. The majority of the studies did not define their infant feeding behaviours however the behaviours could be broadly categorised into breastfeeding initiation and exclusivity. Articles were read to understand the potential factors that influenced the behaviours outlined above. The 'key influences/factors were grouped into individual, group and societal level factors as described by Hector and colleagues (2005). It was anticipated that the results of the collation of the literature would be reported by individual sub-group i.e. IPAB sub-group. However, this was not always clear from the studies. Either studies merged the sub-groups under the broad umbrella term of South Asian or did not report the results by individual sub-group. For this reason, results are reported by individual sub-group where possible, otherwise the results are reported by 'South Asian' sub-group.

5.4.4 Synthesis

The synthesis included content analysis of the study characteristics and influences on infant feeding practices.

5.4.5 Study Characteristics

This section describes the 46 studies included in the scoping review (ranging from the year 1976 to 2014) in terms of the country of origin and ethnicity of the populations included, study designs, population characteristic in terms of the age, parity, education and the topic areas explored within each study.

5.4.5.1 Country of origin of studies and ethnicity of population recruited

Of the 45 articles, the majority (n=33) were based in South Asia. Of these 34, 24 studies were from India and seven from Pakistan and one from Bangladesh. Ten articles originated from the UK, of which four studies gave no information about whether the mothers were born in the UK or not. Three studies had recruited mothers who were born in Pakistan (Choudhry and Wallace 2012, Burton-Jeangros 1995, Condon et al. 2003).Noor and Rousham (2008) recruited mothers mainly born in Bangladesh with a small number of mothers who were also born in Pakistan. Evans et al. (1976) recruited a majority of mothers living in the UK but born in the Punjab (India). Williamson and Sacranie (2012) recruited British Muslims. However, there were no details on country of birth other than that these mothers were British Citizens.

5.4.5.2 Study design

Twenty-four of the articles used quantitative methods (predominantly cross sectional samples administering questionnaires), 17 studies employed qualitative methods (interviews and focus groups), and three articles used mixed methods which were based on using questionnaires and short interviews. One study conducted a literature review of the existing literature and one was described as a pilot study. One article failed to report the design of their study.

5.4.6 Topic areas reported by articles

A proportion of the articles in the review (n=17) reported on the administration of prelacteal feeds, ten reported on the rates of breastfeeding initiation, nine articles reported on breastfeeding behaviours in their samples. Breastfeeding exclusivity was reported by eight of the articles. Colostrum administration and/or reasons for discarding colostrum were reported by ten of the articles. Seven articles reported on general awareness and knowledge about breastfeeding, one article reported on the specific knowledge of when breastfeeding should be initiated, two articles reported on the awareness/ knowledge of the benefits of colostrum. Awareness and knowledge of breastfeeding (generally) was reported by seven of the articles. Smaller proportions of the articles in the review reported on bottle feeding, sociodemographic factors and infant feeding, breastfeeding cessation, physical and social environments surrounding infant feeding and pattern and mode of feeding babies. A small minority of articles reported on attitudes to infant feeding, infant feeding experiences, new-born care practices, awareness and knowledge of benefits of colostrum, delaying first feed, decision making about infant feeding, knowledge of when breastfeeding should be initiated, South Asian customs and beliefs, general breastfeeding beliefs (table 21)

Table 21-The topic areas covered by the studies in the review

Topic covered and description of topic	Literature from India	Literature from Pakistan	Literature from Bangladesh	Literature from UK	Total
Administering Prelacteal feeds- This refers to any article that provides information on the administration of prelacteal feeds and/or the reasons for giving prelacteal feeds.	Kannan, Carruth and Skinner(1999) Rangaswamy (2013) Sachdev and Mehrotra (1995 Patel, Banerjee and Kaletwad (2013) Vimala and Ratnaprabha (1987) Roy, Dasgupta and Pal (2009) Kaur, Puri and Bajaj(1983) Kishore, Kumar and Aggarwal(2009) Kushwaha, Mathur and Prakash(1987) Lingham et al.(2014)	Fikree et al. (2005) Nagra and Gilani, (1987) Khan, Memon and Bhutti (2013) Ali et al. (2011) Ashraf et al, (1993) Kulsoom and Saeed (1997) Lingham et al. (2014)			17

Topic area	**Literature from India**	**Literature from Pakistan**	**Literature from Bangladesh**	**Literature from UK**	**Total**
Rates of Breastfeeding initiation – This refers to any study reporting on the numbers of mothers initiating breastfeeding.	Kannan, Carruth and Skinner(1999) Patel, Banerjee and Kaletwad(2013) Kishore, Kumar and Aggarwal (2009) Singh, Haldiya and Lakshmina (1997) Madhu, Chowdary and Masthi(2009)	Khan, Memon and Bhutti, (2013) Ali et al. (2011)	Holman and Grimes (2001)	Douglas (2012)	9

Topic area	**Literature from India**	**Literature from Pakistan**	**Literature from Bangladesh**	**Literature from UK**	**Total**
Administering colostrum/reasons for discarding colostrum- This topic refers to all articles exploring the practice of administering or discarding colostrum, and the influence on this practice. This topic also includes studies reporting numbers of mothers administering or discarding colostrum	Gupta et al. (2010) Rangaswamy (2013) Sachdev and Mehrotra (1995) Deshpande, Zodpey and Vasudeo, (1996) Khanum, Umapathy and Begum (1976) Lingham et al. (2014)	Ali et al. (2011) Lingham et al. (2014)	Holman and Grimes (2001) Littler (1997)		10

Topic area	**Literature from India**	**Literature from Pakistan**	**Literature from Bangladesh**	**Literature from UK**	**Total**
Breastfeeding – This refers to any study discussing breastfeeding amongst sub-groups but doesn't include those studies that report numbers of mothers breastfeeding at a given time or 'rates' of breastfeeding.	Kumari et al. (1988) Ganjoo and Rowlands (1988) Kaur, Puri and Bajaj (1983) Thimmayamma, Vidyavati and Belavady (1980) Kumar, Pant and Chothia (1990) Chowdhury et al. (1978) Kushwaha, Mathur and Prakash (1987) Vimala and Ratnaprabha (1987)	Kulsoom and Saeed (1997)			9

Topic area	**Literature from India**	**Literature from Pakistan**	**Literature from Bangladesh**	**Literature from UK**	**Total**
Breastfeeding exclusivity- this topic refers to all studies on breastfeeding exclusivity. Factors that may influence exclusivity but not studies that solely report rates of breastfeeding exclusivity.	Karande, Perkar (2012) Roy, Dasgupta and Pal (2009) Kishore, Kumar and Aggarwal (2009) Madhu, Chowdary and Masthi (2009)	Ali et al. (2011) Ashraf et al. (1993) Kulsoom and Saeed (1997)		Ingram et al. (2008)	8
Awareness/Knowledge breastfeeding – This topic refers to all studies reporting on awareness or knowledge of breastfeeding benefits and practices amongst mothers.	Aggarwal, Arora and Patwari, (1998) Chaudhuri and Chatterjee (1991) Kishore, Kumar and Aggarwal (2009) Kumar, Pant and Chothia (1990) Kumari et al. (1988)			Douglas (2012) Burton-Jeangros (1995)	7
Bottle feeding – All studies exploring bottle feeding amongst mothers (e.g. Influences/reasons for bottle feeding their baby etc.)	Noor and Rousham (2008) Kushwaha, Mathur and Prakash (1987)	Kulsoom and Saeed (1997)		Noor and Rousham (2008)	4

Topic area	**Literature from India**	**Literature from Pakistan**	**Literature from Bangladesh**	**Literature from UK**	**Total**
Breastfeeding cessation – This topic refers to all studies referring to mothers stopping breastfeeding; in particular the factors that may influence breastfeeding cessation are included.	Sachdev and Mehrotra (1995) Vimala and Ratnaprabha (1987) Khanum, Umapathy and Begum (1976)	Ashraf et al. (1993)		Evans et al, (1976)	5
Physical/Social/ Cultural context of infant feeding – This refers to the context within which mothers feed their baby and the factors within those contexts that impact infant feeding.	Rangaswamy (2013) Bathija and Anand (1987)	Premji et al. (2014)		Choudhry, Wallace (2012) Condon et al. (2003)	5
Pattern /mode of feeding This topic refers to all studies referring to the influence on pattern or mode of feeding.	Gupta et al, (2010) Rangaswamy (2013) Vimala and Ratnaprabha (1987)	Nagra and Gilani (1987)			4

Topic area	**Literature from India**	**Literature from Pakistan**	**Literature from Bangladesh**	**Literature from UK**	**Total**
Infant feeding experiences- Refers to all studies exploring experiences of infant feeding experiences	Ganjoo and Rowlands (1988)			Noor and Rousham (2008) Williamson, Sacranie (2012)	3
New born care practices – This refers to the early care practices in the South Asian culture after the birth of the baby	Pati et al. 2014 Madhu, Chowdary and Masthi (2009)	Khadduri et al. (2008)			3
Delaying first feed – This refers to the practice of delaying breastfeeding.	Singh, Haldiya and Lakshminarayana (1997)	Fikree et al. (2005) Lingam et al (2014)			3
Attitudes to infant feeding Refers to all studies reporting mothers' attitudes to infant feeding.	Karande and Perker (2012)			Simmie (2006)	2

	Literature from India	**Literature from Pakistan**	**Literature from Bangladesh**	**Literature from UK**	**Total**
Breastfeeding beliefs- This refers to the beliefs mothers held about breastfeeding.	Lingham et al. (2014)	Kulsoom and Saeed (1997) Lingham et al (2014)			2
Awareness/Knowledge colostrum- This refers to all studies reporting awareness and or knowledge about colostrum and/or benefits of colostrum.	Gupta et al. (2010) Kannan, Carruth and Skinner (1999)				2
Infant feeding decision making- This refers to studies reporting on the infant feeding decision		Premji et al. (2014)		Meddings, Porter (2007)	2
Knowledge of when breastfeeding should be initiated – This refers to the knowledge of mothers	Gupta et al. (2010)				1

about when breastfeeding should be initiated					
	Literature from India	**Literature from Pakistan**	**Literature from Bangladesh**	**Literature from UK**	**Total**
South Asian customs/beliefs – Reports on specific South Asian cultural beliefs surrounding infant feeding amongst mothers.	Arora et al. (1985)				1

5.4.7 Population characteristics

The following section provides details on the samples used within the studies included in the review. The studies differed in terms of the level and content of the information they provided about their participants.

5.4.7.1 Age

There was variation in terms of how the age of the participants was reported. 34 of the 46 articles provided no information about the age of the mothers in their sample. Five of the articles provided ages of mothers in categories, the same number provided the mean age of the mothers, two articles provided the age of the majority of their sample.

5.4.7.2 Parity

Of the 46 articles, 35 of the articles provided no information on the parity of the mothers in the study. The remainder of the articles recruited both primiparous and multiparous mothers.

5.4.7.3 Education

Of the 46 articles, 28 articles provided no information on the education levels of the mothers included in their samples.

5.4.7.4 Ethnicity

Of the 46 articles, 24 recruited mothers from an Indian ethnic background (all studies originated from India). Eight articles were based in Pakistan and recruited mothers from a Pakistani ethnic

background. One article recruited both Pakistani and Indian mothers living in India and Pakistan. One originated from America but studied mothers living in India. Eleven articles were based in the UK; four articles recruited South Asian mothers but did not distinguish between the individual sub-groups that made up the South Asian group. Three articles reported the sample as Pakistani, two articles recruited both Pakistani and Bangladeshi mothers, one article recruited Bangladeshi mothers, and one article recruited Indian mothers. One article did not give information on ethnicity but stated that their sample was from the Muslim community.

5.5 Influences on infant feeding practices of Indian, Pakistani and Bangladeshi mothers.

The data extraction tables (appendix 2) guided the extraction of information across the papers and aided consistency, in terms of what information was extracted. Factors will be discussed in relation to breastfeeding initiation and breastfeeding exclusivity. These factors were grouped into individual, group and societal level factors as described by Hector et al's (2005) conceptual framework.

5.5.1 Breastfeeding initiation

Breastfeeding initiation was influenced by individual and societal levels factors that are discussed in detail below.

5.5.1.1 Individual level factors

Non-UK born Indian mothers believed that breast milk did not meet the hunger needs of their babies (Premji et al. 2014). Non-UK Indian and Pakistani mothers believed that the breast was unclean straight after birth (Lingam et al. 2014) and thus did not initiate breastfeeding because of this.

There was a lack of knowledge about the advantages of breastfeeding and the disadvantages of bottle feeding amongst Non-UK Pakistani mothers (Kulsoom and Saeed 1997). Indian and Pakistani mothers from the UK who had a negative attitude to breastfeeding were more likely to formula feed and believed that formula feeding was a more convenient method than breastfeeding (Simmie 2006). These mothers also believed that formula feeding was just as healthy as breast milk (Simmie 2006). Favourable attitudes to bottle feeding were also reported by Condon et al. (2003) in a sample of Non-UK born Pakistani and Bangladeshi mothers. These mothers reported

experiencing a change in attitudes to bottle-feeding since moving to the UK. Pakistani mothers (both from the UK and Pakistan) perceived bottle feeding to be advantageous as it avoided embarrassment of breastfeeding in the presence of other people and afforded mothers the possibility of feeding outside the home (Burton-Jeangros 1995). Non-UK Pakistani mothers perceived themselves to be weak the days following birth and thus not physically fit to breastfeed immediately after the birth (Kulsoom and Saeed 1997).

There were several physiological influences that deterred mothers from initiating breastfeeding. Non-UK Indian mothers cited the absence of milk secretion, discomfort to the mother (Gupta et al. 2010) and insufficient milk/breast problems (Rangaswamy 2013). Non-UK Pakistani mothers also stated insufficient milk as a potential factor in deterring breastfeeding initiation (Kulsoom and Saeed 1997). UK South Asian mothers believed that poor diets lead to insufficient milk (Condon et al. 2003) and deterred mothers from initiating breastfeeding.

Breastfeeding initiation was potentially impacted by the discarding colostrum and the introduction of prelacteal feeds. Non-UK Pakistani mothers and some Non-UK Indian mothers held strong beliefs about the health benefits of giving prelacteal feeds such as honey. Honey was thought to reduce coeliac, act as a laxative and a cleanser for the baby's stomach (Fikree et al.2005, Nagra and Gilani 1987, Khan, Memon and Bhutti 2013 and Chaudhuri and Chatterjee 1991). Some Non-UK Indian mothers also believed their baby was too weak to suck soon after birth and thus was given prelacteal feeds like honey which were thought to give the baby energy (Kannan, Carruth and Skinner 1999). Non-UK Pakistani mothers held beliefs about the inadequacy of colostrum, believing it to be dirty and non-nutritious (Ali et al. 2011) and some Non-UK Indian mothers believed that it was difficult to digest for the new-born (Pati et al. 2014). Some articles reported that Pakistani mothers believed breast milk did not come into the breast for three days after birth and so thought it necessary to provide the infant with prelacteal feeds (Lingam et al. 2014, Kulsoom and Saeed 1997). Prelacteal feeding was also reported to be

common in Non-UK Indian mothers that had a lack of knowledge about the benefits of exclusive breastfeeding (Roy, Dasgupta and Pal 2009).

There were misconceptions about the suitability of colostrum for the baby. Non-UK Indian and Pakistani mothers thought it to be detrimental to the baby's health (Rangaswamy 2013, Gupta et al. 2010, Kannan, Carruth and Skinner 1999, Narayan and Gilani 1991, Khanum, Umapathy and Begum 1976 and Singh, Haldiya and Lakshminarayana 1997). UK Bangladeshi mothers believed that colostrum would not benefit their baby because it was thin and watery and therefore was too 'weak' to give to the baby (Littler 1997). Non-UK Pakistani mothers believed that colostrum was dirty old milk that was stored in the breast tor 9 months and could cause harm or even kill the baby (Khadduri et al. 2008, Lingam et al. 2014). One article reported on UK Pakistani and Bangladeshi mothers' beliefs that colostrum blocked breast ducts and needed to be discarded (Condon et al. 2003). Gupta et al. (2010) reported that there was a lack of knowledge about the advantages of colostrum amongst Non-UK Indian mothers and was one of the reasons they did not give it to their infants. This was also echoed by (Littler 1997) findings; only two of the 60 UK-born Bangladeshi mothers were aware that colostrum contained powerful antibodies for the baby.

5.5.1.2 Societal level factors

For Non-UK Pakistani and Indian mothers delaying initiation was the norm which stemmed from cultural beliefs (Singh, Haldiya and Lakshminarayana 1997)and was encouraged by mothers and mothers-in-law (Rangaswamy 2013). Other articles found contrasting findings where Non- UK Indian mothers believed it to be a customary belief to initiate breastfeeding (Gupta et al. 2010). Pakistani mothers also stated that that their religion (Islam) and culture encouraged it (Meddings and Porter 2007, Williamson and Sacranie 2012).Non-UK Indian mothers who artificially fed their babies were more likely to do so because of misconception or wrong advice (Chowdhury et al. 1978).

Other articles reported that Non-UK Indian and Pakistani mothers were advised to give prelacteal feeds to their infants by family members such as their mothers and mothers-in-law and health professionals (Kannan, Carruth and Skinner 1999, Kulsoom and Saeed 1997) Some Non-UK Pakistani and Indian mothers perceived that it was the norm to give infants prelacteal feeds and assumed that other mothers gave prelacteal feeds to their infants (Lingam et al. 2014, Kaur, Puri and Bajaj 1983). One article (Pati et al. 2014) reported on the association of place of delivery and likelihood of giving prelacteal feeds. It was found that those Non-UK Indian mothers who had home deliveries were more likely to give their infants prelacteal feeds compared to those that delivered their infants in a hospital setting (Pati et al. 2014).

Five articles from India and Pakistan reported that prelacteal feed was seen as a cultural tradition/practice (Kumar, Pant and Chothia 1990, Deshpande, Zodpey and Vasudeo 1996, Lingam et al. 2014, Khan, Memon and Bhutti 2013 and Kulsoom and Saeed 1997). It was thought that the morals of the individual giving the feed are instilled in the infant (Kulsoom and Saeed 1997).

Discarding colostrum was a well-known cultural tradition that most Non-UK Indian and Pakistani mothers followed (Rangaswamy 2013, Kulsoom and Saeed 1997, Deshpande, Zodepey and Vasudeo 1996 and Singh, Haldiya and Lakshminarayana 1997). Non-UK Indian mothers also discarded colostrum as a result of being advised by elderly female members (Gupta et al. 2010) particularly mothers and mothers-in-law (Kannan, Carruth and Skinner 1999, Rangaswamy 2013 and Singh, Haldiya and Lakshminarayana 1997). There was a belief amongst Non-UK and UK Pakistani mothers-in-law that colostrum was dirty because it had been stagnant for nine months and hence mothers were advised against giving it (Fikree et al. 2005, Meddings and Porter 2007, Pati et al. 2014).

Table 22 provides a summary of the individual and societal level factors that influenced breastfeeding initiation amongst IPAB mothers. The tick symbols represent the availability of evidence and the question marks indicate no evidence available to either confirm or disconfirm the factors in question that may potentially impact on breastfeeding initiation.

Table 22-A summary of the individual and societal level factors that influenced breastfeeding initiation across the three sub-groups.

Individual level factors		Indian	Pakistani	Bangladeshi
	Breast milk does not meet hunger needs	✓	?	?
	Breast unclean after delivery	✓	✓	?
	Lack of knowledge about advantages of breastfeeding and disadvantages of bottle feeding	?	✓	?
	Negative attitudes to breastfeeding	✓	✓	?
	Favourable attitudes to formula feeding	✓	✓	✓
	Physiological influences	✓	✓	?
	Discarding colostrum	✓	✓	✓
	Prelacteal feeds	✓	✓	?
Societal level factors				
	Norm of delaying initiation (encouraged by culture, ,mothers, mothers-in-law)	✓	✓	?
	Religion/Culture encouraged breastfeeding	✓	✓	?
	Bottle feeding due to misconceptions or wring advice	✓	?	?
	Advised to give prelacteal feeds by family members	✓	✓	?
	Norm/cultural tradition to give prelacteal	✓	✓	?
	Discarding colostrum a cultural tradition	✓	✓	?
	Advised by family members to discard colostrum	✓	✓	?

5.5.2 Breastfeeding exclusivity

5.5.2.1 Individual level factors

Breastfeeding was often stopped during maternal ill health for Non-UK Indian mothers (Arora et al.1985), further details on maternal ill health were not given by Arora and colleagues. Other reasons Non-UK Indian mothers were unable to continue breastfeeding were breast rejection, insufficient milk, lactation failure and child/mother illness (Sachdev and Mehrotra 1995).

A perception that breast milk had psychological benefits for the baby (such as increased IQ, better personalities) was associated with UK Pakistani mothers engaging in breastfeeding in one study (Choudhry and Wallace 2012). Having a motivation to breastfeed was also associated with higher rates of exclusive breastfeeding amongst Non-UK Indian mothers (Bathija, and Anand 1987).

A lack of breastfeeding knowledge was related to decreased rates of exclusive breastfeeding amongst Non-UK Indian mothers (Kishore, Kumar and Aggerwal 2009). Indian mothers who had lower attitude scores on breastfeeding were less likely to exclusively breastfeed (Karande and Perker 2012). Whilst an overall positive attitude to breastfeeding amongst UK Indian and Pakistani mothers resulted in an increased likelihood of breastfeeding (Simmie 2006). All UK Indian and Pakistani mothers who intended to breastfeed did so (Simmie 2006). Evans et al. (1976) found that UK Indian mothers intending not to breastfeed perceived bottle feeding to be more convenient, gave reasons pertaining to a physical cause, believed that breast milk would upset their baby, or made the decision to not do so based on experience. Non-UK Indian mothers also believed that having an inadequate diet was a reason for failure to breastfeed their babies (Arora et al 1985).

Breastfeeding was chosen because it was perceived to be easier by UK Indian and Pakistani mothers (Condon et al. 2003). In contrast, some Non-UK Pakistani mothers reported that working, shopping and other activities outside the home hindered the mother's ability to exclusively breastfeed (Kulsoom and Saeed 1997). No further details were provided on this.

Breastfeeding exclusivity was affected because there was a preference amongst Non-UK Indian and Pakistani mothers to mix feed from an early age (Arora et al1985)due to perceptions of breast milk inadequacy (Douglas 2012, Ali et al. 2011).

5.5.2.2 Societal level factors

Family members had an influence on breastfeeding duration. A partner's support of breastfeeding and support of household chores was associated with breastfeeding duration amongst UK Pakistani and Bangladeshi mothers (Condon et al. 2003). This contrasted with the findings by Ingram et al. (2008) who found although encouragement from family was important for some UK South Asian mothers to continue breastfeeding, partners were not seen as a main support of breastfeeding because '*they encouraged with words, but nothing else'*. Ingram et al. (2008) also found that some South Asian mothers were unable to breastfeed longer than 6 months as there was no support for them to do so and they had no support in completing chores in the household. Family members did not support mothers in breastfeeding, and often told UK Pakistani mothers that their breast milk was inadequate (Choudhry and Wallace 2012). Sachdev and Mehrotra (1995) also reported that a reason for breastfeeding cessation amongst a small minority of their Non-UK Indian sample was because their relatives advised them to do so.

Some South Asian mothers also experienced family pressures to mix feed their babies (Douglas 2012).No other information was given about why there was a family pressure to mix feed in this sample.

There were contrasting results about the influence of the South Asian culture on breastfeeding duration. Ingram et al (2008) found that the South Asian culture encouraged breastfeeding

amongst their UK South Asian mothers. The culture taught mothers that 'breast was best'. Choudhry and Wallace (2012) explored culture through the concept of acculturation and found that those who were less acculturated to the UK and attended more to the beliefs and values of their South Asian culture were more likely to breastfeed. Whilst those mothers that were classified as highly acculturated to the UK were vulnerable to decreased rates of breastfeeding. Table 23 provides a summary of the individual and societal level factors that influenced breastfeeding exclusivity. The tick symbols represent the availability of evidence and the question marks indicate no evidence available to either confirm or disconfirm the factors in question that may potentially impact on breastfeeding exclusivity (Please see appendix two for further study characteristics details and data extraction tables for the scoping review).

Table 23-A summary of the individual and societal level factors that influenced breastfeeding exclusivity across the three sub-groups.

Individual level factors		Indian	Pakistani	Bangladeshi	South Asian
	Maternal ill health	✓	?	?	?
	Insufficient milk/breast rejection	✓	?	?	?
	Belief that breastfeeding has psychological benefits	?	✓	?	?
	Motivation to breastfeed	✓	?	?	?
	Lack of breastfeeding knowledge	✓	?	?	?
	Attitudes to breastfeeding	✓	✓	?	?
	Attitudes to bottle feeding	✓	?	?	?
	Inadequate diets	✓	?	?	?
	Activities outside the home inhibit breastfeeding	?	✓	?	?
	Preference to mix feed	✓	✓	?	?
Societal level factors					
	Partners support	?	✓	✓	?
	Lack of support with household chores	?	?	?	✓
	Relatives advised to stop breastfeeding	✓	✓	?	?
	Family pressures to mix feed	?	?	?	✓
	Culture taught mothers 'breast is best'	?	?	?	✓
	Acculturation detrimental	?	✓	?	?

5.6 Discussion

The scoping review is the first review to bring together the literature on the influences that may impact IPAB mothers' infant feeding practices both in South Asia and in the UK. The review reveals that breastfeeding initiation and breastfeeding exclusivity are affected by a range of individual and societal level factors. Not all studies explicitly asked about prelacteal feeds or colostrum, this was particularly true of studies from the UK. Thus, data is simply not available about whether such behaviours are occurring amongst IPAB mothers living in the UK.

A comprehensive scoping review of the UK and South Asia literature was conducted. The results highlight that the majority of factors that may influence the uptake of breastfeeding initiation and breastfeeding exclusivity operate at an individual or societal level.

Breastfeeding initiation is impacted at an individual level by mothers holding misconceptions about the adequacy of breastmilk, positive attitudes to formula milk, preference for mix feeding, lack of knowledge about the benefits of breastfeeding, administration of prelacteal feeds and discarding colostrum. Physiological factors such as insufficient milk and maternal ill health were reported by some studies but there was little indication as to whether such physiological factors were biological or perceived by the mother. At a societal level, conflicting norms of delaying initiation and initiating breastfeeding were reported. Cultural traditions of administering prelacteal feeds and discarding colostrum were practised and advised by mothers/mothers-in-law.

Breastfeeding exclusivity was impacted by several factors at an individual level. Motivation to breastfeed, perceptions that breast milk had psychological benefits for the infant and intentions to breastfeed encouraged breastfeeding. A lack of breastfeeding knowledge influenced breastfeeding exclusivity. At a societal level, the family context played a key role in breastfeeding exclusivity. Although some studies described the encouragement of the family, most studies found that family members advised not to breastfeeding. Cultural factors, such as acculturation to the UK had detrimental effects on breastfeeding practices.

Prelacteal feeds and discarding colostrum were behaviours reported mainly by studies from South Asia. This could also be due to the UK literature not choosing to explore the topic in detail. It is important to understand whether such practices are inherent in the UK today amongst South Asian mothers, as it has implications for the successful breastfeeding initiation and breastfeeding exclusivity behaviours.

Prelacteal feeds and discarding colostrum have previously been cited as factors impacting on breastfeeding initiation and exclusivity (Pati et al. 2014). However, until now, there has been little attention to the potential factors that influence such practices. It has been learnt from the scoping review, that these practices are deeply rooted in societal and cultural tradition. Thus, any efforts to address such behaviours would need to be sensitive to these traditions and the meaning they hold for mothers from the South Asian community.

Insufficient or inadequate milk supply is a commonly cited reason for breastfeeding cessation (McAndrew et al. 2012). However, little attention is paid to whether this is actual or perceived by the mother. There is evidence that perceived insufficient milk supply is the primary reason for breastfeeding discontinuation globally (Woods and Sanders 2017). There is complexity in unravelling whether insufficient milk supply is physically based or whether it is founded on psychological perceptions of the mother, or a mixture of both. None of the studies that cited insufficient milk/inadequacy of milk discussed this distinction. Future research would benefit from exploring this in detail.

The majority of the studies employed quantitative methods to understand infant feeding practices amongst IPAB mothers. More qualitative enquiry is needed to understand what these factors mean for the mothers and how they can best be supported to address some of the factors experienced. Work as early as 1976 in the UK recognised that administration of prelacteal feeds and discarding colostrum were practices amongst South Asian mothers (Evans et al. 1976). However, since then little has been known about why mothers engage in such behaviours. In recent years, the UK has seen a growth in the number of large scale quantitative studies understanding infant feeding amongst mothers living in the UK (e.g. The IFS's, The Born in Bradford Study, The Millennium Cohort study). However, these studies have paid little attention to some of the issues raised in terms of discarding colostrum and administering prelacteal feeds. As it stands, questions remain about whether such practices still occur amongst IPAB mothers living in the UK, because recent literature has not asked the question about such behaviours.

The scoping review has collated the existing evidence on factors that may potentially influence IPAB mothers' breastfeeding initiation and exclusivity behaviours. It is difficult to draw conclusions between the similarities and differences amongst the sub-groups because these are only based on whether there is evidence available or not rather than actually differences per se. The scoping review is able to therefore identify the factors that impact on IPAB mothers' breastfeeding behaviours and identify where there is evidence for the factors that impact on infant feeding amongst Indian, Pakistani and Bangladeshi mothers and where the evidence is lacking. For example, looking at the evidence for factors that impacted on breastfeeding initiation there was evidence across all three sub-groups for favourable attitudes for formula feeding and discarding colostrum. Across Indian and Pakistani sub-groups there was a perceived norm to delay breastfeeding initiation and to discard colostrum and provide prelacteal feeds. There was no evidence for Bangladeshi mothers as to why they discarded colostrum thus further work would benefit from understanding this practice amongst Bangladeshi mothers.

Tables 22 and 23 are useful for highlighting the gaps in knowledge around what factors may impact breastfeeding exclusivity amongst IPAB mothers. For example, there was no evidence available to understand the individual level factors that influenced Bangladeshi mother's breastfeeding exclusivity. Whilst there was some evidence for the factors at a societal level that impacted breastfeeding exclusivity.

The majority of the studies originated from South Asia and thus some of the findings may hold relevance to those mothers migrating to the UK from countries like India, Pakistan and Bangladesh however whether such findings can describe the influences on infant feeding amongst those born in the UK needs further investigation. The findings are useful to inform the potential influences on those mothers that immigrate to the UK from South Asia; a population that little has been known about until now. Non-English studies were not included in the review. It is possible that valuable information could have been lost by excluding such studies.

The studies from the UK ranged from 1976-2012. Thus the literature is now dated, and further work would be beneficial in understanding whether the factors impacting on infant feeding highlighted by the scoping review still influence infant feeding of South Asian mothers today. A point to note is that of the 11 studies from the UK, six sampled mothers that were Non-UK born, thus providing a broader picture of the South Asian sub-group then if studies focused solely on UK-South Asian born populations (such as those like the IFS).

New research is needed on South Asian mothers living in the UK and the factors that may influence their feeding choices to understand if the factors highlighted in the scoping review still impact on infant feeding amongst IPAB mothers. It is of interest to explore whether similar factors highlighted in the review influence infant feeding behaviours amongst this sub-group or whether their infant feeding choices are influenced by other factors. The scoping review identified very little research from Bangladesh; therefore conclusions cannot be drawn about what factors may influence infant feeding amongst Bangladeshi mothers.

Unlike systematic reviews, there is little guidance on how to conduct scoping reviews (Tricco 2016). Arksey and O'Malley's (2005) work provided a framework for the current scoping review; however this framework does not appraise the quality of the studies included in the review. Levec et al. (2010) amongst others are concerned about the inability to provide an assessment of the quality of the studies included in a scoping review. Future work would benefit from having quality appraisal incorporated into scoping reviews. This area requires further work and guidance (Tricco 2016), but would have implications for the robustness of the conclusions drawn from scoping reviews that assess quality of the studies included.

It is accepted that there may be other literature exploring factors that influence IPAB mothers at a local level across both South Asia and the UK, however since these have not been published they were not identified in the present scoping review. Future work would benefit from identifying grey literature that has explored factors that influence infant feeding practices amongst IPAB mothers.

The results of the review form the basis for further enquiry which is a common trait for scoping reviews (Daudt, Van Mossel and Scott 2013). The findings of the scoping review will be used to inform the interview schedule development for the qualitative strand of the thesis.

5.7 What this chapter adds

- Individual and societal level factors impact breastfeeding initiation and breastfeeding exclusivity, the majority of which are culturally ingrained in the South Asian culture.
- Up-to-date UK literature on infant feeding influences amongst South Asian mothers is scarce, and there are no studies that have explored the administration of prelacteal feeds by mothers living in the UK. Current knowledge about colostrum being discarded amongst South Asian mothers is lacking.

5.8 Conclusion

This is the first known attempt to collate existing literature from the UK and in South Asia to understand the influences on infant feeding practices of IPAB mothers.

A multifactorial approach, tailored to the beliefs and practices of IPAB mothers is needed to ensure optimum breastfeeding amongst these sub-groups. Individual level factors such as lack of knowledge, perceptions that breastmilk and colostrum are inadequate, dirty or difficult to digest can be addressed by educating mothers about the powerful benefits of breastfeeding and colostrum. Societal levels factors such as perceived norms about delaying initiation of breastfeeding and being advised to administer prelacteal feeds need to be addressed by taking a community approach to addressing such misconceptions. Such 'norms' are passed down by other family members such as the mother or mother-in-law but also may be passed down from elders in the community. Educating individuals will help address the transmission of such misinformed information that may prove detrimental to mothers from the IPAB backgrounds initiating breastfeeding and breastfeeding exclusively. To the knowledge of the authors this is the first study in the UK to bring together existing literature to understand such influences. Individual factors such as low breastfeeding knowledge and breastfeeding intentions and societal level factors such as administering prelacteal feeds and discarding colostrum impact breastfeeding initiation and exclusivity. There is a lot more evidence available to suggest that such practices occur in South

Asia but are not discussed in the UK literature. The next step is to understand whether such influences impact on the infant feeding behaviours of IPAB mothers living in the UK. The findings will be used to develop an interview schedule for mothers and grandmothers living in the UK, and will later inform the development of a suitable intervention to support these mothers to optimally feed their babies.

5.9 Chapter Summary

This chapter presents the findings of the scoping review of the UK and South Asian literature on the influences on infant feeding amongst IPAB mothers. Individual and societal level factors impact on the infant feeding of the above sub-groups. There was little information on the influences of mothers living in the UK. Further information is needed to understand whether such factors impact on IPAB mother's infant feeding in the UK.

The next chapter provides the methods adopted for the qualitative enquiry with mothers and grandmothers to understand the infant feeding experiences and influences amongst IPAB mothers living in the UK.

6 Methods to understand Indian, Pakistani and Bangladeshi Mothers' and Grandmothers' beliefs, practices and experiences about infant feeding in the UK

6.1 Chapter Overview

This chapter presents the methods for the qualitative enquiry with IPAB mothers and grandmothers living in the UK. The chapter opens with some of the issues and gaps in the literature raised in previous chapters and how the qualitative methods will address the issues.

6.2 Introduction

The scoping review has bought together the existing literature on infant feeding practices of the above sub-groups and has highlighted key factors at the individual and societal level that impact breastfeeding rates amongst IPAB mothers.

Breastfeeding initiation is impacted at an individual level by mothers holding misconceptions about the adequacy of breastmilk, positive attitudes to formula milk, preference for mix feeding, lack of knowledge about the benefits of breastfeeding, administration of prelacteal feeds and discarding colostrum. Physiological factors such as insufficient milk and maternal ill health were reported by some studies but there was little indication as to whether such physiological factors were biological or perceived by the mother. At a societal level, conflicting norms of delaying initiation and initiating breastfeeding were reported. Cultural traditions of administering prelacteal feeds and discarding colostrum were practiced and advised by mothers/mothers-in-law.

Breastfeeding exclusivity was impacted by several factors at an individual level; Motivation to breastfeed, perceptions that breast milk had psychological benefits for the infant and intentions to breastfeed encouraged breastfeeding. A lack of breastfeeding knowledge influenced breastfeeding exclusivity. At a societal level, the family context played a key role in breastfeeding exclusivity.

Although some studies described the encouragement of the family, most studies found that family members advised not to breastfeed. Cultural factors, such as acculturation to the UK had detrimental effects on breastfeeding practices.

The information collated in previous chapters of the thesis is valuable and points to clear vulnerabilities in infant feeding practices particularly for Pakistani and Bangladeshi mothers.

The scoping review also found that the majority of the studies originated from South Asia and were quantitative in nature. The studies therefore have been able to highlight the prevalence of certain practices such as reduced rates of breastfeeding, administration of prelacteal feeds and discarding colostrum but there is a lack of detailed understanding of such practices and this is even more so the case for the infant feeding practices and experiences of IPAB mothers living in the UK. Such a lack of understanding can be addressed by qualitative methods. The practices mentioned above are known to effect breastfeeding initiation and exclusivity (Pati et al. 2014). Understanding why and how practices such as discarding colostrum and administering prelacteal feeds occur remains to be explored in current literature. This lack of understanding can be addressed by the use of qualitative methods.

The literature states differing conclusions (e.g. Choudhry and Wallace 2012, Anwar and Wallace 2013, Ingram, Johnson and Hamid 2003) about the role of the family in terms of whether it facilitates or inhibits breastfeeding behaviours. An understanding of the role of the family context and its influence in promoting or inhibiting breastfeeding amongst these sub-groups is therefore needed. Further, qualitative interviews will allow exploring how the process of immigrating or acculturation may impact mothers' infant feeding practices. Traditionally, acculturation and its relation to health behaviours has been assessed by scoring individuals on an acculturation scale and then drawing associations between their scores and certain health behaviours. Such quantification of experiences does little to understand how acculturation maybe experienced by individuals and how the process may have its impact on health. The qualitative strand of the thesis

will ask specific questions about how immigration and the process of acculturating (or not) may have had an impact on mothers' infant feeding practices. Such information will allow supporting mothers through the process and protecting their breastfeeding behaviours.

Demonstrating rigour in qualitative research is a challenge particularly as there is no consensus about the standard by which research should be judged (Rolfe 2006). The COREQ (Tong, Sainsbury and Craig 2007, See Appendix 3) guides the standard of qualitative research and a framework for demonstrating rigour. The COREQ was used as a guide when reporting the qualitative methods in this chapter.

The current chapter discusses the methods used to carry out in-depth qualitative enquiry with IPAB mothers and grandmothers living in the UK.

6.2.1 Aims

The overall aim of the qualitative enquiry was to;

> *Understand the infant feeding beliefs, practices and experiences as described by IPAB mothers and grandmothers living in the West Midlands*

The above aim will be addressed by conducting in depth interviews and focus groups (where appropriate) with mothers and grandmothers to understand how infant feeding choices are made and the factors that facilitate such choices, understand the cultural and/or social factors that may surround infant feeding with a focus on behaviours such as discarding colostrum and administering prelacteal feeds. An understanding of the role of the family context and the role of the grandmothers (maternal/paternal) in infant feeding will be sought.

6.3 Method

Before conducting the main qualitative body of work a pilot study was conducted in order to understand whether the recruitment procedures, interview schedule and general methods for conducting the qualitative work were suited to the sub-groups taking part. The following section describes the pilot study and how it informed the main body of qualitative work with mothers and grandmothers.

6.3.1 Pilot Study

The Coventry University Ethics Committee gave approval for the research (a small pilot study and the main qualitative study). Each research site was offered a copy of the ethics clearance certificate (See Appendix 3).

6.3.1.1 *Interview schedule development*

Before conducting the pilot study it was important to ensure an interview schedule was developed that would truly capture the experiences of IPAB mothers and grandmothers. The interview schedule development was a lengthy process based on the authors experiences of working with the South Asian sub-groups (Choudhry and Wallace 2012, Anwar and Wallace 2013), discussions with health professionals working with IPAB mothers, on the findings of the scoping review (chapter 5) and at later stages, the findings of the pilot study.

The scoping review highlighted key areas that needed closer inspection in the interviews such as discarding colostrum and administering prelacteal feeds. Health professionals working at the children centres were unaware of such practices and whether such practices existed because they had not asked mothers whether they had engaged in such practices. For this reason, certain issues such as experiences of infant feeding, cultural influences, discarding colostrum and administration of prelacteal feeds were to be explored in detail.

6.3.1.2 *Recruitment*

IPAB mothers recruitment

A local organisation in the city working to improve maternal and child outcomes in Black and Minority Ethnic groups played a key role in supporting and providing access to some children centres in the city. The local organisation had been working with IPAB mothers for some years and had identified sub-optimal infant feeding practices. Three children centres were identified in the local city where there was a high population of South Asian mothers accessing postnatal services. The researcher negotiated access to the children centres via the centre managers. The researcher explained the objectives and purpose to the managers and the reasons why children

centres were approached to be potential recruitment sites. There was a strong buy in from all managers of the children centres because reduced breastfeeding rates were identified as a common problem in the local area amongst IPAB mothers. From the offset, the researcher was clear about how findings would be used to develop recommendations of how to best support optimal breastfeeding in these sub-groups of the local population. The researcher offered the findings to be shared with the managers of the centres in an anonymised format. A summary of the key findings of the interviews was offered, to help improve services for the sub-groups involved.

Respecting confidentiality, the researcher did not have direct access to mother's information, but health professionals that were working in the centres were made aware of the inclusion criteria for the study. They then identified women from their list of attendees. Women were introduced to the study and consent was given by mothers to have their details passed on to the researcher. Following research ethics protocols, the researcher then contacted the mothers, ensuring that they were fully aware of the project, its aims and what it would involve (see appendix 2 for information sheets). After ensuring this information was clear to mothers, and gaining agreement (see appendix 3 for informed consent sheets) that they still wanted to take part, a suitable day, time and location were arranged to conduct the interview. Although the core strategy for recruitment was via the children's centres, a snowballing strategy was also employed, whereby mothers identified other potential mothers that they knew would be interested in the project or met the inclusion criteria.

All mothers accessing one of three children centres in the locality were eligible for the study if they were from the IPAB ethnic group, had children that were two years or younger and could speak in either English, Urdu, Punjabi or Hindi. Bangladeshi mothers that could not speak English were excluded from the study as the researcher was unable to communicate in Bengali. The age criteria for the child was applied because it has been reported that the ability to recall breastfeeding experiences is valid and reliable when the recall period is shorter (i.e. three years or less, Li,

Scanlon, and Serdula 2005). Mothers who had more than one child under the age of two were asked to distinguish which child (by age) they were talking about when recollecting their accounts of infant feeding experiences and practices. The pilot study recruited five mothers in total (two born in the UK one born in Indian, and two born in Pakistan).

In previous work by the researcher (Choudhry and Wallace 2012), mothers reported that their husbands were not influential in deciding how to feed their babies. Fathers were not perceived to be sources of support regarding infant feeding; this role was mainly taken by the mothers-in-law (occasionally the mothers). For this reason, it was decided very early on that fathers would not be recruited into the study. This was a preference confirmed by mothers in the pilot study.

Grandmothers recruitment

From previous work it was known that grandmothers would be a harder to reach group than the mothers, particularly as women from the older South Asian generation are less likely to engage with research activities. For this reason, the eligibility criterion was not as strict as it was for the mothers. All women who were from the IPAB sub-group and were grandmothers (either maternal or paternal) were eligible for the study. Bangladeshi grandmothers that could not speak English were excluded from the study due to a lack of available support for communication or translation into Bengali.

Past research experience highlighted that often the mothers would attend the children centres with their mothers-in-law (grandmothers). Often the grandmothers would talk on behalf of the mothers. For this reason, it was thought appropriate that grandmothers were recruited via the mothers (i.e. their mothers and/or mothers-in-law).

The local city's profile of South Asian mothers is predominantly Indian, and Pakistani mothers, only a small minority of Bangladeshi mothers resided in the city; a point emphasised by the health professional working in the local area, who stated that only a small minority of Bangladeshi

mothers accessed the children centres. There was recognition that Bangladeshi mothers would be under-represented in the final sample however this was thought to reflect the demographic of the local community.

Qualitative sample sizes are usually small (Ritchie, Lewis and Elam 2003), particularly as the main aim is not to reach specific power to draw inferences or provide estimates of the incidence or prevalence of a phenomenon (Ritchie, Lewis and Elam 2003). The type of information gained from qualitative methodologies is rich in nature. There will be many 'hundreds of bits' of information from each unit of data collection (Ritchie, Lewis and Elam 2003). Thus, to analyse the data appropriately and to be managedeffectively, the sample sizes need to be kept small (Ritchie, Lewis and Elam 2003). Recruitment numbers were monitored and adjustments to the stratification table were made on practical grounds. For example, there was little representation of UK Indian and Bangladeshi mothers in the sample. However, this reflected the demographic accessing the participating children centres. There were very few UK mothers on the list of those attending the postnatal clinics hence this would be reflected in the numbers achieved for the one to one interviews.

6.3.1.3 Procedure for pilot study

Once a preliminary topic guide was drafted, the pilot study allowed the opportunity to explore the topics in detail and add to the topic guide in response to what mothers spoke about in the pilot study. Thus, the interview schedule development was an iterative process. This was also the case when developing the interview schedules for the grandmothers. Topic areas that were deemed important by mothers were brought into the grandmother interviews to understand their opinions on the topics discussed.

Interviews involved in-depth probing and questioning that was responsive to the participants and their experiences. In contrast to an unstructured interview, the interviews in this thesis were

guided by the topic guide and the researcher played an active role in moving the discussion through the various topic areas. There was scope for the participants to move through the topic areas spontaneously.

All Interviews that were conducted with the mothers were conducted in English, Hindi, Punjabi and Urdu, by the same researcher. Grandmothers' interviews were conducted in either Urdu or Punjabi. Interviews that were conducted in languages other than English were checked by an expert in these languages to ensure that the questions being asked reflected those from the original interview schedule (Appendix 3 for the topic guides for the mothers and grandmothers).

All individuals approached about the study were told that the care that they received from the centres they attended would not be affected if they decided that they did not want to take part. Such information promoted informed choice and ensured that their participation was completely voluntary.

6.4 Main qualitative study

The pilot study proved valuable and highlighted the preferences of the participants in terms of how they were willing to engage in the study. This information was then implemented into the research strategy for the main study. The lessons learnt from the pilot study are detailed below

6.4.1 Lessons learnt from the Pilot Study

6.4.1.1 Lesson 1- Recruitment of grandmothers

It was anticipated that mothers and grandmothers would be recruited in 'pairs' as this would allow to build a meaningful picture of the infant feeding context and experiences of the mothers in the study. However, the mothers in the sample were not comfortable for grandmothers to take part in the same project as them. Mothers were advised about the confidentiality and anonymity of their data, however there was still reluctance for this to happen. Mothers often stated that they wanted privacy from their mother-in-law when talking about various matters. Given such reluctance, a different recruitment strategy was sought for grandmothers.

A charity working with potential grandmothers from the South Asian community was approached. The charity catered specifically for the needs of the older South Asian population living in the local area and met once a month socially. The gathering was also a chance for grandmothers to discuss various issues or concerns that were affecting them. The local charity's manager was approached and the aims of the project were explained. She was grateful that this sometimes, overlooked sub-groups' views were being sought and put the idea forward to the individuals attending the session. The researcher was invited to the monthly session run at the centre where she introduced the study to the individuals. Initially, the researcher spent time with the individuals answering any questions that they had about the project. If individuals were happy

to take part, the researcher verbally went through the information sheet with them and explained the study (either in Hindi, Urdu or Punjabi).

6.4.1.2 Lesson 2- Mode of data collection

A lot of deliberation centred on the qualitative method of data collection. The experience of the author from previous studies in the field (Choudhry and Wallace 2012, Anwar and Wallace 2013) suggested that one to one interviews were the most appropriate method of choice. This preference was also confirmed in the pilot interviews by the mothers. Such a method afforded mothers privacy and allowed them to talk about sensitive topics without public discomfort that may have been experienced with other forms of data collection (such as focus groups). For this reason, the primary mode of data collection was interviews, however, the option of focus groups or telephone interviews was also offered to mothers.

6.4.1.3 Lesson 3- The interview schedule

The ordering of the questions was explored in the pilot study. Different options were exploredregarding the positioning of the demographic questions and the interview schedules. Although there was no formal discussion with mothers about the order in which they preferred the questions, there was a natural tendency towards talking about their birth experiences and then their first feed for their baby. For this reason, it was thought most suitable to start with the above and then develop the conversation with the other questions in the topic guide and having the demographic questions at the end of the interview.

It was anticipated that the interview would have to be verbally translated into Urdu, Hindi and Punjabi. The interview was written in English, but it was verbally translated by the author and an independent expert in the above languages. Prior to conducting the interviews the researcher conducted mock interviews with the expert to ensure that the questions being asked (in other languages) reflected the questions that were contained in the schedule. The methods of translation

ensured the validity of the schedule. Minor adjustments to some of the wording were made in the translated versions to ensure clarity.

The pilot study confirmed that the topic guide was not constraining the individuals regarding what they wanted to say and explored naturally occurring topic areas that mothers discussed about infant feeding experiences.

Acculturation Scale

Given that the thesis was interested in understanding the possible role of acculturation on IPAB mothers' infant feeding experiences and practices thought was given to the most suitable one for the study. At the time of conducting the interviews, there were a vast range of scales available, and the author was also aware of the very first acculturation scale developed in the UK for the South Asian populations (Palmer et al. 2007). An expert in cross cultural psychology and acculturation (Professor David Sam) was consulted. The research study and sample were explained and it was advised that the most appropriate acculturation scale to use with the sample of mothers and grandmothers was the Vancouver Acculturation Index (VIA, Ryder, Alden and Paulhus 2000), as it was one of the few acculturation measures that could be used with all ethnic groups and complemented current conceptualisations of acculturation as a bidimensional process (Huyunh, Howell and Benet-Martinez 2009).

The VIA was piloted with the mothers. However, the majority of mothers were uncomfortable answering some of the questions on the acculturation scale such as the questions on marrying someone from another culture. In some South Asian cultures, mothers said that this was considered to be a taboo subject, and so mothers did not feel it appropriate to answer this question. For this reason, the acculturation scale developed in the UK specifically developed for South Asian populations was also piloted (Palmer et al. 2007). This scale was perceived to be culturally appropriate.

The scale was developed to assess acculturation with items that were considered appropriate by South Asian sub-groups. The appropriateness was informed by existing literature and discussion groups with community link-workers from IPAB backgrounds (Palmer et al. 2007). The scale covered eight domains which were designed to reflect language, religious beliefs and traditions of culture and lifestyle distinctive to the South Asian sub-group (Palmer et al. 2007).

The acculturation scale had three subscales pertaining to;

- Behaviours suggesting greater acculturation in the host community (including use of the English language and wearing Western style clothing)
- Attitudes indicative of greater or lesser acculturation (such as feelings of acceptance, fears of discrimination and concerns regarding loss of cultural identity)
- Behaviours associated with the society of origin (including use of Asian media and non-use of the English language.

Although this scale was better received in terms of cultural appropriateness, all mothers in the pilot study did not understand what relevance questions, for example, based on fears about discrimination or the clothes that they wore had to infant feeding practices or experiences. This made mothers reluctant to answer the acculturation scale. For this reason, a decision was made to not use the scale to *quantify* level of acculturation. Instead a decision was made to explore qualitatively how the experience of immigration and possibly acculturation may have impacted their infant feeding choices. All mothers in the pilot found this to be a better approach. This approach also addressed some of the limitations of acculturation studies that fail to qualitatively capture the acculturation experience.

6.4.1.4 Lesson 4- Recruitment stratification

Traditionally non-UK born mothers had been described as under-represented which in part could be attributed to the language barrier that may exist amongst Non-UK born mothers. The researcher could communicate in various South Asian languages which allowed addressing such barriers in language and understanding. Although the children centres were situated in a large South Asian populated area of the city, the numbers of South Asian mothers accessing the centres were not large. At the time of the study, the children centre staff had a total of 30 mothers on their list who met the eligibility criteria of the study. For this reason a sampling matrix was designed to ensure that all IPAB sub-groups were, as much as possible represented in the final sample. The intended participant numbers are provided (table 24). The stratification table served as a guide for the numbers that were aimed to be recruited in the sample rather than a prescription of the exact numbers that were needed (see table 24).

Table 24-The intended numbers of mothers and grandmothers needed for the qualitative study

	UK born				**Non UK born**				**Total N**
	Indian	*Pakistani*	*Bangladeshi*	**Total n**	*Indian*	*Pakistani*	*Bangladeshi*	**Total n**	
Mothers	3	3	3	**9**	3	3	3	**9**	18
Grandmothers	3	3	3	**9**	3	3	3	**9**	18

6.4.1.5 Lesson 5- Developing research relationships

A key point that the health professionals mentioned when piloting the study was that some mothers did not always attend the services at the children centres, and thus a key part of recruitment was a need to foster positive relationships with potential participants and letting them know how valuable their input was to the project. Other barriers to attendance were carefully thought and discussed with health professionals working on the ground, particularly regarding language barriers and participants not knowing how the findings may be used. It was important that any foreseeable barriers were addressed and that the study was made as accessible as possible for participants.

Participants were informed about how the findings would help educate others about the infant feeding practices of IPAB mothers living in the UK, and that ultimately, they would help inform the development of an intervention to support optimal breastfeeding amongst these sub-groups. Mothers asked questions about why the focus was on IPAB mothers, at which point the researcher introduced her previous work and how these sub-groups were potentially vulnerable to reduced rates of exclusive breastfeeding compared to other sub-groups of the population. Mothers feared that the information would be used to inform the Home Office and that they be deported if they could not speak English. This was a point that was therefore addressed in recruitment. All mothers were made aware that the findings would only be used for the sole purpose identified in the participant information sheets, and no other organisations or individuals would have access to their data. A lot of time was spent building rapport and gaining participants trust. The researcher introduced mothers and grandmothers to the project and its aims of understanding and learning about the infant feeding practices and experiences of mothers and grandmothers of IPAB sub-groups. Mothers and Grandmothers were told about previous work in the area with Pakistani mothers, and the lack of research on infant feeding practices and experiences of IPAB mothers and the role grandmothers play in the South Asian culture in infant rearing. Mothers and grandmothers were unsure about what they could bring to the study, with many saying, '*what do*

we know?' or '*what could we tell you that you don't already know*?' The researcher told the individuals that there was a lot to be learned from mothers from the above sub-groups. It was important to empower the individuals, as a lot of the individuals lacked confidence in their abilities to engage with 'university research'. Empowerment was facilitated by letting the mothers and grandmothers know that they would be helping the researcher and other academics in the field learn about the infant feeding practices amongst IPAB communities. This addressed a lot of misconceptions individuals held that the research was there to assess the mothers and grandmother's knowledge in any way. Individuals stated that they felt empowered and wanted to share their experiences.

6.4.2 Methods for the qualitative study

6.4.2.1 Recruitment

The recruitment methods followed the same procedures set out in the pilot study for the mothers but adjustments were made to the recruitment of grandmothers (as highlighted in lessons learnt on page 164).

6.4.2.2 Methods for main qualitative study

The methods for the main qualitative study followed the procedures set out in the pilot study. All mothers and grandmothers were given participant information sheets, which were accompanied by a further explanation using verbal communication. Most individuals wanted the information translated in the language of their choice (Hindi, Urdu or Punjabi). Another key issue was the importance of mothers understanding that their participation was voluntary. All mothers were recruited from children centres, and it had to be emphasised that the level of care that they received from the children centres would not be affected if they did not take part in the project. Participants

were reminded that they could withdraw from the interview at any time if they so wished. If there was a question that they did not want to answer, they could move on to the next question.

The interview opened with infant feeding intentions, and the influences on the formation of intentions and then actual feeding behaviour. Awareness of health benefits was covered. Specific infant feeding practices in the South Asian culture were explored (examples were given such as prelactealfeed, hot and cold foods, initiation of breastfeeding), experiences of feeding their baby in the hospital and at home. Other topics included influences on their feeding choice, perceptions of how other mothers feed, experiences of any infant feeding support services they have accessed involved and the factors that supported or inhibited feeding intentions. Infant feeding behaviours of the sub-groups were of interest and factors that may inhibit mothers from exclusively breastfeeding their child. At the end of the interview, key demographic information was collectedto reflect the sample of the mothers taking part in the study (Appendix 3).

6.4.2.3 Grandmothers interviews/focus groups

The mothers' interviews were all conducted in their homes as this was the preferred location. Grandmothers who opted for one to one interviews requested for the interviews to be held in their homes and the grandmother's focus group was held in the centre where grandmothers attended their monthly session run by the local charity. The majority of the interviews were conducted in Hindi, Punjabi or Urdu and the focus group was conducted in Urdu.

All interviews were held with only the participant and researcher present. Where mothers were living in the extended family, the interview was conducted in a room where no other family members were present. The interview took about 60 minutes to complete.

Unlike the mothers, the grandmothers attended their sessions with existing friendship groups. Because of these existing friendships, there was a desire for five of the grandmothers to all take part in the research together. The group only met once a month, and not all grandmothers attending every month. Some grandmothers stated that they may well agree to take part but not attend the

following month due to other commitments. For this reason, it was decided to go with the wishes of some of the grandmothers and conduct a focus group. Others preferred one to one interviews over the focus group, which were conducted in their homes at a time convenient for them (see appendix 3 for topic guide used).

The focus group was conducted before the interviews. This allowed any potential themes that emerged from the focus group not already captured by the interview schedule to be included in the one to one interviews. The group context and the existing friendship network mentioned above created a dynamic different to that of the one to one interview. Not only were the participants interacting with the researcher and responding to the questions posed, but they were also responding to the opinions of others, using that as a possible frame of reference for their response. The fact that the grandmothers knew each other facilitated the focus group discussions. Grandmothers stated that they were comfortable in voicing their opinions in an environment that felt safe.

The grandmothers' interviews centred on their experiences of supporting their daughters and/or daughters-in-law regarding infant feeding. The grandmothers interviews opened with asking about their beliefs about breastfeeding, the benefits of various methods of feeding, and how they had adviseddaughtersand/or daughters in law about how to feed their babies (if at all). Opinions about skin-to-skin contact and initiation of breastfeeding were explored (discarding colostrum and administeringprelacteal feeds were included in this discussion). Immigration and infant feeding behaviour were discussed which led to a discussion about the cultural traditions that surrounded infant feeding amongst the IPAB mothers.

Although the voice of the interviewee is a central part of interviews, non-verbal communication can also serve to gain a deeper understanding of the meaning of the spoken words and provide a greater understanding of the contextual nature of the voice (Onwuegbuzie, Leech and Collins 2010). Non-verbal behaviour is particularly important in focus groups where members of the

focus group would sometimes nod in agreement but also in disagreement. These non-verbal cues occurred in the focus group, and in such instances, the researcher would ask the individuals to expand on their reactions to certain things being said and vocalise their responses.

All interviews were audio recorded with the consent of the mothers and grandmothers. Non-verbal behaviour (such as nods of agreement to a topic or point of view were noted by the researcher, again with the consent of the individuals involved).

6.4.2.4 Ethical issues

An important aspect of the thesis was the preservation of anonymity and confidentiality of the mothers' and grandmothers' data. Anonymity refers to the '*identity of those taking part not being known outside of the research team*' (Lewis 2003:80). Mothers were concerned that they did not want family members or close family friends finding out that they had taken part. No one apart from the researcher knew that they were taking part in the study. A time and date were picked by the mothers at a location that was convenient for them, which was often their home. Not all mothers were happy to give their real names when signing the consent form. Given the mothers' concerns about individuals finding out that they had taken part in the study. Thus, initials or a pseudonym were used to sign consent forms. Confidentiality refers to *'avoiding the attribution of comments in the writing up of the data to identified participants'* (Lewis 2003:80), this can be direct (i.e. linking comments to a name) or indirect (referencing characteristics that may identify that individual). The thesis does not identify the local organisation, are or the children centres involved in the study to preserve the confidentiality of the mothers and grandmothers. The transcripts were thoroughly read, and any identifying or potentially identifying information was removed. Audio copies of the transcripts were labelled with case numbers, and it was ensured that they were only accessible to the main researcher on an encrypted hard drive. Word transcripts

were stored in a lockable filing cabinet which could only be accessed by the researcher. Mothers and grandmothers were asked if their data could be archived for two years after the study had completed for research purposes. All participants consented to this, but there were some concerns about the audio transcripts. The researcher advised that these would be deleted and only hard copies would be kept (i.e. the transcribed word documents), which all mothers and grandmothers thought was appropriate. No conversations took place with health professionals working in the centres about the mothers and/or grandmothers taking part in the study to ensure anonymity of the participants.

Steps were taken to ensure that the mothers were fully aware how their anonymity and confidentiality would be preserved. Mothers were briefed about The Data Protection Act (1998) and that it would be abided by at all times and their rights preserved. Mothers were told how the data would be handled and processed particularly in terms of all consent forms being kept separately from the transcribed interviews. The audio recordings of the interviews were saved into a password protected folder contained on a password protected laptop. No one apart from the researcher had access to this laptop. The interview transcripts were all anonymised and kept in a lockable cabinet, which only the researcher had access to.

Infant feeding experiences are personal and emotive experiences. When mothers talk about infant feeding experiences, there was always an expectation that they would naturally reflect on the birth experience which potentially could have been quite traumatic for some mothers. For this reason, mothers were given a summary of the topic areas that would be covered in the interview. If there were some areas that mothers did not want to discuss they were encouraged to let the researcher know. Such areas were avoided. An open dialogue was fostered with participants, and verbal and non-verbal cues of discomfort around certain topic areas were attended to. All mothers were also provided with details of suitable local infant feeding support services. There were some tensions

in mothers openly talking about their experiences when living in the extended family, particularly if feeding choices were governed by those around them. The researcher was sensitive to this and used non-verbal cues when needed to move on to the next topic due to other family members over hearing. It was necessary to take appropriate measures to ensure that participants' preferences around subject matters were attended to and that the interview context was appropriate to protect participants from any kind of disapproval from other family members.

The potential risk of harm to the researcher was also considered. A lot of the interviews took place in the homes of the participants. The main researcher would give the time of the interview and area in the city where the interview would be taking place to a colleague, the researcher would inform the colleague of how long the interview would be and would then ring the colleague after the interview was complete to inform them of their safety.

6.4.2.5 Data saturation

The success of research is based on effective sampling. Unlike, quantitative research, qualitative research sampling is not conceived on the number of counts, but rather explorations of the meanings and opinions of various issues and experiences (O'Reilly and Parker 2012). For this reason, qualitative research focuses less on the numbers of participants in the sample size to achieve 'power' of the sample but on the adequacy of the sample (Bowen 2008). Saturation of data is said to be achieved when the collection of new data does not shed any further light on the issue under investigation (Mason 2010). However, there have been developments in the way in which saturation is viewed and used in research, which has led to confusion about what it means, how it should be used and when it is applicable (O'Reilly and Parker 2012). There is no 'one size fits all' method to attain data saturation because research varies in terms of the design that is adopted (Fusch and Ness 2015).There is agreement, however, that data saturation is attained when no new data, no new themes, no new coding and the ability to replicate the study have been

achieved (Guest, Bunce and Johnson 2006). Some have suggested that the maximum number of interviews should be where additional interviews fail to produce substantial new insight (Marshall et al. 2015). However, studies have been criticised for not being able to provide descriptions of exactly *how* saturation is determined or demonstrated (Guest, Bunce and Johnson 2006). Guest and colleagues (2006) provide a useful way of demonstrating data saturation and will be used to inform data saturation in the thesis. The authors suggest that the progression of theme identification when analysing the transcripts is identified (Guest, Bunce and Johnson 2006). Guest and colleagues demonstrated this by analysing six transcripts at a time identifying codes and then adding six more transcripts to the pool of transcripts and analysing the additional six; applying the existing codes identified from the original six transcripts and noting down any new emerging codes from the second set of six new transcripts (Guest, Bunce and Johnson 2006). This process is repeated until now new codes emerge from any additional transcripts. This premise was followed for the data analysis of the mothers' and grandmothers' transcripts.

6.5 Data analysis

6.5.1 Focus groups and interview data

Given the different processes and contexts involved in interviews and focus groups, combining the data of two very different entities needs attention. Although there is a wealth of information in the research literature about combining qualitative and quantitative methods, there is little guidance on combining data within qualitative methods such as interviews and focus groups. This lack of guidance is also observed by other researchers in the field (Lambert and Loiselle 2008). For pragmatic reasons, focus groups were suited to some grandmothers while others preferred one-to-one interviews. Offering an option to participants is vital because it allows catering to their needs rather than imposing a predetermined methodological structure to data collection that may not always be respectful of participants' lives. With the IPAB sub-groups, interviews afford the privacy that is often wanted. Previous experience working with these sub-groups highlighted that

the interviews were a preferred method of discussing infant feeding practices/experiences. This was the case for all the mothers taking part in the study. However, some grandmothers opted to take part in a focus group for convenience and to be part of a pre-existing friendship group. Focus groups afford a richer form of data that is the result of interactions with others, a very different context to one to one interviews. Although the focus groups were offered to grandmothers on a pragmatic basis, it soon became apparent that the focus group proved a valuable tool for generating a range of issues experienced by grandmothers that could then be incorporated into the interview schedules for the one-to-one interviews. However, others have reported that adopting interviews and focus groups results indifferent data (regarding the content) being collected (Lambert and Loiselle 2007). This variation in data was not observed in the present study. The datasets collected from both types of methods were complimentary and yielded similar results. Convergence of the central characteristics of the phenomenon across focus groups and individual interviews enhanced the trustworthiness of the findings (Lambert and Loiselle 2007).

Although focus groups and interviews are often used side by side, the structure of group data differs significantly from the data derived from individual interviews (Ritchie, Spencer and O'Connor 2003) and has implications for data analysis. The nature of the data in groups has been derived from a dynamic in the groups that will affect the way in which the subject is approached and discussed (Finch and Lewis 2003). It is suggested that there are two main ways in which group data can be analysed (Ritchie, Spencer and O'Connor 2003);

> *Whole group analysis*- This type of analysis treats the data from the group as a whole, and there are no distinctions between individual data. The group data is treated the same as an individual's data would be, in for example an interview setting.
>
> *Participant based group analysis*- the contributions of individuals are analysed separately within the context of the discussion.

Unlike interview set ups, the focus group offers the opportunity for data to be analysed at the individual level, the group level and the group interaction level, although there is disagreement about how this data should be handled (Onwuegbuzie et al. 2009). Most researchers analyse focus group data using the group as the unit of analysis. This is problematic in most cases as it assumes that all group members have a uniform voice in a sense. In particular, it does not provide the degree of consensus or dissent amongst members of the group (Lewis and Ritchie 2003). It was decided that the focus group data would be analysed as a whole group analysis, which is the most commonly practised type of analysis (Ritchie, Spencer and O'Connor 2003). This allowed preserving the dynamic of the focus group. However, to overcome the issue of not being able to delineate between those members showing consensus or dissent to emergent themes, a matrix was developed that showed the number of individuals that showed consensus to a certain theme or not.

6.5.2 Theoretical framework for analysis

There are a wide variety of methods to analyse data in the narrative form (Bradley, Curry and Devers 2007). There is no correct way of analysing the data. However, there is a consensus amongst the literature that the analysis is an ongoing, iterative process that begins at the stages of data collection and continues throughout the study (Bradley, Curry and Devers 2007).

Methods for undertaking qualitative data analysis are categorised into three broad categories. Sociolinguistic methods such as discourse analysis that explore the use and meaning of language, methods that aim to generate theory grounded in the data such as grounded theory and finally methods that thematically describe and interpret participants' views (Smith and Firth 2011), such as framework analysis. The most commonly used methods to analyse qualitative data in health research are phenomenology, particularly interpretative phenomenological Analysis (IPA), grounded theory, and discourse analysis (Starks and Trinidad 2007).

Phenomenology involves the use of description and analysis of lived experiences to understand how meaning is created (Groenwald 2004). Through IPA, reality is understood as the 'embodied experience' (Starks and Trinidad 2007), and what certain experiences mean to people who experience them (Shaw 2010). Such an approach provides a complete and in-depth understanding of individual experience (Pringle et al. 2011), and tends to employ small sample sizes. However, this could also be seen as a potential weakness of the approach. Generalisations from findings are not feasible, and it is difficult to understand which variables are important in the 'experience' being investigated (Smith and Firth 2011).

Discourse analyses concerns itself with studying and analysing the uses of language, and the way in which individuals accomplish personal, social and political projects through language (Schiffrin, Tannen and Hamilton 2001). Many forms of the analysis exist in the literature (Hodges 2008), but all are underpinned by the same premise of examining the way in which language is constructed and framed.

Grounded theory describes the approach mainly used to generate theories regarding a particular social phenomenon (Lingard, Albert and Levinson 2008). Understanding is 'grounded' in the data through a systematic analysis of the data (Lingard, Albert and Levinson 2008). Such an approach is particularly suited when the aims are to understand a phenomena or process rather than to test a priori assumptions or theory.

The Framework approach contrasts with some of the more inductive approaches described above, where the processes of analysis are a combination of inductive and deductive approaches and the process is iterative and develops in response to the data obtained (Smith and Firth, 2011). The Framework method sits within the family of thematic or qualitative content analysis (Gale et al. 2013) and aims to draw descriptive and/or explanatory conclusions clustered around themes derived from the qualitative data (Gale et al. 2013). Framework analysis can be compared to thematic analysis in some instances where in the early stages of analyses recurring and significant

themes are identified. However, where framework analysis is distinguished from other approaches is that the thematic analysis is systematic and transparent. The analysis 'allows *the researcher to move back and forth across the data until a coherent account emerges*' (Ritchie, Spencer and O'Connor 2003:233), and allows the data from individuals to stay intact rather than being fragmented from the original transcript which can lead to misinterpretation (Smith and Firth 2011). The Framework approach was chosen as the most suitable method to address the research aims because the approach was particularly suited to the analysis of cross sectional descriptive data such as that from the mothers and grandmothers that would then allow different aspects of the phenomena of infant feeding to be captured (Ritchie and Lewis 2003). Further, from the outset, there was always a desire to use the findings to report recommendations for how best to support South Asian mothers' optimum infant feeding practices; the framework approach provided the platform to do so.

The work of Ritchie and Spencer (2003) has been used as guidance for the appropriate steps to conduct a framework analysis on the qualitative data. The defining feature of the approach is the matrix that is generated, where rows indicate cases (i.e. one row represents one participant) and the columns indicate the codes or themes. The matrix provides a structure into which the data can be enteredto analyse it by the case or by code (Ritchie and Spencer 2003). The advantage and appeal of the framework approach for this analysis was that such an approach afforded in-depth analyses of key themes across the data set but allowed for the data within the cases to be intact to other aspects of their account of experiences. Thus, the analysis did not fragment the data in any way (Smith and Firth 2011).

6.5.3 Procedure for framework analysis

The procedure for the framework analysis was informed by Ritchie and Spencer (2003) and is detailed below;

6.5.3.1 Stage 1: Transcription

As mentioned previously, the majority of the interviews and the focus group were conducted in either Hindi or Urdu. Translation was therefore a key aspect when transcribing the audio data. Transcription of such data required that the audio interviews were firstly transcribed in the language in which they were captured and then the transcripts were translated into English. This process ensured that the original data captured by the participants was preserved as much as possible and not lost in translation. Something that may have occurred if the interviews were directly translated from the audio recording. An independent expert in Hindi and Urdu checked the translated transcripts to ensure that they truly reflected the audio recordings.

All interviews were audio recorded, and interviews were transcribed verbatim. Transcription allowed initial immersion with the data. The audio recordings were listenedto twice to ensure transcription was accurate.

6.5.3.2 Stage 2: Familiarisation with the interview.

This stage is said to be an important stage in the analysis of the data. It is the process of becoming familiar with the audio recording, transcription and any additional field notes that may provide contextual information to the interview as a whole.

6.5.3.3 Stage 3: Coding

After the stage of familiarisation, the transcripts were carefully read line by line, and a label or paraphrase (a code) that described the interpretation of the data regarding what is important was applied. A colleague supported the research at this stage, by independently coding the first three transcripts.

6.5.3.4 Stage 4: Developing a working analytical framework

After the first few interviews had been independently coded, the researchers convened and discussed the codes that were applied. This discussion allowed for the agreement on the codes for the subsequent transcripts. Codes were then grouped into categories which were then clearly defined. This categorisation alloweddeveloping a working model of the analytical framework.

6.5.3.5 Stage 5: Applying the analytical framework

The working model of the analytical framework was entered as a matrix into Excel. Transcripts were indexed using the existing categories and codes within the framework. The development of the analytical framework was an iterative process and required lengthy discussion with another researcher about the presence of categories and whether possible categories could be merged into one category.

6.5.3.6 Stage 6: Charting the data into the framework matrix

The qualitative data were entered into the matrix. This involved summarising the data by category for each transcript. It was important at this stage to reduce the data but also ensure that the original meaning of the interviewees' words were retained (Ritchie and Spencer 2003). The charting process also required the inclusions of illustrative quotations to support the categories. This stage required discussion between two researchers about whether the quotations entered into the matrix truly reflected the categories.

6.5.3.7 Stage 7: Interpreting the data

Characteristics of the data and the differences between the data were identified. The interview data was rich in nature and thus went beyond descriptions of cases but allowed for explanations of phenomena experienced by the mothers and grandmothers in the sample. The matrix structure of the analytical framework facilitates the recognition of patterns and themes within the data, and any themes/accounts that may be deviant or contradictory.

6.5.4 Chapter summary

This chapter has provided information on the methods adopted to conduct interviews with mothers and grandmothers. Information on the pilot study and the lessons learnt have been highlighted. Discussion on how the data were analysed have also been presented.

The next chapter presents the qualitative data from the mothers' and grandmothers' interviews/focus groups.

7 Infant feeding practices and experiences of Indian, Pakistani and Bangladeshi mothers and grandmothers living in the UK

7.1 Introduction

The scoping review revealed several factors influencing breastfeeding initiation, breastfeeding exclusivity, discarding colostrum and the administration of prelacteal feeds. Whether such factors influence the above behaviours of IPAB mothers in the UK today remains to be explored. Literature from South Asia reveals that discarding colostrum and prelacteal feeds are common in the culture of IPAB mothers. This needs to be explored further, particularly as the UK data on discarding colostrum is now almost a decade old. Commentaries in the UK exist about prelacteal feeds being part of the South Asian culture but little research exists about why and how these practices exist. The aim of this chapter is to understand the infant feeding beliefs, practices and experiences of IPAB mothers and grandmothers living in the West Midlands.

The specific research questions to be understood in this chapter were;

What are the infant feeding practices, beliefs and experiences as described by IPAB mothers living in the West Midlands?

What are the beliefs and practices as described by grandmothers from the IPAB sub-groups in supporting infant feeding?

The methods to address the above research questions have been presented in chapter 6. The current chapter presents the findings of the framework analysis of the mothers' and grandmothers' data. A decision was made to present the mothers' and grandmothers' data together as this allowed highlighting the similarities and differences between the two accounts.

7.2 Demographic information

Mothers in the study came from an area in the local city that was predominantly made up of Indian and Pakistani families. Most mothers lived within the in laws family. In total, there were 33 eligible mothers of which three did not attend the sessions at the children centre for the duration of the study. Thus, 30 mothers were approached, of which 26 were recruited. Most mothers were Non-UK born Pakistani mothers. Table 25 provides details of the intended numbers of participants for each sub-group and the actual numbers recruited into the qualitative strand of the thesis.

Table 25-Intended and actual numbers of participants recruited to the study.

	UK born				**Non UK born**				**Total N**
	Indian	*Pakistani*	*Bangladeshi*	**Total n**	*Indian*	*Pakistani*	*Bangladeshi*	**Total n**	
Mothers (intended)	3	3	3	9	3	3	3	9	18
Mothers (Actual)	2	4	1	7	7	7	5	19	26
Grandmothers (intended)	3	3	3	9	3	3	3	6	18
Grandmothers (Actual)	0	0	0	0	4	5	0	9	9

The mothers ranged from 24 to 39 years old, with the mean age of the mothers being 30.3 years old. Two of the mothers in the sample (one from Pakistan and one from Bangladesh) did not have any form of school education. The average age of leaving education for most mothers in the sample was 19.5 years old. Most the mothers were born outside of the UK. Mothers' length of stay in the UK varied from 1 year to ten years, the mean length of stay for the mothers was around four years. Most mothers in the sample had a normal, vaginal delivery. The average number of children for mothers in the sample was 2. The age of the infants ranged from 2 weeks old to 2 years old. The average age of the infants in the sample was 30 weeks. All Pakistani and Bangladeshi mothers classified themselves as Muslim, with the Indian mothers being from the Sikh religion. Of the sample, thirteen mothers intended to breastfeed their babies, ten mothers had no intentions of how they were going to feed their babies, three mothers intended to bottle feed. At the time of the interview two mothers were exclusively breastfeeding whilst all others were formula feeding or mix feeding (but predominantly formula feeding).Table 26 provides further information.

Table 26-Participant characteristics for mothers taking part in the study.

		Total South Asian mothers (N=26)	Indian mothers (n=9)	Pakistani mothers (n=11)	Bangladeshi mothers (n=6)
Age (mean years)		30.3	30.6	31.3	29
Age at which mother left full time education		19.5	20	19.5	19
UK born		7	2	4	1
Non-UK born		19	7	7	5
	Length of stay if non-UK born	6	8	6	4
Type of Birth					
	Vaginal	25	9	11	5
	Caesarean section	1	0	0	1
Parity		2	2	1	1
Feeding intentions					
	No intentions	10	1	7	2
	Breastfeeding	13	8	2	3
	Bottle feeding	3	0	2	1
	Mix feeding	0	0	0	0
Age of infant (mean age in weeks)		30	40	33	17
Infant feeding behaviours					
	Exclusive breastfeeding	2	2	0	0
	Bottle feeding	5	1	2	2
	Mix feeding	19	6	9	4

Some demographic information was collected for the grandmothers taking part in the study to provide a brief picture of the sample of grandmothers taking part in the study. Grandmothers were not related to the mothers but did come from the same locality as the mothers. Nine grandmothers participated, with most grandmothers from a Non-UK Pakistani background. The age range of the grandmothers was 71 years to 80, with a mean age of 74 years. The grandmothers were all Non-UK born and had been in the country an average of 57 years. All grandmothers in the sample had had no formal schooling or education. Table 27 provides details on the grandmothers in the sample.

Table 27-Participant characteristics for Grandmothers taking part in the study.

		Total South Asian Grandmothers (N=9)	**Indian Grandmothers (n=4)**	**Pakistani Grandmothers (n=5)**	**Bangladeshi Grandmothers (n=0)**
Age (mean years)		74	79	69	0
Age at which mother left full time education		N/A	N/A	N/A	N/A
UK born		0	0	0	0
Non-UK born		9	4	5	0
	Length of stay if non-UK born	57	59	55	0

The use of bilingual/multilingual languages is a complex phenomenon because there may not always be a discreet language that individuals use to communicate in a given instance. There may be instances of overlap between multiple languages. For example, the interviews that were conducted in English did have exchanges of either Hindi or Urdu and were not solely in English, further the interviews conducted in Hindi did have overlaps of Urdu and some instances of Punjabi. For this reason when highlighting what language the interviews were conducted in the author refers to the language in which the *majority* of the interview was conducted. Of the 26 interviews with mothers, seven were conducted in Hindi, fourteen in Urdu and three in English. All the grandmothers' interviews and the focus group were conducted in Urdu. Where quotations have been used to support the themes from the framework analysis it has been indicated what language they have been translated from (if at all).

During the interviews, mothers spoke in detail about the time immediately leading up to the birth of their baby and the delivery. For most mothers, across all three sub-groups this was a negative experience with exhaustion and pain cited as the major elements of the experience. For most mothers this was perceived to have had a negative impact on their ability to breastfeed their babies.

Mothers were asked about whether they had thought about expressing their breastmilk. Only two of the mothers (one Bangladeshi mother and one Indian mother) had tried to express but after finding it difficult stopped and opted to bottle-feed their babies. Most mothers said that they felt it would be a hassle to express the milk and then feed through the bottle. They said that if they were going to express and feed through the bottle then they may as well give the bottle (formula). 'Bottle' was a term repeatedly used by the mothers to refer to formula feeding, and thus it has been preserved within the text.

7.3 Framework analysis of mothers' and grandmothers' data

A number themes and sub-themes emerged from the framework analysis of the mothers' and grandmothers' data. Given the findings of the IFS secondary analysis presented in chapters 3 and 4 it was expected that distinct themes would emerge across the sub-groups during the framework analysis of the qualitative data, but this was not the case. For this reason the themes are discussed for the sample as a whole and differences and similarities are drawn out as and when they emerged (particularly between UK and Non-UK born sub-groups) through the framework analysis. Table 28 provides a summary of the themes/sub-themes across the three sub-groups and then a detailed discussion follows of the themes.

Table 28-A summary table of the themes and sub themes that emerged from the framework analysis of the mothers and grandmothers data.

Theme	Sub-Theme	Present in Indian group	Present in Pakistani group	Present in Bangladeshi group
Skin to skin contact	N/A	✓	✓	✓
Making the Choice to breastfeed		✓	✓	✓
Getting the baby used to the bottle		✓	✓	✓
Cultural practices and feeding choices/behaviours	Mothers-in-law as informants of cultural knowledge	✓	✓	✓
	Ghutti- A way of passing on good traits to the baby	✓	✓	✓
	'Nazar Ka Dood'- Discarding of colostrum	✓	✓	✓
Perceived Capability		✓	✓	
Infant feeding in the UK versus 'back home'		✓	✓	✓
Immigration and the UK infant feeding context		✓	✓	✓
Breastfeeding Support		✓	✓	x

7.3.1 Skin to skin contact

Mothers were asked about their skin-to-skin experiences with their baby. Most of the mothers from the Bangladeshi and Pakistani sub-group were unaware of what the term '*skin to skin'* meant. However, once the term was explained most mothers said that they had engaged in skin-to-skin contact with their babies. Some mothers were aware of the general benefits of skin to skin, making comments like '*it's good for the baby'*. However, most of the mothers seemed unaware of the benefits that skin to skin contact between mother and baby entailed but engaged in it anyway because it was what the midwife did at the time the baby was born.

Grandmothers, like mothers, were unaware of the term 'skin to skin' contact however they were all aware of the importance of placing the baby on the mother's chest. The perceived benefits of skin-to-skin focused on the baby being able to recognise the mother and forming a bond with the mother. Grandmothers were unaware of any benefits of skin to skin for infant feeding.

7.3.2 Making the choice to breastfeed

Mothers from the Bangladeshi and Indian sub-groups mentioned that breastfeeding should be initiated when the mother felt well and able to do so. There was a divide amongst the Pakistani mothers about when breastfeeding should be initiated. Some Pakistani mothers believed breastfeeding should be started straightaway, whilst others commented that the baby did not need to be fed straight away and that initiating breastfeeding a day or two after the birth was sufficient.

A small minority of grandmothers stated that breastfeeding should be initiated straight away. However, all grandmothers spoke about breastfeeding initiation being dependent on how the mother felt after birth. It was thought if the mother felt tired, weak or not well in herself then breastfeeding should be delayed until the mother feels well enough to do so. Mothers were advised by grandmothers to give the bottle until the mother recovered. For most mothers, particularly in the Pakistani and Bangladeshi sub-groups, milk was not the first feed that babies were introduced to. Before initiating breastfeeding or giving formula, most mothers gave their child 'ghutti', a prelacteal feed consisting of either honey or chewed up dates. Like the mothers, grandmothers who spoke about breastfeeding needing to be initiated straight away did not think giving prelacteal feeds of any sort of 'food' would hinder breastfeeding initiation. Prelacteal feeds were advised to be given before breastfeeding started in all cases. This served a cultural purpose, which will be discussed later in the chapter.

Mothers in the sample were motivated to breastfeed (although most experienced factors that hindered them to carry these motivations through to behaviour). This theme captures the factors that promoted breastfeeding behaviours amongst mothers.

Mothers spoke at length about their feeding intentions, which most stated were to breastfeed. Some mothers from the Indian and Pakistani sub-groups stated that they had wanted to mix feed

their babies; that is to combine breast and bottle feeding. Only one of the mothers (of Indian origin) in the sample had intended to bottle feed her baby. Intentions to breastfeed were based on experiences of breastfeeding previous children. Mothers intended to mix feed because they felt that the baby would not get used to the breast and would want to drink from the bottle.

The benefits of breastfeeding were discussed by each mother in the sample, these included breastfeeding being a convenient method of feeding and the general health benefits of breastfeeding, such as strengthening the immune system of the child and preventing disease in the mother.

Interestingly, some mothers from the Pakistani and Bangladeshi ethnic group spoke about the psychological benefits of stronger attachments between mother and baby and the baby developing a good character and a higher IQ as a result of breastfeeding. The grandmothers also spoke about the health benefits of breastfeeding and the psychological benefits such as strengthening the bond between mother and baby. They spoke about their own positive experiences of breastfeeding their babies and that breastfeeding was a form of feeding that had been passed down the generations from their own grandmothers and elders.

"I was born in India, and it has been coming from there for generations and for the baby it is good, and for us it is good too. It strengthens the relation between a mother and her baby daughter, it becomes stronger" (p28, Lines 9-11, Non-UK Indian Grandmother, translated from Hindi (focus group))

"To live I this day and age it's so hard, when children misbehave people will say he never found his mother's milk, he wasn't given his mother's milk. The biggest thing for any child is getting their mother's milk. When children don't have their mother's milk you can tell, the children are wafadaar (unfaithful). Mums these days don't pay as much attention to the importance of feeding the ones I haven't seen anyone, don't give breast feeding importance (Lines 203-207) ...and that's why they don't have the relationships with their children, strong relationships are borne out of giving your own milk." (p27, Lines 210-211, Non-UK Pakistani Grandmother, translated from Urdu)

Grandmothers spoke about the 'taaqat' or 'strength' in mother's milk. This was a way to relate the nutritional content of the breastmilk in comparison to other formula milks available.

The term *'mother's choice'* was mentioned frequently throughout the interviews by Pakistani and Indian mothers as something that facilitated infant feeding choices. Mothers spoke about the infant feeding decision being their 'choice', which was informed by their own knowledge and confidence about the benefits of breastfeeding. For most mothers, this choice was a pro-breastfeeding choice regardless of the lack of support they felt they received;

> *"No because it was my decision. After he was born, my mum did say no just put him on the bottle for his sake, and I was like no mum and even now, because I'm cluster feeding in the evenings and I'm constantly feeding, and my mum is like just give him the bottle. And I'm like no mum you don't understand it's easier for me to do it like this, I don't mind sitting down its me and him time. So, no, only apart from my mum who was only thinking of her own daughter."* (p14, Lines 25-29, UK born Pakistani)

> *"It was my decision to breastfeed. But my mum wasn't happy at all she was like it's going to be so much hard work breastfeeding and you are going to use up a lot of energy breastfeeding so no I think you should just bottle feed. And I was like no I am happy breastfeeding my child and that's what I am going to do. And so, with my younger three I breastfed them all." (*p25, Lines 16-20, UK born Pakistani, translated from Urdu)

The mother's choice was evident in the examples above where mothers were living on their own and not in the extended family. There was an indication that when living in the extended family (with the mother-in-law), it was the mother-in-law's opinion that was a strong influence on infant feeding choice;

"I think so, like if you are living in in laws they will be more in charge, it's what happens, they choose, but because I don't it's my choice." (p26, Lines 103-106, UK born Bangladeshi)

The mother's choice was not only evident amongst those mothers who were pro-breastfeeding. Exercising choice was evident in those who chose to bottle feed, particularly amongst some of the Bangladeshi and Indian mothers. Often, they would reject pro-breastfeeding advice and opt to bottle feed instead;

"But then again, its self-preference, if I wanted to I could. But I just didn't want to. I think I was even encouraged by my husband to breastfeed but just didn't want it. It was my choice (Lines 77-79). At the end of the day it was my choice, I was running around with the baby at the end of the day so I chose what I thought was best for me. So, no one really got in my way they just let me get on with whatever." (p26 Lines 81-82, UK born Bangladeshi, translated from Urdu)

Indian and Pakistani mothers who were motivated to breastfeed actively sought information on breastfeeding from various sources. These included antenatal classes and the internet and YouTube videos. These mothers continuously sought information when faced with breastfeeding. These mothers were different to mothers who opted to breastfeed but when faced with difficulty opted to bottle feed instead.

> *"Yes, I attended the antenatal classes, and they taught us how you must feed the baby, and what you need to do. And it was very beneficial to me, otherwise I was really scared because I really didn't know what to do, I really didn't know what the baby would be, would she be on bottle or the breast? So, the classes were really helpful to me in telling me that you should breastfeed (p16, Lines 4-7) because I got the information from the internet sometimes. I was really aware; it was my first child so I really wanted to get the knowledge. I downloaded some pregnancy women's stuff, like articles and I read them and so that's how I knew about it."* (p16, Lines 22-24, Non-UK born Indian, translated from Hindi)

> *"Yes, I think so, when I was in Radford I went to three or four classes (Line 194) .... they were, a midwife came to explain what the labour would be like, and the breastfeeding people came and showed how to feed and how to put the baby to sleep (Line 196-197) yes definitely, I didn't know anything because it was the first baby so I didn't know anything so I learnt a lot. I used YouTube a lot to learn things also."* (p8, Line 199-200, Non-UK born Indian, translated from Hindi)

Other mothers actively sought information using videos and reading information online. These mothers were living away from the extended family and stated that although family would be their first choice for information; this was not always possible and thus resorted to other forms to obtain information;

> *I just learnt myself slowly through watching videos and reading online."* (p13, Line 129-130, Non-UK born Indian, translated from Hindi)

> *"I read up on the internet. I read a lot. With my little one I had really bad pain, numb in leg and lower back. And I just couldn't move. So, I kept reading about lots of things."* (p19, Lines 183-185, Non-UK born Pakistani, translated from Urdu)

Of interest was how grandmothers spoke about breastfeeding. Although grandmothers felt breast was best, grandmothers stated that if mothers did not want to or could not breastfeed then '*there was always the bottle*'. There was no emotional tie with not breastfeeding as there were other methods available to feed the baby.

7.3.3 Getting baby used to the bottle

Mothers spoke about the motivating factors for them to bottle feed. Formula milk satisfying babies was a reason for them choosing bottle over breast. Mothers spoke about the perceived benefits of bottle-feeding which were more than just the convenience of bottle-feeding, and related to the health benefits of bottle feeding; particularly as it could provide babies with all the '*vitamins they needed'*;

> *"But here you can get the boxed milk so they just start that. The thing with the boxed milk it's good because it has all the vitamins that they baby needs so it's not that different."* (p5, Lines 90-93, Non-UK born Indian, translated from Hindi)

Grandmothers recognised that the bottle milk was thicker than breast milk and for this reason they felt it necessary to thin the milk down so it was easily digestible for the baby;

> *"Dry powder can't be good. And it's too thick then you have to thin it down (Line 106-107) ...need to add more water than what it says on the box I think because if it's too heavy for the baby."* (p27, Lines 109-110, Non-UK Pakistani grandmother, translated from Urdu)

> *"With the powder milk, it, at the end of the day it's still powder. Like some of the babies might not be able to digest it and its quite heavy on the tummy. Dry powder can't be good.*

And it's too thick then you have to thin it down." (p5, Lines 105-107, Non-UK Indian, translated from Hindi)

When mothers spoke about their bottle-feeding decisions, they referred to the needs or 'choices' of their baby rather than a personal choice. Mothers spoke about their experiences of initiating breastfeeding and the difficulties they faced with latching the baby on or the baby simply not taking the breast. Those mothers who initiated breastfeeding but found it difficult to feed their babies for several reasons chose to bottle feed. These mothers did not report seeking help for the difficulties faced but instead bottle fed their babies to ensure that their baby received milk in the early days;

"So, I thought its best to give her the formula. Because you feel bad that so many hours have past and she is not feeding so then you have no choice but to give the formula. I thought oh gosh she's only just been born I can't not give her anything! So, that's when I gave the bottle." (p18, Line 83-85, Non-UK born Pakistani, translated from Urdu)

"He's just not taking it for a long time, he needs to be fed otherwise he will get dehydrated so, and also, he prefers bottle when I give him bottle he doesn't complain of anything. But when he is hungry, like you know babies when they are not full they start to cry so he cries, then I know he demands more. But he doesn't like the breast so what I do is give him the formula so he takes the bottle nicely he doesn't cry or get angry on bottle. So, this is the main reason." (p17, Lines 73-77, Non-UK born Bangladeshi)

In the early days post-birth, mothers from all three sub-groups cited the baby not taking the breast as a factor that pushed them towards choosing bottle feeding for their baby. Mothers said that they felt helpless as they could not breastfeed their babies if the babies '*did not want to take the*

breast'. In such instances, the choice to bottle feed was the baby's choice. Signs that the baby was not taking the breast were; the baby not latching on, the baby moving its head away from the breast, the baby pulling on the breast but not actually sucking and the baby merely 'preferring' the bottle. Again, in such instances mothers reported not seeking help or support, instead opting to bottle feed.

> *"For me, I was more like, because I had done lots of research on it, I felt like I was doing all the right things but I think it was more my baby not wanting to take to it. So, I just went with whatever he wanted."* (p7 Lines 151-152, Non-UK born Indian, translated from Hindi)

> *"Sometimes baby is really fussy. I am facing the problem with him last week he chose to drink the formula rather than this one, rather than mine (Lines 42-43) …. Yes, and now most of the time he is formula because he likes it (Line 45) …. What can I do he likes the bottle more so I have to give it?"* (p17, Line 62, Non-UK born Bangladeshi, translated from Urdu)

When mothers bottle fed in response to the baby not taking/liking the breast, mothers spoke about the decision as something they *'couldn't do anything about*' and that they just '*had to give it'* (bottle). There was a contrast amongst those mothers who spoke about '*the mother's choice'* and mothers who felt they '*had no choice'* when it came to bottle feeding their baby;

> *"Some babies just prefer the bottle and mothers have to give it."* (p5, Line 103, Non-UK born Indian, translated from Hindi)

*"I think it's down to the baby. Like mine just didn't want it, he just didn't take it so I had no choice but to bottle feed him. (*Lines 414-415) ...*Because I think breastfeeding is the done thing and when you say no and sometimes, I say no, I'm thinking it's not my fault, honestly, it's not me, it's not because of me he just didn't want to take to it what could I do, he didn't want to feed himself from it. It was hard work for him at that age."* (p7, Lines 500-503, Non-UK born Indian, translated from Hindi).

"These days babies are fussy. If they want it they will have it, if they don't want the breast the mother is helpless, what can she do?? There is nothing but to give the bottle (Lines 84-85) .... I don't think there is a mum who doesn't want to breastfeed her baby however in this day and age the babies are just so alert they know what they want. It doesn't depend on the mum it depends on the baby these days!" (p15, Lines 88-89, Non-UK born Pakistani, translated from Urdu).

Mothers from all three ethnic groups spoke about deciding to stop breastfeeding once babies were 2-3 months old. Most the mothers spoke about '*getting the baby used to the bottle'*. Mothers were concerned that the baby would be dependent on the breast and not be able to then take the bottle. There was a strong need to ensure babies took to the bottle because it was beneficial for the mother and baby. This message was reinforced by elders in the family, particularly by the mothers-in-law and the wider community. The baby being dependent on the breast was not seen as a good thing by the mothers;

"Yes, my first had it for seven weeks and then I stopped it, whereas this one she didn't take it at all. The first one was keen to breastfeed but I stopped it myself, because I was worried he wouldn't take to the bottle." (p5, Lines 114-116, Non-UK born Indian, translated from Hindi)

"Because also some children don't leave the breast so I thought if I start him on both it will be easier as he will be used to the bottle and it won't be so difficult for me to wean him off the breast. So, I always thought it would be breast and bottle from the start. I always thought it would be easier to introduce the formula from the start so it's easier to stop breastfeeding." (p12, Lines 15-20, Non-UK born Indian, translated from Hindi)

Grandmothers, like mothers, spent time talking about the importance of getting baby used to the bottle. They felt that babies, if breastfed, should only be breastfed for a brief time or should be mix fed from the start in order to not get them dependent on the breast. When grandmothers were asked further why they thought it was important to get the baby used to the bottle, they said that it was because mothers were not tied down to feeding the baby all the time and could carry on with other tasks if needed;

"Did breastfeed for about three months I think it was for both. And after that we would cut down and introduce the powder so they get used to the bottle. (Lines 22-23) yes because it gets too much to take the baby off the breast so we must start with breast and then bring in powder so they are used to that and then just stop the bottle. (Lines 25-26) yes just to get them used to it. They need to get used to the powder." (p28, Lines 28-29, Non-UK Indian grandmother, translated from Hindi (focus group).

"Ideally you should give mix straight away so the baby gets used to it. With my grandchild that's what we did. She had breastmilk but we put her on the powder straight away just to make sure she didn't get too used to the breast. It is a headache for

the mothers afterwards then. So, you make it easy for the mum too that way." (p29, Lines 16-18, Non-UK Indian grandmother, translated from Hindi (focus group).

All mothers spoke in detail about bottle feeding and differentiated between their own motivations to bottle feed and other mothers' motivations to bottle feed their babies. When discussing other mothers' bottle-feeding reasons, mothers cited factors such as other mothers perceiving that breastfeeding ruins the mother's figure. Mothers were unable to discuss further how they thought a breastfeeding mother's figure would be ruined but cited it as a reason to bottle feed. Mothers across all three sub-groups mentioned this as a motivation to bottle feed. Another factor that was mentioned across all three groups was going out to work. Mothers felt other mothers chose to bottle because they had to go out to work, and in such instances, mothers had no choice but to give the baby the bottle.

Grandmothers were asked why they thought some mothers bottle fed their babies. Like mothers, grandmothers also felt that mothers were motivated to bottle feed because there was a perception that breastfeeding ruins their figure. Grandmothers also mentioned that it was fashionable to be bottle feeding rather than breastfeeding. When asked to expand on this, grandmothers stated that it was just something that mothers thought was a good thing to do, the 'in' thing to do.

Pakistani mothers commented on the advice that they had received from their mothers-in-law about infant feeding. Mothers felt that they were living in a different generation to their mothers-in-law and felt that the advice that they were giving was out of date. Mothers felt that '*back in their day'*, mothers-in-law breastfed because that was the way but things had changed and that now there was an option for them to bottle feed. Mothers also spoke about being born in the UK and that breastfeeding was the thing done '*back home*' (in South Asia);

> *"Well at the time of my other two children I was living with my mother-in-law and her mother-in-law so it was really difficult. It was different, I think they wanted me to breastfeed, but they're used to the olden style, like I am born and raised here so it's different for me isn't it. So, for me I found it really embarrassing you know so I didn't."* (p11, Lines 23-26, UK born Pakistani, translated from Urdu)

> *"No, I don't listen to family anymore! I used to but not now. I think all the advice and the traditions are just so old now. Everything they say to you is like you can't do this you can't do that. Like when the baby is born do this feed him your milk? I think they are used to their own style back nearly thirty years ago, it's different now. I don't really follow anything that they say."*(p11, Line 98-100, UK born Pakistani, translated from Urdu)

7.3.4 Cultural practices and feeding choices/behaviours

Mothers and grandmothers were asked about whether there were any cultural or religious factors that had an influence on their infant feeding practices/behaviours. All individuals stated that there were none and commented on how their culture promoted breastfeeding as the best way to feed the baby. However, throughout their accounts mothers and grandmothers naturally spoke about several factors that signified cultural and religious factors that influenced infant feeding behaviour, which are discussed below.

7.3.4.1 Mothers-in-law as informants of cultural knowledge

Mothers-in-law strengthened the 'breast is best' message, but this contrasted with the messages that mothers got about the quality of their breastmilk later. Mothers-in-law actively encouraged mothers to feed the baby the '*good milk'*; breastmilk.

> *"My mother-in-law did push me to breastfeed but it just didn't happen so I just left it I didn't really think too much about it (p8, Lines 27-28) …my mother-in-law only pushed me because in her old age she got breast cancer and she got quick treatment and is now ok. And that's why she was telling me make sure you do it, it will help you in the long run."* (p8, Lines 58-60, Non-UK born Indian, translated from Hindi)

> *"Mum and that always say you should breastfeed first and all that kind of stuff and that's where it comes from. And everyone will always say it's the healthiest, best milk for them to start with, and all that kind of stuff I think that's where it comes from."* (p7, Line 127-129, Non-UK born Indian, translated form Hindi)

Mothers often spoke about how they were advised about the benefits of breastfeeding by the mother-in-law in terms of it being 'good' but they were not given information of how or why it was good for the baby.

> *"My mother-in-law would tell me, and tell me the different ways to do it and say how good it was for the baby. Not exactly the details of why but that's it good for the baby so it's good to do. Like I know that once you breastfeed the child stays right, nothing goes wrong like no illness and so it's good."* (p20, Line 21-23, Non-UK born Pakistani, translated from Urdu)

The mothers perceived that mothers-in-law were key informants about the cultural traditions surrounding infant feeding practices and/or behaviours. To enable mothers to produce '*good'* milk mothers-in-law advised the mothers to eat certain foods often cooked by the mother-in-law such as 'dabra' (a mix of nuts, desi ghee and dried fruit). Mothers were also advised about hot and cold foods (relating to a cultural teaching about the physical makeup of the food item) that would enable a healthy pregnancy. Mothers were told that hot foods such as nuts and potatoes should be avoided in the first trimester as they increase the risk of miscarriage. Cold foods such as vegetables and lentils should be eaten towards the end of pregnancy for easy labour;

> *"Yes, my mum told me to avoid fish whilst breastfeeding and to eat lots of lamb and meat and that kind of thing. And my mum told me to eat lots of dairy items to produce lots of breast milk. So, at the moment I'm not eating any type of fish because it's hot food and can make the breast milk hot for the baby (Lines 104-107) .... I don't know we just know that some foods are hot and some are cold. Hot foods aren't good for new babies but we should eat hot and cold in equal."* (p2, Lines 111-112, Non-UK born Bangladeshi, translated from Urdu)

Grandmothers spoke about the importance of the mother's diet in helping to feed the baby. All grandmothers stated that if the mother wanted to breastfeed her baby then her diet needed to be good and wholesome otherwise there was no point in breastfeeding the baby. Like the mothers, grandmothers also mentioned the importance of hot and cold foods during pregnancy that aided the development of the baby and after birth aided infant feeding. Grandmothers commented that 'nowadays' mothers did not have a good diet, which was having an impact on the breast milk of many mothers. Even if mothers did have breastmilk then the quality was questioned given that '*mothers don't eat the foods that they need to eat to make good milk'*.

> *"Because some mothers just don't have milk nowadays. I think it has a lot to do with their diets they aren't good diets nowadays so it affects the milk. Like I know the diets are different in this country and back at home where they eat well and breastfeed more. Like I know my cha chi (paternal auntie) used to breastfeed until her babies were 4 and 5 years old. Because they had a good diet their milk lasted a long long time. Because in here (UK), I don't know in your culture, but in our culture. Because once a pregnant woman comes homes she can't eat certain things (Lines 165-170) ...like they can't eat roti, they can't eat rice that much; they have to eat more greens rather than the potatoes and things, (Line 172-173) Because if they don't eat properly like most of them just live on fish and chips and takeaways so it doesn't make the milk…They don't eat the good foods. So, they can't breastfeed."* (p27, Line 183-184, Non-UK Pakistani grandmother, translated from Urdu)

> *"Yes cold foods make the milk flow slow and may clog it up and also, it's no good for the throat either. I told her loads of foods to eat and not to eat but did she listen. It's like cold milk; you should give baby's warm milk so it warms the inside so it doesn't cause illness. But people don't listen. Babies shouldn't drink cold milk that's why I said breastfeeding, because breastfeeding is a warm food. A pregnant woman should have hot foods, because when it goes in her stomach and produces milk, it produces a lot of breastmilk which is good for when the baby is born. The milk flows better with hot food."* (p10, Line 93-99, Non-UK Pakistani grandmother, translated from Urdu)

Although mothers-in-law were passing on the pro-breastfeeding messages to their daughters-in-law it was apparent through the mothers' accounts that they were also teaching misconceptions about feeding that were inhibiting mothers from breastfeeding. For example, if mothers were not eating the recommended foods, mothers-in-law felt that the mother's milk was not 'going to be good' for the baby and for this reason recommended the bottle. This was mentioned in the accounts of the Indian and Pakistani mothers.

There was a conflict between the pro-breastfeeding cultural messages that the mothers received and the messages about 'Pardah' (modesty) transmitted via the mothers-in-law and the community. Such messages were instilled in mothers from all three sub-groups from an early age; about not exposing themselves in front of others. Mothers found breastfeeding incompatible with preserving Pardah. This modesty was much more than just about breastfeeding in public. It centred on respect. Pardah did not allow breastfeeding in front of other people (family members), especially males. This proved difficult for mothers who were living in extended families. Mothers found it difficult to constantly go in a separate room to breastfeed their baby, instead they opted to bottle feed for ease.

> *"Think people who are bottle feeding in our culture, do it because they are shy and see no other way especially when we go out we can't just breastfeed like everyone else, we have to think about what people will say especially in our culture people talk."* (p8, Lines 121-123, Non-UK born Indian, translated from Hindi)

> *"If there's family around it does make it difficult to feed the baby in our culture because we live in big families and it's not nice to do it in front of people that's what we have been told by elders. And they all came to visit or if you're living with your in laws then it's harder. It is difficult, in our culture. Like I know some mothers who live in extended families who have just had to leave the breastfeeding because of the family like they just can't do it because they can't do it in front of people, and they say you have to cover yourself properly."* (p22, Lines 117-121, UK born Pakistani, translated from Urdu).

"There are loads of functions, when he was born I had to go to quite a few weddings and it's not something we should do in front of people, it's not a respected thing so I decided to give formula. In functions, it's not nice to feed in functions so that was the only reason." (p23, Lines 14-16, Non-UK born Bangladeshi, translated from Urdu)

"Think it's more acceptable if you bottle feed when you go outside and feed the baby, and bottle feed. Culture wise it's more acceptable, because you wouldn't be allowed to go out there and stick your you know out and feed the baby. They would be like oh my gosh, it's unacceptable." (p26, Lines 70-72, UK born Bangladeshi, translated from Urdu)

Grandmothers, like mothers, spoke extensively about the importance of Pardah (Modesty). Feeding in front of other family members was not allowed and was not a respected thing to do;

"Even when we used to go to the clinic, it was problematic because we wouldn't be able to feed. But even at home we must keep a level of respect, a level of Pardah we can't just feed anywhere in front of anyone. We can feed in front of the father-in-law of the brother-in-law and things like that. If someone has come from out, then we can't feed in front of them. But now people do, but in our culture, we are not supposed it isn't thought of as a good thing (Lines 31-39) ...like my daughters won't breastfeed in front of their dad, if someone has come then they don't feed in front of them. Definitely not in front of men, women its ok, but close ladies, those that are close family that is ok. But in front of men we are not allowed to do that." (p28, Lines 41-44, Non-UK Indian grandmother, translated from Hindi (focus group))

> *"Sometimes mothers are helpless, if you have to go somewhere or you have people around, the houses are small here so it is best to then just give the powder in times like that. We, in our culture cannot just feed in front of people, we can't just give breast milk like that so we have to think about these things and prepare don't you think. If you start them on both it is great but generally breastfeeding is really great."* (p29, Lines 8-10, Non-UK Pakistani grandmother, translated from Urdu (focus group)

Pardah also extended to not being able to openly talk about breastfeeding within the community and in the family. It was felt that breastfeeding was done behind closed doors and not spoken about or done in front of children and other adults.

> *"And the other thing is, other children, is you have another child if you have an eight, nine-year-old and you are breastfeeding. And the child starts to ask questions about what you are doing, in our culture you don't tend to say oh look "I'm just putting the child on the breast kind of thing, you kind of tell them to go away. I have a three-year-old niece who comes up to me and says what are you doing! She knows, and she was breastfed until two and a half years old. Which is the 'right 'Islamic age for a girl to be breastfed so she sort of remembers from her time. But now she comes up to me and she sort of turns away because she sort of knows that she should not be looking and that kind of thing so yeah."* (p14, Lines 173-185, UK born Pakistani, translated from Urdu)

Breastfeeding was only appropriate to discuss with close female elders which in many cases were the mothers or mothers-in-law;

> *"No not really, it's not something that is discussed; it's only with your husband or with the mother and mother-in-law. Actually, even then it's more just with close females. Husbands don't really have an input or an opinion on it so. (Lines 130-132) you can't really discuss it with anyone else. I think it's just part of the culture not to share such female personal things with outsiders; it's just not something that we do in our culture. Only discuss it with close female, mainly the elders like mother and mother-in-law."* (p12, 134-136, Non-UK born Indian, translated from Hindi)

> *"We don't see it or talk about it it's just something that happens and that's it kind of thing, didn't ask anyone their experience and stuff."* (p19, Lines 214-215, Non-UK born Pakistani, translated from Urdu)

7.3.4.2 Ghutti- A way of passing on good traits to the baby

Giving ghutti (administering a prelacteal feed, commonly honey) was a strong cultural practice that was performed by many mothers as soon as the baby was born. Ghutti was traditionally given immediately after birth, before the baby's first feed. Mothers were advised about giving ghutti by elders in the family and the community and it was often something that would be performed by an elder in the family. Giving ghutti was a way of passing the good traits of the elder to the baby. The baby is thought to turn out to be like the individual giving the ghutti;

> *"Yes, we do give it and believe it (Line 100) …. They say it's good for the baby to have some sweet, but mainly it's to get the qualities of the person that is giving it to the baby (103-104) ….so for mine, the grandma gave it, so they will turn out like them in terms of character and things. Yes, it's the first food."* (p6, Line 107-108, Non-UK born Indian, translated from Hindi)

> *"We gave that, well specifically his dad did (Line 95) …: they say that the person who gives the baby ghutti, the nature and the way he talks and his personality will be taken by the baby. We believe you give anything sweet so we gave honey. My parents had told us that it is the first thing that the baby tastes. Here they don't allow you to give it, though do they? They say you should only give baby honey after six months. But we did give it."* (p12, Lines 97-100, Non-UK born Indian, translated from Hindi)

Giving ghutti to the baby was often a one-off occurrence straight after the baby was born. However, there were some mothers who reported giving their baby additional foods and liquids in addition to giving ghutti. These additional foods/liquids were perceived to clean the baby's stomach or ease constipation;

> *"Oh, yes we gave her honey that was her first that was even before she had her milk we gave honey, so that was her first taste. We also gave her lukewarm water and some brown sugar to clean her stomach (Lines 304-306) [when she was born] yes in the hospital and then that was that and when she did used to get constipation on the milk. We used to boil fennel seeds in water and give her that."* (p24, Lines 308-309, UK born Pakistani, translated from Urdu)

> *"No. well not initially no. I wasn't aware things like that whereas my mother-in-law would be like no no he can have honey and fennel seeds he can have water, just boil it and put some fennel seeds in. It will help with his digestion and ease his tummy, it was more the fennel seeds she did tell me to do. Whereas I wasn't really sure about those sorts of things. I know we have it, mum puts it in tea sometimes and I don't like it! When she puts it in the tea. But I never really thought about giving it to the baby."* (p7, Lines 390-395, Non-UK born Indian, translated from Hindi)

Some mothers felt that the baby did not need milk straight away and opted to give water to their babies instead. Some mothers gave water to get the baby used to drinking water;

> *"No, the baby needs milk after one or two days. You should give water."* (p12, Lines 123-125, Non-UK born Indian).

> *"Yes, it was. I do give her water. I am trying to get her in the habit of drinking water (Line 63) ...water mixed with salt and sugar."* (p23, Line 65, Non-UK born Bangladeshi, translated from Urdu)

Grandmothers also spoke about giving ghutti and additional liquids to their grandchildren when they were born ease indigestion and constipation;

> *"They say that the bones are strong the baby gets strong and also it develops the personality of the one that gives it. Here, you can't get some of the stuff only in India and Pakistan so we just have to give honey and water. We also give lychee water when the new-born is little. So, the digestion system is good of the baby so it passes stool (Lines 108-111) ...we give that for the first three months or until they get their first tooth."* (p28, Lines 113, Non-UK Indian grandmother, translated from Hindi (focus group))

Some grandmothers noted that giving ghutti was beneficial because it cleaned the baby's stomach

> *"[Do we still practice giving Ghutti?] yes, that goes without saying we give that as soon as the baby is born."* (p30, Lines 12-, p30, Non-UK Pakistani grandmother, translated from Urdu (focus group))

> *"It's so good the honey cleans the baby's stomach and makes it nice and clean."* (P31, Line 124, Non-UK Pakistani, translated from Urdu)

There was a contradiction in some mothers' accounts of giving additional foods and liquids. Mothers spoke about the importance of giving their babies milk and nothing else until six months of age. They mentioned other family members who had given their babies other foods and liquids at an early age (2 months plus). Mothers saw this as inappropriate and that the baby '*didn't really need all that stuff*' at that age. However, these mothers had given their babies ghutti and had also given their babies water (with additional things added to it) but did not identify themselves as giving 'additional foods and/or liquids' to their baby. For example, one mother was aware of the importance of giving milk up until six months to the baby, and was adamant that this was what she was going to do. However, she had started to introduce her baby to rusk at three months;

> *"And I probably will wait until six months (before introducing food), although I am quite cautious. I am interested in what he does, so we've bought a little bowl and little spoon, so we give him baby rusk, so we try him on that, we try and give it to him, the first time he was like what the hell is this?! He didn't know what was going on, and he did that a couple of times actually. We don't do it every day; we do it every other day. I don't want to confuse him too much. And when we tried it the day before yesterday. We tried it Sunday morning, and you could see, it's like we were trying to give him something, and he was trying to swallow it a bit more, and so we got a little bit further. But then I thought I don't want to keep pushing him, and keep trying to give him something he doesn't want, so when it's like he's spitting it out, we just give him the rest of his milk."* (p7, lines 452-456, Non-UK born Indian, translated from Hindi).

7.3.4.3 'Nazar ka dood' -Discarding of colostrum

Most mothers, across all the ethnic sub-groups were unaware of what the term colostrum meant. There was only a small minority of mothers that were aware of the term (mainly from the Indian sub-group).Once the term was explained, some mothers recalled giving it to the child. Most mothers had been advised by their mothers-in-law to discard the colostrum as it was 'old milk'. Some mothers did not give colostrum intentionally but as one mother stated, *'must have given it if the baby was put to the breast*' (p13). Two mothers, one from the Bangladeshi and one from the Indian sub-group were aware of the benefits of colostrum and actively gave colostrum to their babies. All grandmothers were unaware of the term 'colostrum', however, like the mothers, when the term was explained they understood it to be old milk that should be taken out.

> *"My mother-in-law told me to throw that away she said it was old and had been there for nine months so I shouldn't give it* (p8, Line 167-168, Non-UK born Indian, translated from Hindi)

> *"….no, I wasn't told to give it so I just didn't. My mum did say that first but is really old try and take it out so I did."* (p13, Line 89-90, Non-UK born Indian, translated from Hindi)

Grandmothers spoke about colostrum as having no nutritional significance for the baby and advised their daughters/daughters-in-law to discard the colostrum. Grandmothers also mentioned that the colostrum was viewed as '*nazar ka dood'* in their time. Roughly translated this means that the colostrum had bad luck for the mother, thus by discarding the colostrum the bad luck goes away;

> *"No, you take that out. That is the dirty milk. And after that has been taken out then the good milk comes in. That's what we have been told. In my time, I was told that it was 'nazar ka dood' and it has to be taken out. (Line 66-68) ...no no they just say when that you give the milk you have to take that first milk out. And if the mum has any bad nazar on her then that goes away."* (p28, Line 70-71, Non-UK Indian grandmother, translated from Hindi (focus group))

> *"No no, we don't give that, we have to throw it away, its old milk. With that milk, you take that out because it's old. It's not good for the baby."* (p10 Line 73-74, Non-UK Pakistani, translated from Urdu).

7.3.5 Perceived capability

Mothers spoke in detail about various aspects of feeding that focused on the mother's perceived ability to breastfeed. Mothers cited their elders (mothers or mothers-in-law) as having significant influences on infant feeding choice. Mothers spoke about the dialogue that they had had with health professionals regarding breastfeeding. When mothers questioned their abilities to feed their baby or the baby not taking to the breast, mothers felt health professionals did not give them the confidence or support to try and address the breastfeeding difficulties. Instead health professionals confirmed that the baby was '*not going to breastfeed'*. Some mothers had the confidence to carry on regardless of this lack of breastfeeding support;

> *"To be honest they were better than the midwives at the hospital because when he started, he latched on fine and I knew he was drinking straight away with the first skin to skin I had with him. But when I came back after my operation he wouldn't drink, he wasn't drinking and he was pushing it away and if he did latch on then he was just sucking on it, which made it really sore. And the midwife was like well he's not going to breastfeed , he's not going to breastfeed and I was like yeah but he has already fed off me , so it's not like it's the first time, but she was like well look he's pushing it kind of thing , which means he doesn't like it (Lines 211-218)...so yes really that was a big downer on it all but I was still very strong willed and ignored all that and fed him regardless."* (p14, Lines 222-223, UK born Pakistani**)**

However, most the mothers did not have the confidence to question the lack of support from health professionals. When mothers voiced concern about the baby not taking the breast, mothers were given the bottle;

> *"Well you guys (health professionals) haven't given me any support all day, just popped in and said it's probably feeding time now, erm see if he takes to it, they aren't there supporting me through the feed, that trying to feed. And they are back five minutes later asking how I got on, and then I'd say we aren't getting anywhere, well ok we will get you a bottle. So off they go to get a bottle and give it to me. And that's it."* (p7,199-203, Non-UK born Indian, translated from Hindi)

> *"No, they (health professionals) don't help; they don't help with anything so I didn't bother to ask. With my first I, didn't get any help so I didn't bother to ask because I know they won't do anything. I tried to ask for help, but they didn't really tell me, or tell me how to do it or what to do, so just left it (breastfeeding)."* (p10, Lines 35-37, Non-UK born Pakistani, translated from Urdu)

Some mothers from the Indian sub-group talked about why they were unable to access breastfeeding support services when they faced difficulties in breastfeeding. There was a lack of awareness of who to go to for support but more so that the mothers felt uncomfortable accessing a service on their own. They did not know other mothers that they could go with to antenatal/postnatal classes and that was a key factor in deciding whether to access a service or not. Other competing factors such as running the house and having other children to look after inhibited mothers from accessing breastfeeding support services.

There was a consensus amongst the grandmothers that nowadays daughters-in-law did not need advice from the grandmothers about how to feed their babies. Grandmothers identified the internet as taking over their role of giving advice and felt that this was the first place mothers would go to if they needed advice about infant feeding. This was closely related to grandmothers' confidence in being able to communicate with their daughters-in-law about how to feed their babies. Grandmothers didn't feel able to communicate with their daughter-in-law because of the physical barrier of space between them. Some grandmothers stated that they did not live with their daughters-in-law but if they did they would have felt more comfortable in advising them about various aspects of infant feeding including breastfeeding. Often grandmothers would wait for the daughters or daughters-in-law to initiate the dialogue about infant feeding. If they did not do so, grandmothers did not feel that they needed the advice;

> *"I think it's because she doesn't live with me so I can't really tell her, and I don't really get that chance to have that conversation (Lines 34-35. I just didn't say this is how you do and what you should do. Because normally nowadays nobody lives with you so you haven't got a chance to teach them so that makes it harder to tell them about that."* (P27 Line 37-38) *Because if you live together you get more chances to talk about things about the baby, and you get the chance to advise them to teach them, but when they are not living with you it's harder.* (p27 Line 116-117, Non-UK Pakistani, translated from Urdu)

Grandmothers' perceptions of mothers not needing advice also stemmed from the fact that when they gave advice to their daughters/daughters-in-law they did not take the advice and gave the impression that '*they knew better'*. This was something that discouraged grandmothers from giving any advice related to infant feeding;

> *"Nowadays the kids don't want it do they, they think whatever they are doing is best and then they say in your days it was different to now. Nowadays things are different so whatever we think that's what's best. They do their ways."* (p27, Line 155-157, Non-UK Pakistani, translated from Urdu)

> *"They don't listen to us elder now they don't even discuss anything let alone listen. I told her about breastfeeding, I tried to make her understand but nothing."* (p29, Line 102, Non-UK Pakistani grandmother, translated from Urdu (focus group))

> *"The thing is I have told her loads of times, that the mother's milk is the best but she never listened to me (Line 13) ...Todays women they don't listen to us elders anymore" (*p10 Line 15, Non-UK Pakistani grandmother, translated from Urdu)

The above quotes are interesting because the sample of mothers saw their mothers-in-law as authority figures and would attend to the information they were given by them over and above the advice from a health professional but this was in contrast to how grandmothers perceived their role to be.

In the very early days, mothers spoke about how they felt like they did not have any milk and thus had no choice but to bottle feed their babies. Milk supply was a theme that arose in the later days following childbirth in all mothers' accounts regardless of ethnic group. Once home, mothers did not feel that they had enough milk to satisfy the nutritional demands of their baby. Mothers also felt incapable of providing their babies with 'nice milk' and because of such beliefs resorted to bottle feeding their baby. The mother-in-law reinforced the feelings of not being able to provide good milk. Pakistani and Indian mothers reported that mothers-in-law would often tell them that they were not eating properly, which was having an impact on the quality and/or supply of the breastmilk. In such circumstances, mothers were advised by mothers-in-law to feed their baby the bottle as this was more nutritious than the milk that the mothers were producing;

> *"It was the complete opposite from my mother-in-law. I don't know whether it was because she was more of a backward thinker, being from back home in India, I didn't get any support from her. The whole time she was here I don't think I did really, although she was supposed to be here to help erm, yes, no so it was a bit more it's my fault, I have no milk, I can't support him, I can't give him the milk. No, she's not eating properly, she's not doing this and she's not doing that. well you know I'm eating everything you are giving me, I am eating the things you are telling me to you are giving me the milk, I'm drinking that. Even if I don't want it I'm still eating and drinking and then it was all the opposite with her. Telling me it was my fault, I'd hear her talking to my father-in- law on the phone, because he'd gone back home, 'oh it's her, she's got no milk, she can't feed him."* (p7, 154-162, Non-UK born Indian, translated from Urdu)

"She (mother-in-law) just said oh you aren't going to have any breast milk you don't eat look at the size of you just carry on and give him the bottle it's good for him! (Lines 120-121) ...just wanted to make my mind up. I knew breastfeeding was good for them. Even with the first one like everyone kept saying don't, don't breastfeed, like my in laws, my mother in law, my husband's grandma was like you haven't got any milk. I did try and carried on. But only for three four weeks and then I just stooped they just kept saying I wasn't feeding enough milk because there was nothing there that's what they kept t saying." (p11, 123-127, UK born Pakistani, translated from Urdu)

"Like, yeah just I think it was my mother-in-law. She was like give breastfeeding and then was like you don't have good milk so give bottle. Personally, I wanted to give my milk, I preferred breastfeeding but just couldn't because I didn't have any." (p9, Lines 83-85, Non-UK born Pakistani, translated from Urdu)

Grandmothers spoke about the mother's milk supply and that there were occasions where mothers could not produce milk. In such instances mothers were helpless and had no choice but to bottle feed their babies. Grandmothers had advised their daughters/daughters-in-law to bottle feed when they had little milk in the very early days after birth.

Indian and Pakistani mothers spoke about breastfeeding as something that '*just wasn't happening*' for reasons related to the mother. Mothers spoke about breastfeeding being presented as an easy, natural way to feed the baby but when it came to reality, it was far from that. Mothers spoke about the difficulties of breastfeeding and finding it hard to breastfeed whilst doing other household chores;

> *"No just that bottle was easy. And we have so many visitors it would have been so hard to do. And to actually do it would take a long time."* (p10, Line 20-21, Non-UK born Pakistani, translated from Urdu)

> *"I did it maybe once or twice, it just didn't work it was just so much hard work. And I couldn't do anything around the house it was just impossible."* (p24 Lines 10-11, UK born Pakistani)

7.3.6 Infant feeding in the UK versus 'back home'

The interview schedule aimed to ask the mothers about how the immigration process and in particular the adaptation to the UK culture may have impacted on their infant feeding choices and behaviours. Mothers naturally compared the infant feeding practices that they engaged in when living in the UK with those from 'back home'.

All mothers recalled experiences of growing up and seeing their mothers or other relatives breastfeeding their babies and hearing about how breastfeeding was the '*done thing'*. There was a belief that breastfeeding was the norm as this was all they had known back home in South Asia.

> *"I just know people around me always talked about it that's why I did it."* (p20, Line 42, Non-UK born Pakistani, translated from Urdu)

> *"It's just the done thing; I don't know it's just the done thing (p7, Line 126, Non-UK born Indian) …no I wouldn't say it's cultural, I just think it's just the done thing (breastfeeding), it's what you do, you have a baby, its normal you breastfeed that's it."* (p7, Lines 386-387, Non-UK born Indian, translated from Hindi)

> *"It depends on how you have been bought up. I don't know if there is anything that influences but if everyone is telling you to breastfeed and everyone is doing it does make you think that maybe you should try it because it's good."* (p22, Line 113-115, UK born Pakistani, translated from Urdu)

All mothers regardless of ethnic group spoke about how breastfeeding was the main choice of feeding method 'back home' (in India, Pakistan and Bangladesh). However, there was recognition that slowly this may be changing with the awareness of bottle feeding becoming common in South Asia. This contrasted with their perceptions of how mothers fed their babies in the United Kingdom. Mothers suggested that other mothers of all other ethnic groups bottle-fed or mix fed their babies however South Asian mothers 'probably breastfed'. It was difficult for mothers to say how other mothers fed their babies as they had very little contact with mothers outside their own family circle.

Mothers were asked about why they thought there were differences between the two countries. Mothers said, in the UK most mothers work and so have no choice but to bottle feed. Regarding feeding in South Asia, mothers felt that there was very little awareness of bottle feeding and this was one of the main reasons that breastfeeding was still protected in South Asia. Living in the family and having a family support network was also mentioned as something that was common in South Asia and thus allowed the mothers to breastfeed.

Mothers and grandmothers made comparisons between mothers in the UK and those living in countries like Pakistan. There was a belief that 'back home' everyone breastfeeds, partly because there was very little knowledge about 'powdered milks'

> *"I think breastfeeding everyone does it, especially where we live a lot of them, are from back home, from Pakistan and it's all they know so they all do it. They aren't really aware of the powered milks and they can't talk very much English."* (p24, Lines 383-385, UK born Pakistani, translated from Urdu)

"Well I had some visitors who were from Pakistan. She breastfed her children up to the age of two years, but she didn't have the knowledge about bottle feeding, where to get formula, how to sterilise the bottles and things like that and also how to measure the milk. So she said I didn't want to get into all that and I chose to breastfeed. But she said if she had all that information she would probably would have bottle fed. But I think most mothers from Pakistan breastfeed. But there is a small minority that may bottle feed." (p25, Lines 100-105, UK born Pakistani, translated from Urdu)

"But I think there in Pakistan it's about knowledge. They don't know half the things (about bottle); it's about being educated there. They just don't know (Lines 349). They aren't topping up or anything. And they just think well the milk will come in and in the mean time they just let the baby cry. How does that work?" (p24, Lines 355-356, UK born Pakistani, translated from Urdu)

Mothers and Grandmothers were asked about how they thought other mothers in the UK fed their babies. Grandmothers tended to speak about mothers from ethnic groups other than the South Asian ethnic group. Grandmothers stated that mothers were mostly breastfeeding, because they could do it openly now compared to when their generation was younger;

> *"They are just easy to breastfeed anywhere and everywhere they don't have to worry like we do. We can't do it so openly. It just isn't something that is good to do in front of everyone. It is normal for mothers in the UK to breastfeed outside. But not in our country or culture. We can't do it when out and about in Pakistan. We have to be careful there."* (p29, Lines 61-64, Non-UK Pakistani grandmother, translated from Urdu (focus group)

When grandmothers were asked about how mothers fed their babies in South Asia there was a distinction between those mothers who lived in the village and those that were living in the city. Grandmothers believed that those living in the villages had no choice but to breastfeed their babies because of a lack of access to formula powder;

> *"Think there it is a must to feed because there is not much money for anything else. Its only once we came here we were able to access things like powder. Even in India and Pakistan we don't know about tin foods. There is nothing like that. There, the baby is born, and straight away he drinks his mum's milk and that's it."* (p28, Lines 81-84, Non-UK Indian grandmother, translated from Hindi (focus group)

> *"Mostly breastfeed isn't it, even until god knows how (Lines 85) ...because poor people don't have enough to feed their babies, like proper other milk like the powder, and also*

a lot of them are from the village where they don't have lots of money so they breastfeed. They eat straight from the fields they eat there. And also, if they do want to give other milk they will just give the cow's milk straight from the cow so that's what it is like. In the villages that are the only choice its breastfeeding or it's the cow's milk. That is what they can only do." (p27, Lines 87-91, Non-UK Pakistani, translated from Urdu)

However, speaking about mothers from the cities in South Asia, grandmothers stated that things were changing; bottle feeding was becoming common in this sub-group. A lot of grandmothers mentioned that mothers 'back home' were becoming more educated and perceiving that bottle feeding was a more '*fashionable'* option;

"The bottle is more fashionable there now than it is here that is a problem. It's those that are educated they want to bottle feed. Not the ones that live in the villages they still breastfeed." (p3-, focus group, Lines 100-101, Non-UK Pakistani, translated from Urdu)

"In Pakistan, it is fashionable to bottle feed the times are changing, more people are being educated and they all think that that's what educated mums do." (p31, Lines 102-103, Non-UK Pakistani, translated from Urdu)

7.3.7 Immigration and the UK infant feeding context

Mothers were asked whether they thought immigrating to the UK would affect choice of feeding, and whether they thought adopting the UK culture or not would have an impact on feeding choice or practices. Mothers who had immigrated to the UK spoke about the differences in context between countries such as India, Pakistan and Bangladesh and the UK. The biggest impact of immigrating to the UK was the loss of the family network. All mothers in the sample who had immigrated had done so for marriage purposes and although most were living in extended families some were living as a small family unit with their husband and children. Regardless of living arrangements, all mothers that had migrated to the UK spoke about the loss of the family network that had a direct impact on infant feeding behaviours;

> *"I think there (India) I would have had all the family support I would have been encouraged more to breastfeed and helped to do so. Here we are all alone, if we face difficulty we don't have anyone to support or guide us. We just try and go with whatever the child wants really, what is easy for us really."* (p12, Lines 46-49, Non-UK born Indian, translated from Hindi)

> *"No not really, I think the only thing here really is that there is no one. Over there (India) there is family, like your mother-in-law and mother to care for you, here there is no one we have to do it ourselves we have no one's support. We have to depend on ourselves so have to just do what we think is best."* (p5, Lines 174-176, Non-UK born Indian, translated from Hindi)

"I think they change; the reason is because I tell you in Bangladesh what the situation is. If I am in my country, and I have a baby I have lots of people to help me in my housework, so I can spend with my baby a long time, and feed him and give him all the attention. But in this country, cooking, cleaning you have to do it all on your own and when you have other kids then you have to attend to them you don't have the extended family to help you/ so it's a lot harder. Very few times, I can't spend a long time with my little one. So, this is a major reason why they change to bottle. So, in this country, especially for us who come from different countries it is very hard for us." (p17, Lines 106-114, Non-UK born Bangladeshi, translated from Urdu).

Some mothers spoke about the impact of immigration in terms of adapting to the new environment;

"To come to this country, you do have to change and adapt (Lines 155-156) like they say. In India and Pakistan, they say put sugar in the baby's milk but here we don't do it because we know too much sugar isn't good for babies. But my mum and mother-in-law always tell me to put it in his bottle but I don't. Doctors say it's not good for them. So, things like that change. There they say put ajwaan (fennel seeds) in the milk for the baby's digestion but here we don't do that. But if we lived with extended family then maybe but because I am on my own without mum." (p12, Lines 158-163, Non-UK born Indian, translated from Hindi)

"They change; staying in this culture, seeing the people here it has an influence. You just become like the society." (p23 Line 107-108, Non-UK born Bangladeshi, translated from Urdu)

Some mothers specifically mentioned that immigrating to the UK meant that mothers gained information on bottle feeding which influenced their own infant feeding choices;

> "[*do you think the longer the live in the UK it has an influence on their choice of feeding] yes... I think it's from the information that they get that bottle feeding is easier. And that they want to change because they are living here now and they think that's how it's done here?"* (p25, Lines 109-110, UK born Pakistani, translated from Urdu)

A mother born in the UK gave an account of how she thought immigration affected non-immigrant mothers' infant feeding. Being able to speak English and '*getting out there'* were almost seen as risk factors for formula feeding;

> *"I think if they are a bit educated they get out there, they go out there they go to classes, they speak to midwives you know they start talking to people around them who can speak English and then they find out things (Lines 395-397) .... Then they start going to powder milks. But the ones who can't speak English, and who don't get out there they just stick to what they know. Because there is so many that do that. Like there is a lady that lives down the road and she was saying to me oh I have Aptamil now and I was thinking how does she know about Aptamil? It must be that she is a bit more educated, and she comes from an educated family and she speaks English and she has a smartphone and she uses WhatsApp so it must be that. She speaks to neighbours, like I see her with the English ladies. And so she must be communicating with them and that's how she's found out or even midwives and stuff. Probably because she can communicate better she is aware that it is out there on the market. They just need someone who can make them aware of the things that are out there but they don't know they just stick to what they know."* (p24 Lines 399-413, UK born Pakistani)

Mothers were also asked about their opinions on how they thought other mothers in the UK fed their babies. Mothers, regardless of ethnic group, felt unable to answer this as they had little contact with mothers outside of their immediate family or social circle.

> *"I just don't know, I don't see anyone from here to say I just don't know. I don't have experience of people born here. Because a lot of people in my family that's who I see. There was one lady in my family she didn't give it; she decided just no she wanted to bottle."* (p13, Line 101-103, Non-UK born Indian, translated from Hindi)

> *"I don't know because I don't have experience of seeing anyone or know anyone so I don't know. I guess I do in family they breastfeed, but outside of that I don't know."* (p19, Lines 212-213, Non-UK born Pakistani, translated from Urdu)

Some mothers used the hospital stay when they gave birth as a point of reference with varying opinions on how mothers in the UK feed their babies;

> *"Well only from the hospital, I don't see many people but when I was I the hospital, there were lots of new-born babies, and I was in hospital for a good nine to ten days and I saw them and they were all bottle feeding they were bottle-feeding mostly. And there were some who were premature and they couldn't suck and they were also bottle feeding."* (p17, Lines 121-124, Non-UK Bangladeshi, translated from Urdu)

"I think, well it's when I was in hospital I saw, otherwise I wouldn't know. But quite a few mothers were breastfeeding, and I was in there a week because she had jaundice."

(p22, Line 49-50, UK born Pakistani, translated from Urdu)

Grandmothers spoke about the times when they immigrated to the UK, and the difficulties they experienced in breastfeeding their babies, because back in their times breastfeeding was 'non-existent' in the UK. When asked about how immigration may impact infant feeding some grandmothers did not understand how it could have an impact. There was an impression that if mothers are breastfeeding in places like India and Pakistan then there would be no reason to change feeding choices upon migration to the UK.

However, some grandmothers recognised that moving to the UK mothers would be likely to change their feeding choices particularly because formula was readily available in the UK. Some grandmothers also suggested that mothers change their infant feeding choices because they wanted to be '*modern and fashionable'* and thought that breastfeeding was a very backward way of feeding babies.

7.3.8 Breastfeeding support

Mothers spoke at length about their experiences of both positive and negative breastfeeding support that they had received. Some mothers commented on the breastfeeding support that they had accessed from local classes after birth;

"I did go to [mentions local organisation name] classes and they showed how to breastfeed and that was really useful, I really enjoyed that. I went when I had my first baby…. [were they useful?] yes really best. Because I learnt how to look after the child

how to feed the child and things like that. Classes are much better than information leaflets." (p4, 189-197, Non-UK Born Indian, translated from Hindi).

"[When you were pregnant did you use any support services?] Yes, I think so, when I was in [local area] I went to three or four classes… a midwife came to explain what the labour would be like, and the breastfeeding people came and showed how to feed and how to put the baby to sleep… I didn't know anything because it was the first baby so I didn't know anything so I learnt a lot. I used YouTube a lot to learn things also." (p8, Lines 194-199, Non-UK Born Indian, translated from Hindi)

Most the mothers spoke about the information that they had received as '*being told things they already knew'*. Mothers felt that information was often repeated about the benefits of breastfeeding and how to latch on but they felt that they required more than this verbal information. Mothers felt that they needed support in being shown how to effectively feed their babies.

> *"And then I suppose afterwards, I was told that we could go and contact the breastfeeding centre where the midwives could come out to us and I did phone the next day and have somebody come out. So, this was day three by then, before somebody came out, and by then, they were telling me things that I already knew but they weren't actually helping me and showing me exactly what I needed to do, and whether he was doing it right or not."* (p7, Lines 102-104, Non-UK Indian, translated from Hindi)

The majority of the mothers had not accessed breastfeeding support services. The reasons for this were varied, with some mothers stating that they were unaware of the services available whilst others stated that they simply did not need the services. This was interesting given that this was also voiced by mothers who had experienced difficulties in breastfeeding their infants. Mothers who perceived their milk was inadequate opted to formula feed rather than seek help;

> *"[were there any services that you used to support breastfeeding] …no not really, it's because I didn't need anything like that… I didn't need help because I just didn't have the milk that was all." (P9, lines 175-177,* Non-UK born Pakistani, translated from Urdu*)*

Not needing to access breastfeeding services was echoed by the majority of the mothers. However, the majority did not need to access the services because their main sources of support were other family members, particularly mothers, mothers-in-law and sisters;

> *"[Who was your main source of support] well I didn't have to go anywhere because my mother-in-law and sister-in-law live here so they supported me. So there was no need for me to go anywhere. They live here with so it was better" (p6, 59-61) … it's because families provide more support than those people (health professionals). They (family) know you more than them. We are bought up to do that."* (p6, 125-126, Non-UK Born Indian, translated from Hindi)

> *"The midwives did give me the numbers and things but I never rang them because I got lots of help from my mum and my sisters so I didn't need it."* (p22, 134-136, UK Pakistani, translated from Urdu)

> *"My mum and mother-in-law just used to tell me what to do during the pregnancy so it was just easier to be at home."* (P12, 115-116, Non-UK Indian, translated from Hindi)

Mothers were likely to consult this support network before consulting the health professionals over various matters of infant feeding;

> *"It's better to get support from family they know more. They understand more I would have been able to breastfeed if they were here. They would have made sure (p12, Lines 41-43) it is hard to address because we are all alone, no one can help like your own parents can (Line 51). [Do you think if you needed advice you would go more to your parents or health professionals] first family. We live with them they know us and what is better for us."* (p12, Line 53, Non-UK born Indian, translated from Hindi)

Unfortunately, some Pakistani mothers said that the barrier to accessing information and understanding breastfeeding information was not being able to speak or understand English. Mothers who had immigrated to the UK, even those who had been living here for some time were unfamiliar with English and thus found it hard to engage with the information being given to them;

> *"They did tell me I think but because I don't know English I don't really know what they said. I didn't ask why they did it I just went along with it."* (p21, Line 35-36, Non-UK born Pakistani, translated from Urdu)

> *"My English was not good at all so how could I ask and how would I have understood what they were saying. I think there was that too that I couldn't speak any English. I did not ask and they did not tell it was a simple as that. (Lines 48-50) [didn't they offer you*

a translator at all?] no they did not say anything to me about that. Three of the times I have given birth there was nothing." (p10, Lines 51-53, Non-UK born Pakistani, translated from Urdu)

Some Indian mothers in the sample were using smartphones and the internet to access breastfeeding information but this was not the case for the majority. The majority relied on other family members to give them the information needed to support infant feeding. This was also reflected in the support needs of the mothers. Although some mothers commented that it would be beneficial to have online breastfeeding support, the majority stated that they would benefit from one to one classes that demonstrate hands on support about how to breastfeed their baby. The timing of this information is crucial and most thought that it should be given at the start of their pregnancies.

"I think face to face is the most benefit, and classes you learn more things. DVD's and things like that you bring them home and just leave them it's not a priority to watch with all the other things that we do in the house. If we get time we will watch t otherwise it's not a big deal we tend to just forget about them." (p8, Line 203-204, Non-UK born Indian, translated from Hindi)

"It's the hands-on experience; I don't think there's anything else really. From my experience, it would have been the hands-on stuff that would have really helped. Come and do this with me, if I'm not doing it right, if I'm not holding baby right, is this, is it me or is it the baby. If I'm doing something wrong then I want to know so I can put it right, so I can make it better for him. Whereas my decision at the end was well he

doesn't want it, I'm trying but he doesn't want it, so no, other than the hands-on experience I don't think there is anything else." (p7, Lines 436-441, Non-UK born Indian, translated from Hindi)

"I think you can if you show that mums breastfeed then that's good. Because I don't know about the UK culture and what they do so it would be good to see that more. Leaflets are good for mums because we read them and we watch DVDs at home. Programmes on the telly we watch and we can see that and see." (p13, Line 122-125, Non-UK born Indian, translated from Hindi)

Some mothers mentioned that DVDS would be beneficial as a source of information for infant feeding;

*"It's a good idea to have something like a DVD that the mother can watch at home, so she can understand what to expect with feeding the baby and how to feed their baby that would be a lot of support. The thing with the classes is that you can get the opinion of the mothers that's so good. With DVDs, you don't really get that, and it's useful to hear from other mums about what they think too." (*p18, Lines 112-116, Non-UK born Pakistani, translated from Urdu)

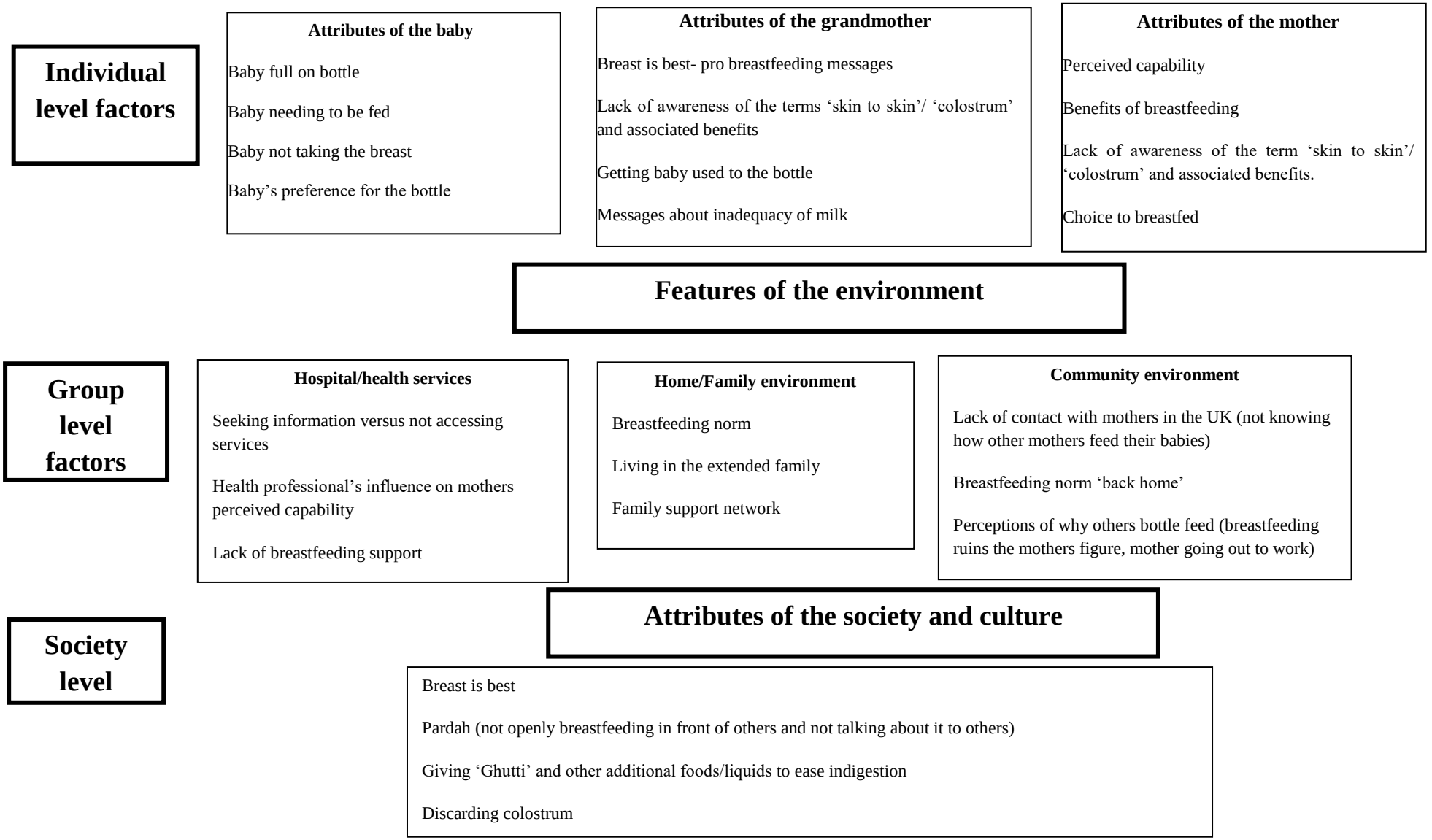
"Think first time a DVD would have been helpful because I don't really use the internet and things. But I wouldn't go to a class, just because I can't, I just wouldn't have the time and you just prefer it in your own home really." (p11, Lines 204-206, UK born Pakistani, translated from Urdu)

The theme of breastfeeding support will be revisited in Chapter eight, where the qualitative findings relating to breastfeeding support will be discussed in relation to a suitable intervention to support IPAB mothers to support infant feeding.

7.4 Making sense of the findings- The use of Hector's framework

The framework analysis reveals the complexities that surround infant feeding practices amongst IPAB mothers. In chapter 1, Hector et al's framework (2005) was introduced as a means of understanding the multiple level factors that may impact on breastfeeding behaviours. This model can be used as a foundation to understand the factors experienced by the above sub-groups in the qualitative study of the thesis. Hector et al's (2005) original model describes the mother/baby dyad. This has been adapted to include the grandmother to reflect the interaction between the three individuals that may have an impact on infant feeding practices. Figure 3 describes the findings in relation to the above model for the mothers' and grandmothers' data.

Figure 3-Individual, Society and Group level factors impacting on IPAB mothers living in the UK



This model allows illustrating the factors at the individual, group and societal level that need to be addressed to allow mothers to be able to breastfeed in an enabling environment.

At an individual level the attributes of the baby, grandmother and mother may inhibit successful breastfeeding. The perceptions of both mothers and grandmothers form the attributes of the baby particularly in terms of beliefs that the baby prefers the bottle, baby not liking the breast and beliefs that baby gets full on the bottle. Attributes of the grandmother such as relaying pro breastfeeding messages about the benefits of breastfeeding which conflicted with the cultural messages about the inadequacy of the breastmilk, and the importance of getting baby used to the bottle impacted on infant feeding. Mothers intended to breastfeed and were aware of the benefits of breastfeeding but both mothers and grandmothers were unaware of the terms 'skin to skin' and 'colostrum' and the associated benefits. Mothers exercised choice when opting to feed but also voiced opinions about the baby needing to get use to the bottle, baby not taking to the bottle and the perceptions of inadequate milk.

Group level factors centred on the quality of health professional support that was received which was in part due to the language barriers that inhibited mothers from accessing services, and general lack of motivation to seek support when breastfeeding difficulties arose. Within the home/family environment most mothers believed breastfeeding was the best form of feeding however living in the extended family often inhibited mothers from successfully breastfeeding. Outside of the family environment, and within the community environment, there was a lack of contact with other mothers in the UK. This contributed to mothers not knowing how other mothers fed in the UK and a recognition that breastfeeding was the 'norm' back home (in South Asian countries). At a societal level, mothers and grandmothers were aware of the 'breast is best 'message however cultural teachings about the importance of preserving Pardah, discarding colostrum and giving ghutti to the new-born all impacted on breastfeeding practices. Immigration to a new country like the UK meant a loss of social networks back home that would have potentially supported breastfeeding.

Given the heterogeneous breastfeeding patterns that emerged in the IFS secondary analysis chapters (chapters 3 and 4) amongst IPAB mothers it is interesting to note that the differences in the themes that have emerged across the three groups and their accounts are not as distinct as expected. This could be for a number of reasons that will be discussed in the discussion section of this chapter. A discussion of this is offered in the following section.

7.5 Discussion

Chapter identified a multitude of factors that potentially impacted on IPAB mothers initiating breastfeeding and breastfeeding exclusively. Key gaps were also identified by the scoping review in terms of the literature on South Asian mothers living in the UK. The majority of the studies originated from South Asia, and thus questions about whether factors identified in the South Asian literature impacted on South Asian mothers living in the UK (whether UK or Non-UK born) remained to be explored. Two key practices highlighted in the scoping review of discarding colostrum and administering prelacteal feeds along with the cultural and societal embedded factors were also highlighted and of relevance to explore further in the current thesis via qualitative enquiry. What follows is a brief discussion of the findings and some reflections on the qualitative enquiry.

7.5.1 Summary of findings

Mothers in the study exercised their '*choice'* when it came to feeding their baby. It was the '*mother's choice'* to breastfeed even when faced with various advice and encouragement to feed otherwise. This choice was also spoken about when mothers bottle fed their babies which was in stark contrast to accounts of mothers saying they were helpless in their decision to bottle feed because it was governed by the preference of their baby. The feeding choice is an interesting theme given the cultural and social context within which mothers from the IPAB mothers feed their babies. This context could be seen to be impinging on that choice particularly when it comes to breastfeeding. Teaching of misconceptions about the needs to get the baby used to the bottle and the inadequacy of breast milk and mothers not having the good milk take away choice from the mothers to breastfeed their babies. Preserving Pardah in the family home and in the community is something that is upheld in the South Asian community which means that bottle feeding is opted for.

Timely initiation is affected by the teachings that colostrum is old, dirty milk and should be discarded. Prelacteal feeds (ghutti) should be given to the baby before any milk is given. Teachings such as these are well grounded in the South Asian culture along with the teachings about 'breast is best' teachings. With such conflicting teachings mothers' breastfeeding behaviours suffer and bottle feeding is opted for.

The influence of the grandmother is key. She was the main informant of religious and cultural teachings and often her opinion was acted upon; whether that was in line with the mothers' opinions or not. Most mothers and grandmothers were unable to cite specific health benefits of breastfeeding but were aware that breastfeeding was the best form of feeding. However, this knowledge about 'breast is best' was overpowered by the cultural and societal factors that governed most mothers' infant feeding choices in the sample. Bottle feeding addressed some of the cultural tensions that surrounded breastfeeding particularly in terms of preserving a mother's modesty. Living in the extended family was a key issue that concerned both grandmothers and mothers. Breastfeeding could not be engaged in in front of other people as it was not a modest thing to do.

Powerful cultural influences governed choice of feeding and had an impact on breastfeeding initiation. None of the mothers spoke about the importance of the first milk. The majority of mothers and grandmothers were unaware of the term colostrum and its benefits. There was a strong cultural basis for discarding colostrum because it was the 'old/dirty' milk that could cause harm to the baby. Another cultural practice that hindered breastfeeding very early on was the practice of ghutti. Before initiating breastfeeding mothers were taught to give their babies Ghutti for various reasons, but mainly because it was thought to cleanse the baby's stomach and it was a cultural practice that was to be engaged in. This is a new finding for the UK literature and further research is required to understand if it is a widely practiced behaviour or it is something evident in the locality in which this research took place.

Bottle feeding was almost seen as an inevitable option, whether that was in response to the baby's preference for the bottle, the baby not taking the bottle or in response to the demands of the cultural and social context that promoted Pardah and the importance of getting the baby used to the bottle.

In previous work (Choudhry and Wallace, 2012) acculturation has been shown to impact Pakistani mother's infant feeding. However, there was little discussion about how acculturating (i.e. in its broadest sense the women adopting the culture of the UK) may impact on the mothers infant feeding decisions, beliefs or behaviours in the current sample. There was recognition that 'back home' feeding practices were different and that there was a loss of the family support network after migrating to the UK. However there was no clear discussion that acculturation per se of the UK had a negative impact on breastfeeding beliefs or practices of the mothers taking part in the interviews. This may well be due to the length of stay in the UK. It is suggested that acculturation can take a long time to occur. Most of the mothers that took part in the study were fairly recent migrants. Further, work would benefit from longitudinal studies that aim to understand the impact of acculturation on infant feeding practices amongst South Asian mothers that have been in the UK a longer period of time than those mothers in the current study.

Similarities or differences?

Given the findings of the IFS secondary analysis where differences were identified in breastfeeding behaviours and various antenatal and postnatal factors related to IPAB it is interesting that the qualitative framework analysis highlights that there are similarities amongst the IPAB and their beliefs and experiences related to infant feeding. There are two potential reasons for why this may be. Firstly it could be argued that the sample sizes for the qualitative interviews/focus groups were not large enough to detect notable differences across the Indian, Pakistani and Bangladeshi sub-groups (i.e. n=9, 11 and 6 respectively). Although data saturation was reached and no new themes were emerging from the datasets, future work may benefit from

recruiting larger number of individuals to see if other factors not captured by the interview schedule used in the current thesis are important in the context of infant feeding amongst IPAB mothers.

Another explanation for the similarities in themes across IPAB sub-groups is that the individuals were living in close proximity and that there has been a convergence of cultural/religious practices and teachings. Acculturation theory and related studies have primarily focused on populations that immigrate and acculturate to the host country but little attention has been paid to immigrant populations that reside in ethnic enclaves- areas where the vast majority of resident are from the same ethnic group (Schwartz et al. 2013). This point applies to the sample of mothers and grandmothers taking part in the qualitative study of the thesis. All mothers and grandmothers came from such enclaves and it is suggested that in such environments, communities may retain the heritage culture without acquiring the practices, values or identification of, the receiving society (Schwartz et al. 2013). This may explain why the influence of acculturation was not pronounced in the sub-groups and may explain maintenance of culture within the individual sub-groups (creating micro-cultures) rather than between the IPAB groups and the host culture of the UK. An example of this is the practice of administering prelacteal feeds. For Muslim communities (predominantly from the Pakistani and Bangladeshi communities) giving 'ghutti' (a prelacteal feed) has a religious basis but for many non-Muslim communities (predominantly from the Indian sub group) this was seen as a cultural practice. It could be that over a prolonged period of time these sub groups cultural and religious practices and teachings have merged with each other hence why no distinct differences were found in the framework analysis of the mothers and grandmothers accounts.

7.5.2 Implications of the findings

The discussions in this chapter highlight the real tensions experienced by mothers from the South Asian community. Mothers grow up with the 'breast is best' messages but infant feeding choice

is largely governed by the societal and cultural context within which mothers reside. In many circumstances, this context is incompatible with breastfeeding the baby (i.e. breastfeeding). An understanding of this milieu is the building block of future work to support these mothers to exclusively breastfeed their babies.

Discarding colostrum has been highlighted in previous research (e.g. Littler, 1997), but whether such practices still occurred and the reasons behind such behaviours needed further exploration. The current chapter contributes to this understanding by demonstrating the practices as ingrained in the South Asian culture. Discarding colostrum is a culturally relevant behaviour across all three sub-groups. It is something that is taught throughout the generations and is founded on the negative perceptions of colostrum as something that is dirty, old and 'nazar ka dood'.

Prelacteal feeds have been cited as practices in the South Asian literature and exist in commentaries about infant feeding amongst South Asian sub-groups in the UK. However, little research existed about giving ghutti from the perspectives of the mothers and grandmothers from the South Asian sub-group. Giving ghutti is a religious practice for many Pakistani and Bangladeshi mothers; prescribed by Islam as something that should be given to new-borns. Indian mothers also engage in giving prelacteal feeds however this was a culturally prescribed behaviour for these mothers, something that was passed down the generations rather than a religiously based practice. For the majority of mothers, it is important to preserve the religious and cultural basis of infant feeding. The challenge lays with health professionals in promoting the importance of initiating breastfeeding and breastfeeding exclusively when competing religious and cultural teachings about infant feeding may not always complement the messages they provide.

The literature has long established that the process of acculturation is detrimental for breastfeeding rates for many sub-groups immigrating to the US (Ahluwalia, et al. 2012). Very little research has focused on the acculturation process in the UK and its impact on infant feeding.

Choudhry and Wallace (2012) explored this in the UK with Pakistani mothers and found that those mothers that were highly acculturated to the UK used the bottle-feeding norm of the UK as a reference point for their own infant feeding practices. Amongst these mothers there was a need to fit into the UK society. Such findings were not echoed by the mothers in the sample. The majority of the mothers agreed that the acculturation scale did not fit in with the questions of infant feeding and could not understand what importance it had to their experiences. Exploring acculturation qualitatively, through the interviews was suited better to the mothers and grandmothers. This emphasised the importance of exploring the acculturation process qualitatively with the mothers and exploring how the process may impact on their infant feeding behaviours. Given that there is consistent acknowledgement in the literature that acculturation is detrimental to breastfeeding rates (Ahluwalia et al. 2012), future work may benefit from devising specific acculturation scales for infant feeding behaviours. Such scales would not then seem alien when talking to mothers about their infant feeding practices and experiences as current scales do.

Acculturation theory traditionally has focused on the acculturation process of the minority population to the majority white population. Less attention has been paid to those individual sub-groups that live in close proximity with each other. Consideration needs to be paid to the context that mothers live in, which could have more of an impact than the UK culture as a whole. These mothers stated they had little contact with mothers from the White population, and so the process of acculturating for these sub-groups may be occurring at a local level in line with local South Asian culture rather than at a national level in line with the White population.

An interesting point to raise is the contrasting perceptions of the role of the mother-in-law/grandmothers in providing information on infant feeding to mother. Most mothers cited the grandmother as a key source of information regarding infant feeding however the majority of grandmothers did not perceive their role as such. This will be discussed in further detail in relation to the implications for breastfeeding support amongst these mothers.

An important aspect of the study design was the decision about the time frame for the research (Ritchie and Lewis 2003), which was dependent on the completion of the secondary analysis and the scoping review, as the findings informed the interview schedule development. The interviews including those for the pilot study were conducted between February and May 2016. This time was the lead up to the EU referendum and there was more public interest and concern about immigration. This context may have had an impact on the mothers, as there was, as mentioned previously in this chapter, concerns about their information being shared with the home office and them being 'sent back home'. Thus, researchers have a responsibility to understand the whole context within which individuals participate in a given research study. Concerns may not be related to the immediate study, but there may concerns in the wider context that may have an impact on a study that researchers may not be aware of if an open dialogue is not fostered.

7.5.3 Quality in Qualitative research

The quality or credibility of qualitative research can be assessed in terms of validity, reliability and generalisability (Leung 2015).

Evaluating the quality of research is essential if findings are to be implemented into practice (Noble and Smith 2015). It is imperative that all qualitative researchers incorporate strategies to enhance the quality of a study during the research design and implementation (Noble and Smith 2015). Although the concepts of reliability and validity are typically applied to and assessed within quantitative research, there is recognition that qualitative research should demonstrate findings that are sustainable and well grounded (Ritchie and Spencer 2003). The application of reliability and validity of qualitative methods has attracted criticism, due to the origins being from the positivist paradigm and used to judge the quality of research that is founded on a different paradigm.This led to new terms such as 'trustworthiness' (Lincoln and Guba 1986) emerging for what were essentially references to reliability and validity. The debate about whether positivist terms such as reliability and validity should be applied to judging the quality of qualitative research is an interesting one but is beyond the scope of the thesis. The debate that needs attention and is important for this thesis is *how* reliability and validity should be viewed in qualitative research and more importantly how it should be demonstrated. The work of Noble and Smith (2015) has proved a valuable resource in moving away from the discussion about reliability and validity generally and more towards how research can demonstrate these concepts.

Reliability in this thesis is taken to demonstrate the consistency of the analytical procedures (Noble and Smith 2015), including accounting for personal and research method biases that may have had an influence on the findings.

Validity refers to the precision in which the findings accurately reflect the data obtained (Noble and Smith 2015). Unlike quantitative researchers who apply statistical methods to establish reliability and validity,qualitative researchers aim to incorporate methodological strategies to ensure the trustworthiness of their findings (Noble and Smith 2015). What follows is a discussion of strategies reported by Noble and Smith (2015) and Morse et al. (2002) that have been adopted in the current thesis to help demonstrate the reliability and validity of the findings obtained.

A reflexive approach was taken when conducting the interviews. Any personal biases were accounted for that may have influenced the collection or interpretation of the findings in any way. Record keeping was key during the data collection and the analysis process. Decisions about how data were coded, and themes categorised were transparent. Discussions with supervision team members throughout the data collection and analysis process aided this transparency and consistency and served to reduce researcher bias. Rich descriptions of participants account to support the findings enhanced the credibility of the data (Noble and Smith 2015).

Respondent validation is a key strategy to enhance reliability and validity of research findings (Long and Johnson 2000). However, all the participants in the study had no interest in having their transcripts sent back to them along with the themes that were created to capture the phenomena. To address this barrier, the researcher, verbally communicated the key issues that were discussed in each interview with each participant. This ensured that the true essence of the phenomena of infant feeding experiences and practices were captured and validated by the participants themselves.

Criticism about generalisability in qualitative research is considered complicated and controversial as in many cases the main aim of qualitative research is to provide a rich context-specific understanding of the human experience rather than generalisations for the wider population (El Hussein et al. 2014). Whether findings from a study can be applied beyond the

context of the study is an important issue in research,however, this has divided those working in the field of qualitative research. Some researchers posit that generalisability can never be attained in qualitative research, as by its very nature it is it is embedded in the context of the individuals' own experiences and values. Whereas others believe that qualitative research allows capturing concepts and theories that are not unique to participants or settings (Polit and Beck 2010). This way of thinking suggests that qualitative findings are especially suitable for inference (Polit and Beck 2010). The generalisability of qualitative findings refers to whether the findings can be applied to other settings and contexts (Noble and Smith 2015).

It is difficult to say whether these findings would be found in the parent population from which the sample of mothers and grandmothers have been derived, particularly as South Asian sub-groups are heterogenous (Bhopal 1997). The South Asian mothers were living in ethnic encalves and thus results may differ for individuals that are not living in such areas. The results do resonate with the findings of similar work done in the area in South Asia (Sharma and Byrne 2017), the authors own work (Choudhry and Wallace 2012) and older studies looking at issues such as discarding colostrum in these sub-groups (Littler 1997, Burton and Jeangros 1995). Further work is required to explore whether these experiences are echoed in other South Asian populations living in the UK.

Further, mothers and grandmothers were recruited because they willingly were attending postnatal sessions at the children centres or sessions run specifically to cater to their needs. What about those mothers or grandmothers who are unlikely to attend such sessions? Non-attenders are a very interesting group and may differ in their responses to those that took part in the study.

7.5.4 Limitations

Given the findings in Chapter 3 and 4 about differences in infant feeding practices a crucial point that needs attention is the similarities and differences amongst the three sub-groups and between the UK and Non-UK born sub-group. It was anticipated that the results of the qualitative strand would be presented by individual sub- group (i.e. IPAB). However, the sample sizes were too small to be able to infer similarities and differences amongst the sub-groups. Further, there were no clear, consistent differences amongst the sub-groups. Going back to the setting of the research, the three sub- groups, particularly Indian and Pakistani lived in close proximity and the exchange of cultural and religious teachings may have been a reason for this lack of difference. For example, giving ghutti has a religious basis for Muslim women (all of whom were from the Pakistani and Bangladeshi sub-groups in this study) however for non-Muslim women, from the Indian sub-group, it was a practice that held some cultural significance. It could be over time that the sub-groups in this community have assimilated to have similar practices that are based on culture/religion.

As with others before this study (Premji et al. 2014), mothers often answered with minimum words (even when the interview was conducted in the mother's language of choice). Mothers struggled to answer broad questions, and like Premji and colleagues (2014) mothers needed questions to be rephrased and more precise, and it was often challenging to encourage mothers to express themselves. Such difficulties in expression may stem from the fact that within the South Asian culture it is not customary to talk about personal issues and the family context.

Mothers also voiced some concerns about how the data was to be used. This was more prevalent in those born outside the UK. There was a concern that if they could not speak English, then they would be reported to the authorities and sent back to 'their countries'. This concern may also explain why mothers that were interviewed were less likely to access postnatal care at the children centres.

It was anticipated that the hardest to reach group would be the non-UK mothers. However, because the interviews could be conducted in the language choice of the mother, it encouraged participation from this sub-group. Of the three sub-groups involved in the interviews, the lowest numbers were in the Bangladeshi group and those born in the UK. This was in part due to the local demographic but also because the researcher was unable to speak Bangladeshi and thus was unable to cater to the needs to non-English speaking Bangladeshi mothers. Given that Bangladeshi mothers are at a disadvantage from reduced rates of breastfeeding it is imperative to understand further what factors facilitate and inhibit optimal breastfeeding in this sub-group. Previous research has shown that discarding colostrum is commonly practised amongst this sub-group (e.g. Littler 1997).

Selection bias was unavoidable for the qualitative aspect of the thesis. Only mothers who were visiting the children centres and the grandmothers visiting the centre that held an event every month for them were interviewed. These sub-groups are likely to behave very differently to those mothers and grandmothers that do not access such services. To overcome such selection bias a snowballing approach was adopted where mothers identified other potentially eligible mothers for the study. This was not a successful approach. Only two eligible mothers were identified this way but were not able to take part in the study (due to personal reasons). It is important to understand the behaviours of those sub-groups that are least likely to access services and may be at more of a disadvantage regarding breastfeeding outcomes. It is important to understand the hesitancies of participants not taking part in research which may be realised in the initial conversations when approaching mothers to take part in research.

It has been found that breastfeeding is more likely in communities where there is a high prevalence of ethnic minorities (Griffiths et al. 2007). Mothers and Grandmothers that took part in the qualitative enquiry came from such wards. Whether the findings of the qualitative enquiry relate to those mothers from other areas of the country and whether they have similar beliefs and practices and infant feeding behaviours remains to be explored.

7.6 What this chapter adds

- An in-depth knowledge of the infant feeding beliefs and experiences of IPAB mothers and grandmothers living in the UK.
- Cultural practices have been highlighted such as discarding colostrum, getting baby used to the bottle, Pardah and administering prelacteal feeds all of which inhibited mothers from breastfeeding their babies.
- Immigrant mothers lose family support upon arrival to the UK, support that was perceived to be encouraging of breastfeeding.

7.7 Conclusion

This chapter has presented the findings of the framework analysis of the mothers' and grandmothers' interviews and focus group exploring infant feeding beliefs, experiences and practices. An in-depth understanding has been put forward that shows the conflicting messages and tensions that mothers are faced with when feeding their babies. The breast is best message is a well-known cultural message however there are other teachings in the religions and culture of IPAB mothers that dilute this message and encourage bottle feeding. Practices such as discarding colostrum, administering prelacteal feeds and preserving Pardah are ingrained in the culture of the mothers and infant feeding choices are affected by such practices. Bottle feeding is seen as an inevitable choice for many mothers. The right education and support may help to promote and sustain breastfeeding in these communities if the information is tailored to the cultural environment within which infant feeding takes place.

7.8 Chapter Summary

The chapter presented the findings of the framework analysis of the mothers' and grandmothers' accounts of infant feeding. These findings were understood by using Hector and colleagues' (2005) framework which highlighted a multitude of factors at the individual, group and societal level that influence infant feeding amongst the above sub-groups. The next chapter discusses how mothers from the IPAB sub-groups can be supported to optimally feed their babies.

8 Infant feeding support for Indian, Pakistani and Bangladeshi mothers: Where are we now and where do we need to go?

8.1 Chapter overview

The scoping review and the qualitative work have highlighted some culturally based teachings that can impact on successful breastfeeding amongst IPAB mothers. The next step in ensuring the optimal feeding of IPAB infants is to consider how the learning from earlier chapters of the thesis can be applied to intervention development. Before discussing some recommendations for how future work could support breastfeeding amongst the above sub-groups, it is important to highlight some of the existing services that may already be available to these sub-groups. A summary of existing services/interventions as reported by the existing literature will be presented. Some of the strengths and limitations of these services will be discussed. A discussion of a local service available to the mothers taking part in the qualitative enquiry of the thesis will be presented. The qualitative findings from Chapter will be discussed in terms of what mothers have said they would like to see from a breastfeeding support service or intervention. It is hoped that collectively this will build a picture of some of the gaps that exist in infant feeding support for mothers from the IPAB communities in the UK.

The above findings are then reviewed within the context of the REPLACE approach (Barrett et al. 2015); a framework for the design, implementation and evaluation of high quality interventions. The approach was used successfully in relation to tackling Female genital mutilation within a community setting and its applications have merit in addressing infant feeding practices in the South Asian community. Central to this approach is the combining of behaviour change theories with community engagement (Barrett et al. 2015). Its application for addressing

infant feeding practices amongst South Asian mothers will be discussed later in the chapter. This chapter is the first attempt to define the next steps for a theory based behaviour change intervention that meets the needs of IPAB mothers living in the UK.

8.2 Introduction

8.2.1 The need for tailored health interventions for ethnic minorities

Ethnic diversity is now common in most economically developed societies and this trend is expected to continue (Liu et al. 2012). The latest release from the Office for National statistics (ONS) reveals that England and Wales is becoming more ethnically diverse with rising numbers of people identifying with minority ethnic groups (ONS 2015). For example, the Indian sub-group was one of the largest ethnic groups (1.4 million, 2.5%) followed by the Pakistani sub-group (2.0%). South Asian countries (India, Pakistan and Bangladesh) continue to rank highly within the non-UK countries of birth (ONS 2015).

There is a lack of research and tailored interventions addressing specific maternity interventions for Black and Minority Ethnic women in the UK (Garcia et al. 2015). This lack of research is even more apparent for mothers from the South Asian sub-groups. Pakistani and Bangladeshi mothers have reported poorer experience of maternity care (postnatal care) than White mothers (Henderson, Gao and Redshaw 2013). The findings from the qualitative enquiry of the thesis and the scoping review reveal culturally specific beliefs and customs around giving birth, specific beliefs about what constitutes ‘good milk’, beliefs around discarding colostrum, administering prelacteal feeds and the experience and power of the family environment and maternal/paternal grandmothers’ influences on infant feeding behaviours that exist within the South Asian culture. Maternity services do not specifically address the culturally distinct needs (as highlighted above) of mothers such as those from the South Asian sub-group (Garcia, et al. 2015).There is, therefore

a strong rationale to understand the breastfeeding support needs of these sub-groups of the population. Engaging with both mothers and grandmothers (and the wider community) about the importance of breastfeeding for babies is a first step. Ensuring grandmothers are given the right information about the benefits of breastfeeding and that they are relaying positive support to mothers about breastfeeding is key. Widening understanding of specific cultural barriers and how to overcome them is needed.

This chapter aims to explore how the findings learned from earlier chapters can be best utilised to support exclusive breastfeed in line with WHO recommendations (WHO 2003). The specific aim of this chapter is to addresses aim five, as outlined in Chapter 1 with the following research questions;

> *"What interventions have been developed IPAB mothers to support their infant feeding behaviours?"*
>
> And
>
> *"What would a suitable breastfeeding support tool/intervention look like?*

8.2.2 Descriptive summary of existing interventions or support services for South Asian mothers in the UK

Many interventions have been developed to support breastfeeding initiation and exclusivity and have been synthesised in systematic reviews and meta analyses (e.g. Dyson, McCormick and Renfrew 2005, Haroon et al. 2013, Sankar et al. 2015, Rollins et al. 2016). The effectiveness of these interventions in improving breastfeeding initiation and exclusivity behaviours for ethnic minorities, particularly South Asian mothers is yet to be explored. There is also a lack of detailed information and evidence on how to adapt existing breastfeeding interventions to best meet the needs of ethnic minority populations (Liu et al. 2012).

A search of the literature was conducted to find papers reporting on breastfeeding support services or interventions for South Asian mothers. MeSH terms and keywords in various combinations were used. No date restrictions were applied. An English language filter and a UK only filter were applied. Table 29 presents the search strategy used.

Table 29-The search strategy applied to find studies reporting on breastfeeding services and interventions to support breastfeeding amongst South Asian mothers.

Sample *AND*	South Asian or Indian or Pakistani or Bangladeshi or Black and Minority ethnic groups or Ethnic groups
Phenomenon of interest *AND*	Infant feeding or Breastfeeding or Bottle feeding or Formula feeding or Mix feeding or Prelacteal or Colostrum
Evaluation	Support or services or intervention

The search revealed three papers (ranging from 2006-2012) reporting specifically on services or interventions to support breastfeeding tailored to the needs of South Asian mothers in the UK. Given that there have been several studies highlighting barriers to exclusive breastfeeding in this sub-group, the number of tailored interventions is surprising. It is acknowledged the number of papers is only a reflection of those published in peer review articles and does not necessarily reflect the services provided for South Asian mothers across the UK. Of the three papers identified, only one reports on a tailored intervention to support breastfeeding amongst the sub-group (Ingram, Johnson and Hamid 2008) while two (Ahmed et al. 2006, and Douglas 2012) report the redesign of existing services.

Ahmed et al. (2006) report on a bilingual peer support programme based in a sure start centre in Tower Hamlets. The authors recognised that there were low rates of breastfeeding, and considerable differences amongst Bangladeshi mothers' intentions to breastfeed and their actual breastfeeding behaviours. One reason suggested by the authors was that non-English speaking Bangladeshi mothers were experiencing a breakdown in communication as the original programme was delivered in English but could not be understood by those sub-groups unable to speak or understand English. In response to this, a programme was developed to provide extra breastfeeding support and education in Bengali. The programme involved two specialist midwives providing training and supervision to a bilingual Bangladeshi breastfeeding supporter. The support service had provided breastfeeding support to 194 between September 2001 and August 2002. Although the content of the support service is not documented in the paper, the findings from Bangladeshi mothers (n=15) suggest that the bilingual support programme was received well, often the support worker was cited as the 'most helpful' in terms of breastfeeding. The study was not robust enough to statistically assess the impact of the programme on breastfeeding behaviours.

Douglas (2012) aimed to redesign current breastfeeding provision in Oxford to meet the needs of South Asian families. The redesign did not include the opinions of the service user but was in response to poor uptake of antenatal breastfeeding information services from Pakistani and Bangladeshi mothers. The support service did include several home visits to South Asian families with a view to increase breastfeeding rates. Information on breastfeeding status at initiation and at 6 weeks was collected. A pre-and post-test was given to mothers and their mothers-in-law to assess knowledge and understanding of breastfeeding, the benefits of breastfeeding, benefits of formula, skin to skin, colostrum, practical knowledge and where to get support (Douglas 2012). The pre-and post-knowledge scores indicated an increase in knowledge and understanding of breastfeeding (Douglas 2012). Total aggregate scores increased from 26.33 to 36.77 for

knowledge about breastfeeding. The pre-and post-test results need to be interpreted with caution, because of the 11 families who completed the pilot, 9 completed the post-test questionnaires, however these were not all the same families as the pre-tests. The service did not increase breastfeeding rates with most mothers continuing to mix feed.

It has been suggested that to adapt an intervention for ethnic minority populations such as those from the South Asian community the intervention needs to be appropriate to the target population (Liu et al. 2012), and the way this is achieved needs documenting. However, such information is omitted from those studies mentioned above that have redesigned existing breastfeeding support services. The fundamental rationale for undertaking adaptation of interventions is that most research underpinning the field of health promotion has been undertaken primarily in White European-origin populations, with ethnic minorities rarely being studied or considered (Liu et al. 2012). Thus, aspects of health promotion interventions may not be optimised, suitable or even appropriate for ethnic minority populations. This is applicable to breastfeeding research where most studies to understand the facilitators and barriers to optimal breastfeeding behaviours are based on findings from the White population. Adaptation of existing interventions or services is said to relate to the '*extent to which ethnic/cultural characteristics, experiences, norms, values, behavioural patterns and beliefs of a target population as well as relevant historical, environmental and social forces are incorporated in the design, delivery and evaluation of targeted health promotion materials and program*' (Liu et al. 2012:5). It is not enough to assume that translation of a service will meet the needs of South Asian mothers accessing breastfeeding support services. There were no reports of consulting with mothers or service users in any of the studies described above, even though an understanding of the needs of the target population is imperative for any adapted existing intervention or service to be effective.

Given the central role that grandmothers may play in infant feeding choices it is of interest to include them in any interventions to support mothers in their infant feeding choices and behaviours. Ingram, Johnson and Hamid (2006) report on the development of an antenatal intervention for grandmothers to support their breastfeeding daughters/daughters-in-law. It is unclear whether this intervention was informed by and based on the needs of the South Asian mothers taking part. The session was based around a leaflet specifically written for grandmothers to help them support their daughters/in-law. The leaflet covered health benefits of breastfeeding, good positioning and attachment, feed management, and how families can support breastfeeding mothers (Ingram, Johnson and Hamid 2006). In addition to the leaflet there was a demonstration of good breastfeeding positioning and attachment using a doll and where to feed comfortably at home (Ingram, Johnson and Hamid 2006). The intervention was well received by both mothers and grandmothers. Changes that were reported through interviews with grandmothers were that babies had been given colostrum, whereas previous babies in the family had not, others reported not giving the baby bottle or only one or two bottles of artificial milk had been given and that without the session babies would have been given more (Ingram, Johnson and Hamid 2006). The work of Ingram, Johnson and Hamid (2006) is promising and highlights the potential for a tailored intervention that addresses the needs of South Asian mothers and grandmothers. This complements the findings of the qualitative date from the thesis, grandmothers play a key role in informing infant feeding decisions and may be one of the primary sources of support for mothers from the South Asian community. A couple of points need consideration when interpreting the findings of Ingram and colleagues. Overall, 95% of the grandmothers had breastfed their own children and 76% of their grandchildren were breast fed. Whether being 'breast fed' referred to breastfeeding initiation, maintenance or exclusivity is not clarified by the authors, but it is apparent that the mothers and grandmothers demonstrated breastfeeding behaviours. This was also confirmed by the authors; it was stated that pre-intervention the mothers were enthusiastic about breastfeeding (Ingram, Johnson and Hamid, 2006). It remains to be explored whether such an intervention would be received just as well with different sub-groups of grandmothers and

mothers that may not necessarily be as enthusiastic about breastfeeding as the sample in the above study.

The intervention described above was designed for mother and grandmother pairs. However, in this thesis the qualitative enquiry suggested that mothers were reluctant to involve their mothers-in-law in research around infant feeding, suggesting that this approach may not be suited to all South Asian mothers. Ingram and colleagues (2006) do not report interviewing mothers, it would have been of interest to understand how the intervention was received from the mothers' perspective, particularly as cultural factors have been voiced by mothers that have not been explored by Ingram and colleagues. Whether such an intervention would address cultural factors such as the contrast between the pro-breastfeeding messages of Islam and the cultural teachings that surround the role of the daughter in law (Choudhry and Wallace 2012, Anwar and Wallace 2013), discarding colostrum, administering prelacteal feeds and the practice of Pardah (modesty) highlighted by the qualitative enquiry of the thesis and others in the literature (Condon et al. 2003) needs further exploration.

It can be concluded that there is very limited literature on how best to support mothers from the South Asian sub-group to effectively feed their infants. Simply redesigning an existing support service is unlikely to be effective if it does not meet the needs of the service users it serves. The three articles are dated and do not address the contemporary social and cultural issues that have been highlighted in this thesis and by others such as Sharma and Byrne (2016) that have an impact on infant feeding practices of South Asian mothers. Further, what is clear from the limited studies that have reported on interventions or services to support infant feeding amongst South Asian mothers is that they are not informed by appropriate theory, and do not report on the process adopted in developing the support tool/intervention or the steps taken to design the services. If an intervention shows promise, the steps taken to design and implement them need to be clearly articulated so that others can learn from them. This is something that is lacking and needs to be addressed in future work.

8.2.3 Existing service in the local area designed to meet the needs of local South Asian mothers

Before discussing what a suitable breastfeeding intervention may look like, it is important to consider the existing service in the local area already available to South Asian mothers. A third sector organisation is specifically commissioned by the local PCT to improve child and maternal health outcomes for Black and Minority ethnic women in the local area. The staff at the organisation provide antenatal clinics, postnatal clinics, parent craft sessions and work in partnership with midwives, health visiting teams and other health professionals in educating women on key messages around child and maternal health. It has been received positively from individuals in the local community. Two of the mothers in the sample had used the service and had found it positively influenced their breastfeeding practices. However, the majority of the sample were unaware of the service available to them. This service does not currently provide information on colostrum and the potential detrimental effect of administering prelacteal feeds to new-borns. Thus, this service could include such information to cater to the needs of the South Asian mothers in the local area.

The needs of IPAB mothers still need to be addressed by existing services in terms of beliefs around discarding colostrum, prelacteal feeds and '*getting baby used to the bottle'*. Existing services are not being accessed universally so it is imperative to learn what barriers exist for mothers to access services. The qualitative data suggest that mothers use family members, particularly mothers-in-law as sources of support. Thus, mothers-in-law could be a vehicle for communicating the benefits of breastfeeding and encouraging optimal feeding practices. This can only be done once they are educated on some of the strong cultural teachings that impinge on successful breastfeeding behaviours.

8.2.4 Findings from the qualitative mothers' and grandmother's interviews regarding support services accessed and the support that mothers would like to receive

For any intervention to be effective in achieving the desired outcomes it needs to be informed by the needs of the service users.

Below findings and recommendations are discussed based on the 'what.' What does a suitable intervention for South Asian mothers need to include to address the factors that inhibit mothers from this sub-group from exclusively breastfeeding. As highlighted in appendix 3, the topic guide also asked mothers about the existing services that they had used and what kind of support tool or intervention would optimally support exclusive breastfeeding amongst mothers like themselves.

The data from the mothers' and grandmothers' interviews revealed rich accounts of the facilitators and barriers to exclusively breastfeeding in the South Asian cultural context. Motivations to bottle feed, discarding colostrum, administering prelacteal feeds and Pardah (modesty) were some of the major barriers to exclusive breastfeeding reported by both grandmothers and mothers as highlighted in chapter 7.

Educating mothers about the role of colostrum and its many benefits for the baby may help address sub-optimal infant feeding practices. Gaining a deeper understanding of religious or other motivations for prelacteal feeds will be important to ensure that any intervention is sensitive to those deeply held beliefs. The issue of 'Pardah' needs to be considered carefully in the context of breastfeeding support and in the process of intervention development; breastfeeding for some mothers was a 'closed' subject something that is not spoken about. The modesty extended beyond just the physical modesty around not breastfeeding in front of others. Mothers found it difficult to discuss the subject with people not known to them. Opening the dialogue about breastfeeding amongst South Asian mothers is crucial for any intervention tool to be effective in supporting

optimal breastfeeding. Therefore, creating an environment where it is safe to discuss breastfeeding is paramount for effective engagement and for the potential effectiveness of a breastfeeding support intervention. This will require a sensitive, community-wide approach, where elders in the community are engaged and some of the beliefs that surround infant feeding are addressed.

The vehicle with which this support needs to be delivered to mothers is an important question that needs consideration. Only a small minority of mothers had accessed antenatal classes or any sort of infant feeding support. When mothers faced difficulties, they would opt to bottle feed their babies. Almost all mothers stated that their main source of support was the family unit, particularly their mothers, mothers-in-law and occasionally sisters.

A contrasting issue that arose from the interview data was how the mothers-in-law and mothers viewed the grandmother's role in informing infant feeding decisions. All mothers cited the powerful role of their mothers-in-law on infant feeding decision, and were heavily guided by the advice that they gave (even if this advice was not always the most appropriate to follow regarding infant feeding). However, mothers-in-law reported not feeling confident in broaching the subject of infant feeding with their daughters-in-law. Such a distinction stems partly from the family set up. Most of the mothers-in-law were not living with their daughters-in-law (in the traditional family set up) and thus found it more difficult to engage in the discussion about infant feeding.

If mothers have made the decision to breastfeed they need to be equipped with the skills to open conversations, and challenge (in an appropriate manner) the opposing views of other family members, that may tell them otherwise. Grandmothers need to be equipped with the right knowledge and skills to support their daughters-in-law in making optimal infant feeding choices and engaging in an open dialogue about breastfeeding.

Some work with Bangladeshi mothers concluded that the breastfeeding experiences of women of Bangladeshi origin were largely similar to those of many women in the UK (McFadden, Renfrew and Atkins 2012). However, our qualitative findings show that there are very specific cultural teachings that may be impacting on breastfeeding experiences and behaviours. Thus, for any intervention to be successful, it is imperative to understand these teachings and how they may be addressed in interventions to support optimal breastfeeding behaviours.

8.2.5 Future Research: defining the next steps for developing a tailored intervention.

At the time of writing this chapter, a bid was submitted to the Medical Research Council's Public Health Intervention Development (PHIND) scheme. The bid was based on the findings of this thesis, and aimed to do early phase work in developing a suitable intervention to support IPAB mothers infant feeding. The bid was in collaboration with the local organisation (mentioned in the methods section) that support Black and minority ethnic groups in the city and supported the research conducted for the thesis. Discussions were had with local organisations that had extensive experience in working with the sub-groups and with a team at Coventry University (including the author) in a bid to understand what the most appropriate way to support these mothers would be. Given the findings of the thesis and the experience of the local organisation it was concluded that an intervention that involves the community would be appropriate given that most of the cultural teachings inhibiting breastfeeding were transmitted and reinforced at the community level.

It is clear from the findings of the thesis (in particular from the scoping review and the qualitative findings reported in chapters 5 and 7 respectively) that the cultural context and the transmission of the cultural teachings within the South Asian communities plays a key role in infant feeding for South Asian mothers. However, such contexts are given little attention to by health behaviour theories described in chapter 1. In chapter 1, theories were introduced that have been used to help

understand health behaviours and in particular breastfeeding. It has been well documented that attitude, subjective norms, perceived behavioural control and intention to breastfeed are strong predictors of breastfeeding. However, as mentioned in chapter 1 a weakness of such theories in their application to infant feeding behaviours in South Asian populations is that there is little recognition of the role of the cultural context and how this may impact on infant feeding behaviours. It has been shown in the literature (e.g. Sharma and Byrne, 2016) and by the findings of the scoping review and qualitative findings that there are specific cultural and religious practices that may impede optimal infant feeding amongst Indian, Pakistani and Bangladeshi mothers. Theories such as the most commonly applied theory of behaviour change to breastfeeding behaviours; the theory of planned behaviour focuses very little on how the cultural context such as that experienced by South Asian mothers can be incorporated and addressed in interventions to optimise infant feeding. Fundamentally the aims of a potential intervention to support infant feeding practices in this sub-group are to increase breastfeeding initiation rates and exclusivity via addressing key cultural beliefs and practices that may impact such behaviours. Practices and beliefs that are rooted within strong cultural foundations such as perceptions that baby does not like breast milk, getting baby used to the bottle, discarding colostrum and administering prelacteal feeds need addressing if breastfeeding is to be supported amongst these sub-groups. Optimal breastfeeding requires maternal choice combined with the ability to action that choice (WHO 2003). However, as has been demonstrated in this thesis and other studies exploring barriers to breastfeeding, that this is not always possible. In relation to the findings of the qualitative findings of the thesis, not all mothers were able to exercise their choice to breastfeed their baby due to the social and cultural demands on them (for example teachings around discarding colostrum, administering prelacteal feeds, preserving Pardah and getting baby used to the bottle). The cultural teachings or expectations would be a key area to address in supporting mothers from the South Asian community. Taking a community approach, involving community leaders, social support networks, health professionals and community members in breastfeeding promotion and support provides a way of ‘shifting cultural knowledge, norms and

expectations' (WHO 2003). Such an approach is thought to be needed if cultural norms of discarding colostrum and administering prelacteal feeds and other misconceptions surrounding bottle feeding the baby are to be addressed. Such an approach is needed but is lacking from traditional health behaviour change models such as the theory of planned behaviour (described in Chapter one). The author was aware of some work conducted by colleagues using the REPLACE approach to tackle Female Genital Mutilation. At the heart of this approach is the community and an appreciation of the cultural and community context when addressing certain practices within a certain community. The author feels that this approach shows some promise in optimising infant feeding amongst the communities of IPAB origin. The REPLACE approach and its merit in application to infant feeding amongst South Asian mothers will be discussed later on in the chapter.

Craig et al. (2006) outline the stages required to develop a complex intervention which will be used as a basis for this discussion and are outlined below.

8.2.6 Identifying the evidence base

Although a literature search was conducted to find which interventions had already been developed to meet the breastfeeding support needs of South Asian mothers. It is important that a systematic review is conducted to understand the existing evidence base relevant to the intervention. Future work will also explore the grey literature which will help identify local services that have been developed in response to the breastfeeding support needs of south Asian mothers.

8.2.7 Identifying/ developing appropriate theory

An intervention based on relevant theory is more likely to result in an effective intervention (Craig et al. 2006). It is advised that a theoretical understanding of the likely process of change is developed early in the intervention development stage (Craig et al. 2006). This stage deals with the questions about what changes are expected and how this change will occur. Existing breastfeeding interventions are either lacking in the theoretical foundations or lacking discussion about how existing theory was used to design the interventions. Breastfeeding behaviours are multi-faceted, and this is more pronounced in the South Asian sub-group where there are strong cultural and social influences impinging on optimal feeding practices. Lessons can be learnt from some recent work which aimed to work with communities where female gentile mutilation (FGM) was a common practice. The project aimed to understand the barriers to eliminating FGM and to assess the appropriateness of intervention materials and awareness raising activities (Brown, Beecham and Barrett 2013). The approach employs various behaviour change theories in parallel with community engagement (Barrett et al. 2015), and is novel in that it seeks to bring about

change by empowering communities. The approach works through community leaders, influential people within the community and community peer group champions to challenge social norms around FGM (Barrett et al. 2015). The parallels between the findings from this thesis and those reported by Barrett and colleagues are that like FGM, sub-optimal breastfeeding behaviours amongst South Asian mothers are deeply rooted within the socio-cultural context within which the mothers reside and infant feeding decisions are partly determined by people other than the infants' parents (Barrett et al. 2015). Thus, taking a similar community engagement approach the goal for an intervention for South Asian mothers would be to address behaviours around discarding colostrum, administering prelacteal feeds and introducing early bottle feeds (and ultimately impact breastfeeding initiation and exclusivity outcomes). Further details about the REPLACE approach are detailed overleaf.

The REPLACE approach

Unlike other health behaviour theories that focus on factors at the individual level, the REPLACE approach adopts a holistic approach to behaviour change, allowing to address culturally rooted practices that are seen as social norms for many communities and may be enforced by social mechanisms (Barrett, 2015). The application of the approach allows addressing social and cultural teachings that surround, for example the administration of prelacteal feeds and discarding colostrum through involvement with the community; the level at which such teachings are passed down and reinforced. The approach involves a cyclic framework for 'Social Norm Transformation' which comprises five elements that represent the 'flow' of motivation and behaviour change within a community (Barrett et al. 2015). Below is a discussion of the five elements and how they could be applied to support optimal breastfeeding practices amongst South Asian mothers.

Element 1- Community engagement

Addressing the social norm that preserves certain behaviours such as discarding colostrum, and administering prelacteal feeds requires effective community engagement. Such engagement assumes that if members of a community support a social norm such as discarding colostrum or administering prelacteal feeds then they could also be the key to addressing and 'overturning' the norm (Johansen et al. 2013).

Element 2- Understanding the social norm that perpetuates discarding colostrum, administering prelacteal feeds and positive attitudes to bottle feeding

The REPLACE approach requires an understanding of the beliefs and social norms that support the continuation of behaviours that inhibit successful breastfeeding initiation and exclusivity. This is said to be essential in ensuring that the community needs are met and that they are culturally appropriate for the target group. To do so, REPLACE recommends adopting a Community-based Participatory Action Research (CPAR, Barrett et al. 2015). CPAR aids the understanding of specific belief systems that sustain cultural practices affecting suboptimal breastfeeding (such as motivations to bottle feed, discarding colostrum, and the beliefs around 'Pardah' and administering prelacteal feeds).

Element 3- Community readiness to end cultural practices that impinge on successful breastfeeding initiation and breastfeeding exclusivity

Each community and everyone within that community will be at various stages of readiness to challenge and over turn social norms (Barrett et al. 2015) such as supporting the continuation of cultural practices such as discarding colostrum, administering colostrum and the positive attitudes held towards bottle feeding. The REPLACE approach includes the community readiness component which is based on the transtheoretical

model (Prochaska and Velicer 1997). The tool used to assess community readiness can be adapted from the work of Barrett and colleagues which assesses readiness on a scale of 1 (No community awareness) to 9 (community ownership). The various stages of change have different foci within a potential intervention. Thus, the intervention components are tailored to where the community is on the stages of change continuum. For example, if a community is unaware of the cultural issues that affect breastfeeding initiation and/or exclusivity, or they are in denial about the problem, then the focus on the intervention would be to increase knowledge about such factors, increase knowledge about the health impacts of not breastfeeding infants and challenge belief systems that may support sub-optimal infant feeding practices. Those communities who are in the 'preplanning', 'preparation' or 'initiation' stages would need support in changing attitudes and initiating behaviour change concerning optimal feeding behaviours. These stages of change require an identification and support of community leaders/peer champions to encourage breastfeeding. To encourage the administration of colostrum to infants and discourage prelacteal administration. The final stages involve 'stabilisation', 'expansion' and 'community ownership'. These stages involve supporting behaviour change for optimum breastfeeding practices. The intervention at this stage would serve to reinforce community efforts to end discarding colostrum and to not give prelacteal feeds to new born babies (as an example).

Element 4- Intervention development

This element of the REPLACE approach draws upon theoretical ideas around behaviour change, readiness to change and addressing the behaviour at both the individual and community levels (Barrett et al. 2015). The intervention development approach comprises two components; (1) Identifying interventions actions with community peer

group champions and (2) Undertaking a capability, opportunity, motivation and behavioural assessment (Michie et al. 2014) of how to train, resource and support peer champions to implement the intervention actions. The premise behind the way of designing the intervention is that the intervention is hoped to be more effective as is tailored to the level of readiness of change in a community, and hence individuals it will be more receptive to it. Figure 4 summarises the components of the REPLACE approach and how each of the empirical chapters within the thesis can help define the next steps for developing an intervention for the South Asian mothers in the study. The boxes highlighted in green show where the empirical chapters can inform the elements of the REPLACE approach and the boxes highlighted in red show where further work is needed to successfully develop and evaluate an intervention based on the REPLACE approach to support infant feeding in South Asian communities.

Figure 4-A summary of how the empirical chapters of the thesis can be mapped onto the REPLACE approach to inform intervention delivery and development.

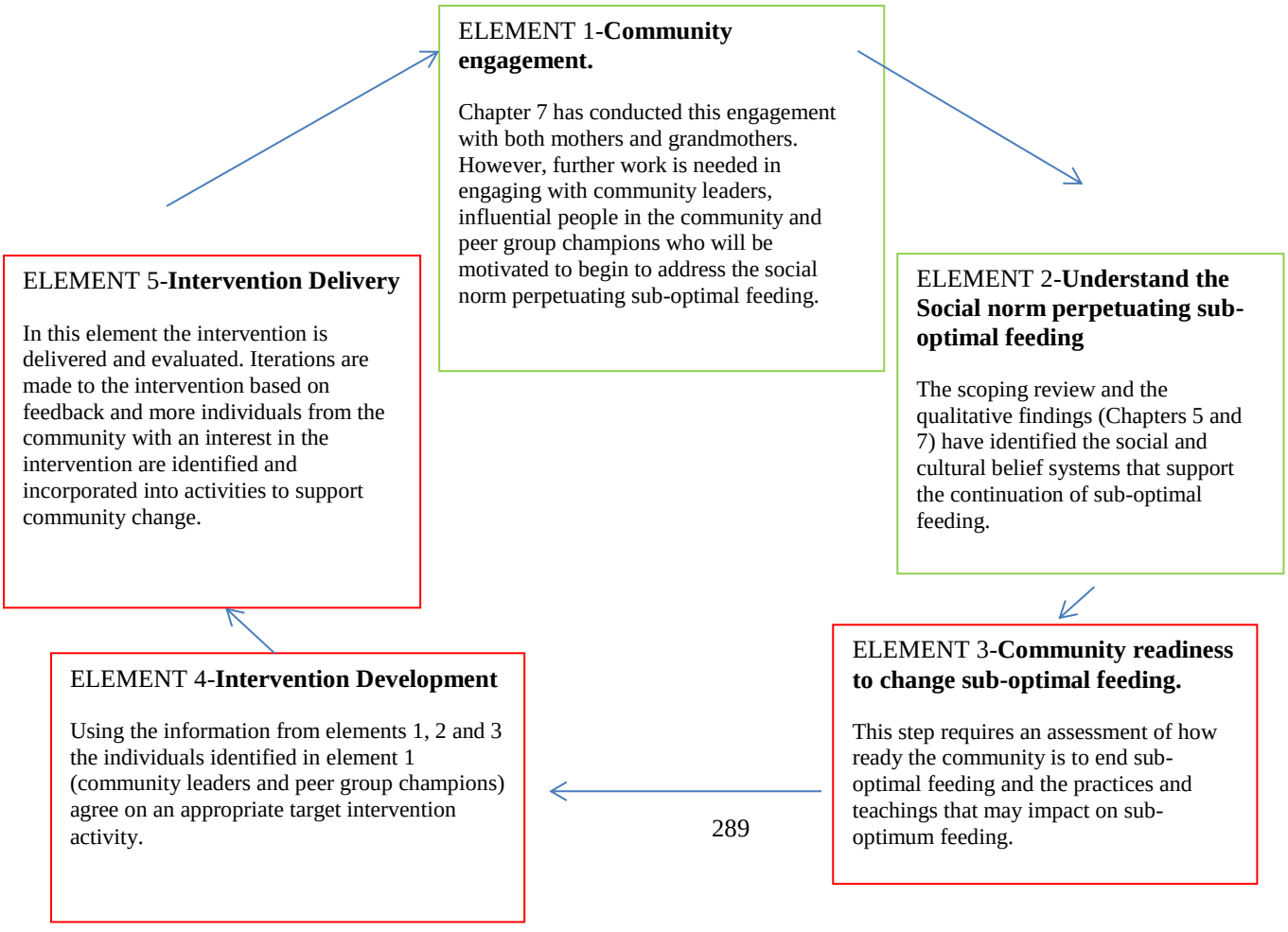


Figure 4 is a useful representation of where the thesis findings can contribute informing the development of an intervention to support infant feeding amongst IPAB mothers and where there is work still to be done in the area. Future work would need to focus on engaging with community leaders, religious leaders and peer group champions that can challenge some of the social and cultural misconceptions and norms around infant feeding practices that have been identified in chapters 5 and 7. An assessment of how ready the community is to make changes is then needed which will then all collectively help to inform the intervention development, delivery and evaluation.

8.2.8 Modelling process and outcomes

Craig and colleagues suggest the importance of modelling the intervention prior to a full-scale evaluation which can provide valuable information about the design of the intervention and the evaluation (Craig et al. 2006). Questions such as who the intervention would be used by, in what populations and settings and the potential strategies that could be employed to model the process of change and measure effectiveness need to be answered when designing an intervention and its evaluation. Craig and colleagues also describe how to assess the feasibility, piloting methods and steps to evaluate the intervention, but this is beyond the scope of the current chapter.

8.2.9 Intervention delivery and evaluation (Element 5 of the REPLACE approach)

Evaluation is a crucial part of the REPLACE approach to improve, address problems and inform future decision making about the intervention. It is an iterative process that involves the communities and organisations working with mothers to support infant feeding to '*target, adapt, implement and assess the impact of activities and interventions to ensure effective use of limited resources for maximum impact'* (Barrett et al. 2015:11). This process is based on learning what

works and is welcomed by communities/individuals and what needs improving or changing altogether.

8.3 What this Chapter adds

- The chapter identified very little breastfeeding support / breastfeeding interventions exist for IPAB mothers in the academic literature.
- The chapter is one of the first known attempts to use the REPLACE approach to provide a framework for a potential breastfeeding intervention. Discussions of the next steps for a theoretically based intervention to support breastfeeding shows promise in addressing the cultural teachings that inhibit breastfeeding for many mothers from the South Asian community.

8.4 Conclusions

A small number of published articles exist that document support tools/interventions to support South Asian mothers and their infant feeding practices. However, they are not founded on health behaviour change theory or based on a deep understanding of the needs of the target community. The social and cultural issues that may impede infant feeding behaviours of IPAB mothers are not addressed by any of the interventions found by the search conducted for the thesis. It is apparent that a lot still needs to be done both nationally and locally to meet the infant feeding support needs of the South Asian sub-groups. This chapter starts the conversation about ways in which this can be achieved through an evidence based systematic way. Something that has, until now been lacking from the literature. The REPLACE approach to addressing sub-optimal infant feeding practices (affected by discarding colostrum and administering prelacteal feeds) is a

promising approach which puts culture and community at the heart of the behaviour change process.

The next chapter brings together the findings of the thesis overall and discusses the contribution of the findings to the wider literature. The chapter closes with recommendations for future practice.

9 General Discussion

9.1 Chapter Overview

This chapter opens with a summary of how the methods were integrated and what the findings collectively mean in relation to the aims and research questions of the thesis (as presented in chapter 3, 4, 5, 7 and 8).Table 25 (in appendix 4) details the overall aims of the thesis, and each chapter that addresses that aim with the corresponding research questions. Details of the sample and methodology used to answer each research questions and the main findings of each chapter are summarised. The findings of the thesis will be interpreted within the context of the wider literature. Contributions made to the literature based on the findings of the thesis will be discussed. The chapter will conclude with recommendations for future research.

9.2 Integration of methods and summary of main findings

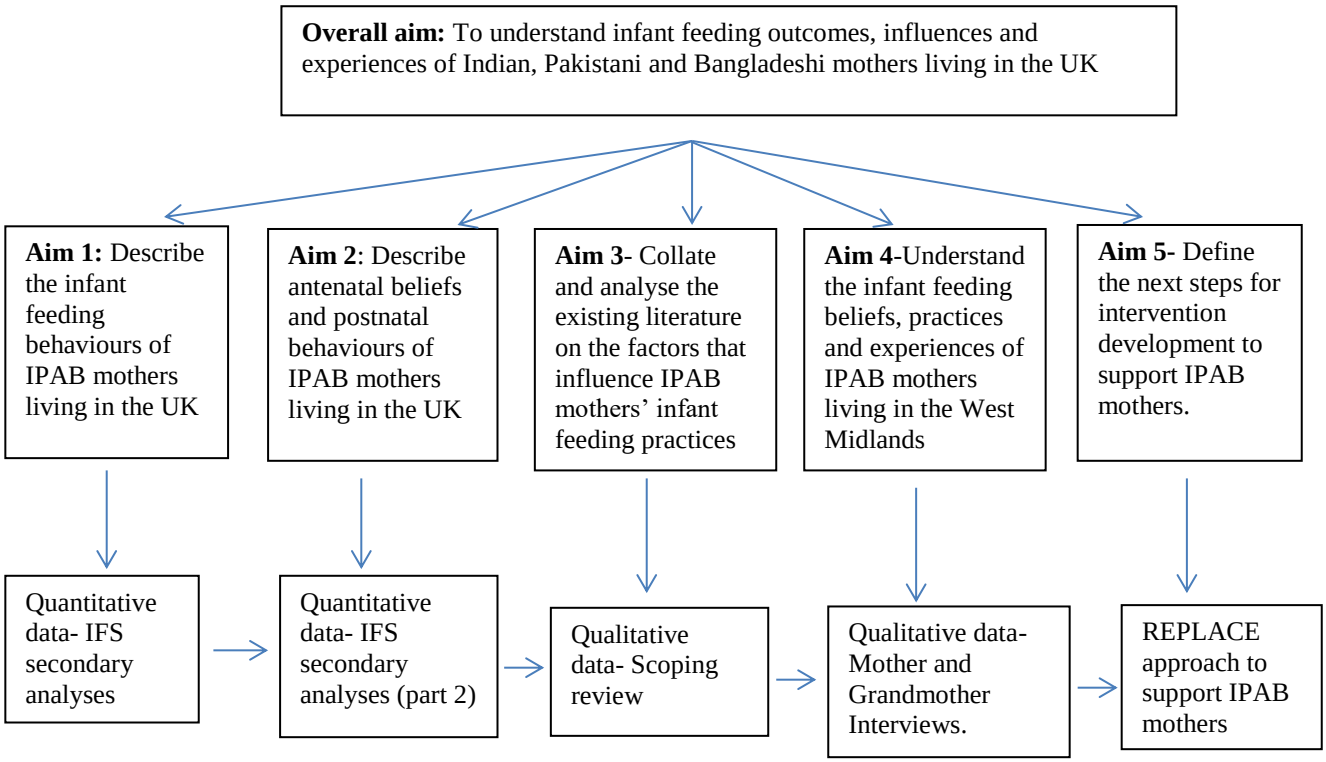
Any study adopting a mixed method approach like that adopted in the current thesis must ask whether the mixed methods approach has added value than if a single method were used (McKim, 2017). The author believes that the mixed methods approach has been beneficial in contributing to the literature with new knowledge about the infant feeding outcomes, influences and experiences of IPAB mothers.

The findings of the thesis have contributed to the literature in a number of ways. Overall the mixed methods approach has allowed the drawing together of results from different methodologies and shown that clear vulnerabilities related to infant feeding exist which may have been previously overlooked.

Breast is best is the message from the South Asian culture; religious and cultural teachings echo this. These messages are passed down the generations and are ingrained in the community that

mothers live in. However, this thesis has revealed the tensions that exist in the social and cultural context of the South Asian mother that inhibits her from engaging with the pro- breastfeeding messages that she experiences. Figure 5 provides a flow diagram of how the data collected at each stage informed the delivery of subsequent stages of the thesis.

Figure 5-Integration of the methods and how the data informed each stage of the thesis.



The thesis aimed to understand the infant feeding behaviours, influences and experiences of IPAB mothers living in the UK. The mixed methods approach uniquely contributes to the literature by providing a detailed understanding of the infant feeding behaviours and beliefs of IPAB mothers. The quantitative studies in chapters 3 and 4 found varying breastfeeding outcomes amongst IPAB mothers. In particular Pakistani and Bangladeshi mothers were less likely to initiate breastfeeding, breastfeeding (and do so exclusively) at weeks one and six postpartum compared to Indian mothers. Lower proportions of mothers from the Pakistani and Bangladeshi sub group were likely to intend to breastfeed and have an awareness of the health benefits of breastfeeding.

The quantitative data on formula feeding behaviours was mixed as a small proportion of mothers responded to the question of whether mothers had introduced formula feeds to their baby but when asked about the timing of when formula feeds were introduced a much larger proportion responded. Such discrepancy could have been addressed using qualitative methods to understand mothers' true formula feeding behaviours but the constraints of the survey design did not allow such a follow up. A very small minority if mothers in the IFS sample had said that they introduced additional foods to their baby in the early weeks post birth. However, these findings were in contrast to the findings of the scoping review and qualitative work which found that administering prelacteal feeds (i.e. additional foods) is common practice amongst IPAB mothers. This is a demonstration of the strength of using mixed methods; without such methods these practices may not have been uncovered.

The IFS quantitative secondary analysis highlighted differences in breastfeeding behaviours and certain antenatal and postnatal factors such as feeding intentions, awareness of health benefits of breastfeeding and formula feeding behaviours. However, given the nature of the survey design it does not allow further exploration of such behaviours and possible reasons for why such differences may exist amongst IPAB mothers. These findings called for exploration of the influences of infant feeding practices via other methods to understand why IPAB have reduced rates of breastfeeding.

A scoping review (presented in chapter 5) of the UK and South Asian literature on the infant feeding practices of IPAB mothers sought to identify the individual, group and societal level influences on infant feeding as demonstrated by the IFS secondary analysis and is the first attempt in the UK to collate all available information in the area. A multitude of factors at the individual and societal level were found to potentially impact infant feeding practices of IPAB mothers. The scoping review also revealed that most of the literature was from South Asia and further work was needed in the UK to understand the influences that may impact on the feeding practices of IPAB born in the UK. What the scoping review does do is provide a potential picture of the influences of immigrant IPAB mothers something that may not been captured by large government surveys such as the IFS due to language barriers to understanding the information provided and needed in such surveys. The scoping review is unable to comment confidently on the influences on Bangladeshi mothers infant feeding practices as there was a lack of literature identified by the scoping review in this area. However, the scoping review can conclude that breastfeeding initiation and breastfeeding exclusivity were impacted by both individual and societal level factors. Two key findings revealed by the scoping review need attention. Firstly the practice of discarding colostrum was practiced by both Pakistani and Indian mothers. Something that the IFS did not cover in the questions asked. Secondly the scoping review also revealed that mothers from both sub groups mentioned above gave their babies prelacteal feeds something that contrasts with the findings of the IFS where it was found only a very small minority of mothers had given additional feeds to their new-borns. This contrasts to the findings regarding the administering of additional foods may well be that either the practice doesn't exist in the population sampled by the IFS or that the administering of prelacteal feeds does but mothers do not identify it as administering additional foods hence the low numbers captured by the IFS. This point demonstrates the value of conducting mixed methods studies because without the qualitative enquiry such behaviours may not have been captured.

The findings of the scoping review informed the development of the interview schedule used in the qualitative interviews with mothers and grandmothers (Chapter 7) confirmed some of the findings of the scoping review and revealed like the studies from South Asia, mothers living in the UK discarded colostrum and administered prelacteal feeds to their babies. A new finding that until now was hidden by the large number of quantitative surveys not exploring such factors. When the IFS ask about 'additional food' administration only a small proportion of IPAB responded however it is clear from past research and the current findings from the thesis that giving prelacteal feeds is rooted in cultural and religious beliefs. Mothers may not recognise prelacteal feeds as additional foods and thus large surveys may need to use different terminologies to capture the true behaviour of administering additional foods particularly amongst IPAB mothers (for example using the word 'ghutti' or asking whether they administered honey when the baby was born).

The qualitative enquiry (chapter 7) aimed to understand the experiences of infant feeding amongst IPAB mothers living in the UK and again like the scoping review shed light on the infant feeding behaviours of IPAB mothers. The rich accounts of the mothers' and grandmothers' interviews revealed that a number of individual, societal and group level factors (as defined by Hector and colleague's framework) influenced infant feeding practices. The qualitative findings mirrored some of the findings of the scoping review particularly in terms of the importance of the grandmother's role, the discarding of colostrum and administration of prelacteal feeds.

The mixed methods approach was able to inform the definition of the next steps for intervention development to support IPAB mothers infant feeding practices. The REPLACE approach was discussed as a suitable framework for such an intervention because of the focus on culture and the community in supporting behaviour change at an individual and societal level.

Overall the Mixed methods provide a broader understanding of the infant feeding outcomes and experiences that either quantitative or qualitative alone would not have been able to provide alone.

Without the quantitative analysis the varying breastfeeding outcomes would not have been uncovered within the broad ethnic group of South Asian. The qualitative contribution of the the scoping review and interviews with grandmothers and mothers allowed to uncover social and cultural practices that until now have not fully been uncovered by previous research due to their reliance on quantitative survey methodology that fails to ask about the practices of giving ghutti and discarding colostrum.

9.3 Comparison to other studies

The thesis is the first mixed methods study of infant feeding amongst IPAB mothers. Findings from individual chapters will be discussed in the context of other research that is available.

9.3.1 Chapter 3- Secondary analysis of the IFS (Part 1)

Comparison of the findings from the secondary analysis of the IFS to other surveys that have used similar sub-groups is difficult for many reasons. Firstly, there are variations in the way that the sub-groups are defined. For example, the earlier survey of infant feeding in South Asian families defined sub-groups as 'Indian', 'Pakistani' and 'Bangladeshi' (Thomas and Avery 1997), whilst infant feeding surveys after this date until the last one in 2010 have merged the sub-groups under the broad umbrella term of 'South Asian' (Hamlyn et al. 2002, Bolling et al. 2007, McAndrew et al. 2012). Other surveys have used the groups 'Pakistani' and 'Other Asian' to classify Indian and Bangladeshi mothers for pragmatic reasons (Cabieses et al. 2014). Such variations in defining sub-groups make it difficult to compare findings across surveys, particularly as it has been recognised that IPAB sub-groups are heterogeneous in their behaviours (Bhopal 2002).

Secondly, the IFS employ different definitions of infant feeding behaviours to other surveys, making comparisons difficult. For example, Kelly, Watt and Nazroo (2006) use predominant

breastfeeding to refer to infants who received only breastmilk. However, the infant feeding survey uses prevalence of exclusive breastfeeding to refer to this (IFS). Further, studies such as Hawkins et al. (2008) report on breastfeeding at four months only. Thus, before making comparisons, it is important to understand the infant feeding definitions used and the infant feeding behaviours measured.

Although comparisons may be difficult with surveys such as those reported by Kelly, Watt and Nazroo (2006), Griffiths et al. (2007), and Hawkins et al. (2008), what is clear is that when breastfeeding behaviours of IPAB sub-groups are explored individually, they demonstrate varying infant feeding behaviours. Indian mothers have been shown to have the breastfeeding advantage over Pakistani and Bangladeshi mothers (e.g. Thomas and Avery 1997, Hawkins et al. 2008). This provides a strong impetus to treat these individual sub-groups separately and to ensure when large surveys are conducted, representative samples are recruited which will ensure that sub-groups do not need to be merged for pragmatic reasons such as statistical power (e.g. Hawkins et al. 2008, Santorelli et al. 2013).

The first part of the secondary analysis of the IFS data has been invaluable in focusing attention on the 'who' (i.e. IPAB mothers) and the 'what' (breastfeeding initiation, prevalence and exclusivity). What do mothers from the IPAB sub-groups need concentrated support with? Any intervention or support is only going to be successful if it is targeted at a time that it is needed the most. The information provided by part one of the IFS points towards where an intervention could potentially be targeted with the above sub-groups to have the best chance of success. Pakistani mothers need support in initiating and continuing breastfeeding, while Bangladeshi mothers need encouragement in continuing to breastfeed exclusively, once they have initiated. Indian mothers need continued encouragement about their pro-breastfeeding choices to ensure that they continue to initiate breastfeeding and do so exclusively.

9.3.2 Chapter 4- Secondary analysis of the IFS (Part 2)

The second part of the secondary analysis provides a picture of some of the antenatal beliefs and postnatal behaviours of IPAB mothers. Antenatal beliefs such as feeding intentions have received some attention, but it is not established how these mothers intend to feed their babies due to conflicting findings in the literature. Lawton and colleagues (2012) conclude that the intention to breastfeed was highest amongst South Asian mothers compared to White mothers (Lawton et al. 2012), while Cabieses and colleagues found that Pakistani mothers were more likely to intend to mix feed over breast or bottle feed (Cabieses et al. 2014). The IFS collect data on the feeding intentions of mothers living in the UK. However, this has not previously been reported by South Asian ethnic sub-group, thus it is not known whether infant feeding intentions vary by South Asian sub-group. Feeding intentions are an important predecessor to infant feeding behaviour (DiGirolomo et al. 2005). Thus, knowing how sub-groups intend to feed their babies is one of the first steps in being able to support these mothers to optimally feed their babies. The second part of the secondary analysis of the IFS addresses this gap in information and shows that infant feeding intentions vary by IPAB sub-group.

Awareness of the health benefits of breastfeeding has long been studied, as there is recognition that knowledge of breastfeeding benefits makes it more likely for a mother to breastfeed her child (Chezam, Friesen and Boettcher 2003). This has been explored to a lesser extent with South Asian sub-groups. The IFS has provided some detail of this and found that compared to all other ethnic groups, lower proportions of South Asian mothers stated that they were aware of the health benefits of breastfeeding (McAndrew et al. 2012). Again, the merging of the individual IPAB sub-groups under the broad umbrella term of South Asian has masked important variations. The second part of the secondary analysis contributes to the literature by highlighting that the awareness of the health benefits of breastfeeding was lowest amongst Pakistani and Bangladeshi

mothers compared to Indian mothers and that these mothers need antenatal support that equips them with the information about the benefits of breastfeeding.

Two issues that need attention and have come to light during the secondary analysis of the IFS are the formula feeding behaviours of the IPAB mothers in the sample and secondly the administration of additional foods and liquids. The formula feeding behaviours need to be explored further with these sub-groups, particularly as only a small minority mentioned that they fed their baby formula milk however further analysis of the 'frequency' with which they gave their baby formula revealed that a much higher proportion of mothers responded to this question that the original question about the administration of formula milk.

It is surprising that such a small number responded 'no' to the question of whether they had administered additional foods to their baby as prelacteal feeds are customary in the South Asian culture (Shaikh and Ahmed 2006). For this reason, a true picture of the formula feeding and administration of additional food behaviours are not known. Such findings also suggest questionnaires may not be the most suitable method for collecting data with these sub-groups. They may benefit from qualitative methods where issues can be explored in depth rather than being constrained by the use of questionnaires (where questions may not be easily understood by these sub-groups).

9.3.3 Chapter 5- A systematic scoping review of the influences on Indian, Pakistani and Bangladeshi mother's infant feeding practices

As highlighted in chapters 1 and 5, several reviews exist on the factors that influence infant feeding practices. However, very little information exists on the influences on South Asian mothers' infant feeding practices. The systematic scoping review of the literature on South Asian mothers' infant feeding practices revealed a number of individual and societal level factors that impact infant feeding.

A multitude of factors have been identified via the collation of existing literature that has demonstrated that individual and societal level factors affect IPAB mothers breastfeeding initiation and exclusivity. Practices of discarding colostrum and administering prelacteal feeds have been evidenced in the literature that inhibits successful breastfeeding. The South Asian cultural context teaches that breast is best (through teachings passed down the generations via the mothers-in-law and the community) however competing messages about the need to get the baby used to the bottle, the importance of Pardah, the old milk (discarding colostrum) and the importance of ghutti inhibits women from optimally feeding their baby. Mothers are unaware of what colostrum is, its benefits and the importance of giving it to new-borns. Misconceptions of colostrum are often emphasised by those close to the mother such as mothers and mothers-in-law.

Two key practices embedded in religious and cultural practices were the discarding of colostrum and the administration of prelacteal feeds. Very early infant feeding practices such as provision of prelacteal feeds and the discarding of colostrum affect subsequent breastfeeding patterns. Such cultural practices may be detrimental to breastfeeding initiation and increase the likelihood of partial or no breastfeeding (Patil et al. 2015). Although the majority of the studies originated from South Asia, some older studies from the UK identified that discarding colostrum was practised in the UK, for example, Burton-Jeangros (1995), Littler (1997) and Condon et al. (2003).

Literature focuses on either Indian mothers, Pakistani mothers or Bangladeshi mothers, or merges them under the umbrella term of 'South Asian' as mentioned above. This provides fragmented information about the influences on their infant feeding behaviours. Most of the articles in the scoping review originated from South Asia, which highlights the gap in the UK literature about the influences on IPAB mothers' infant feeding influences. A review of the literature was conducted by Meddings and Porter in 2007 to understand the infant feeding decisions of Pakistani mothers. The authors stated that there was little information about Pakistani mothers and thus literature was included in the review that did not specifically relate to Pakistani mothers but '*where it can be generalised to this and other populations*' (Meddings and Porter 2007). Little

explanation is given as what findings could be generalised to Pakistani mothers or what populations this referred to. It is difficult, therefore to understand whether the findings relate to Pakistani mothers or 'other populations'. Nonetheless, the review concluded that Pakistani mothers made decisions involving the extended family and that family and friends influenced the infant feeding choice. Pakistani mothers were unaware of the benefits of breastfeeding.

Until now, a review such as that presented in the thesis has not been conducted in the field. The scoping review is the first of its kind to bring together the literature in the UK and South Asia on the influences on breastfeeding initiation and breastfeeding exclusivity. Until now, little was known about what factors may influence such behaviours. Sharma and colleagues (2016) reported on a systematic literature review of the facilitators and barriers to initiation of breastfeeding in South Asia. Their review has comparisons to the findings of the scoping review. Discarding colostrum and administering prelacteal feeds and the mother-in-laws opinion were all cited as barriers to optimal infant feeding (Sharma and Byrne 2016). The scoping review adds to this work and enhances our understanding of factors that influence not only breastfeeding initiation (as with Sharma and Byrne's, 2016 work) but also breastfeeding exclusivity.

9.3.4 Chapter 7-Qualitative study with mothers and grandmothers to understand the infant feeding experiences and practices of Indian, Pakistani and Bangladeshi mothers living in the UK

Pockets of research exist that have employed qualitative enquiry to understand the infant feeding practices and experiences of mothers from the South Asian culture (e.g. Choudhry and Wallace 2012, Ingram, Johnson and Hamid 2003), however, none have extensively explored the factors that influence feeding intentions, choices and how such choices are made. It has long been known that the mother in the South Asian culture will not make an infant feeding decision in isolation (Ingram, Johnson and Hamid 2003) however very little research has explored the role of significant others in the South Asian mother's vicinity in making infant feeding decisions. Like

other studies before (e.g. Choudhry and Wallace 2012), the current study confirms the dominant role of the family in the infant feeding decision and process. There is evidence that grandmothers can play varying roles in either supporting or discouraging breastfeeding. For example, Ingram et al. (2003) found that grandmothers were crucial in supporting breastfeeding amongst their daughters and daughters-in-law. However, Choudhry and Wallace (2012) found conflicting results. Mothers-in-law, in their study, were not supportive of breastfeeding as there were competing duties that the daughters-in-law needed to fulfil in the house. It is, therefore, imperative, to understand the support that mothers may receive from such sources if breastfeeding is to be successful. Some of the grandmothers in the current study were not confident in approaching the subject of infant feeding, and where advice was given, grandmothers encouraged prelacteal feeds, discarding colostrum, 'getting the baby used to the bottle' and preserving Pardah which often meant giving the baby formula. A fruitful option would be to provide grandmothers with education about the benefits of exclusive breastfeeding, the detrimental consequences of discarding colostrum and the potential harm of providing infants with prelacteal feeds. Mothers need to be given the skills to be able to recognise detrimental advice and have the confidence to engage in dialogue with significant elders in a bid to address such advice. Prelacteal feeds and discarding colostrum are deeply rooted in cultural and religious practices of IPAB ethnic groups (McKenna and Shankar 2009). However little attention has been paid to such practices in the contemporary literature, and how these behaviours can be addressed. An approach is needed to educate the community about the detriments of such behaviours. Empowering the communities, in transmitting this knowledge is paramount if a positive change in infant feeding practices is to be implemented.

Although the work of Ingram, Johnson and Hamid (2003) has reported on findings from the perspective of the grandmothers, the authors acknowledge that the grandmothers recruited were enthusiastic about breastfeeding (Ingram, Johnson and Hamid 2003). Thus, this group of grandmothers may be different to others who may not be as enthusiastic or hold misconceptions

about the benefits of breastfeeding. The grandmothers in the qualitative enquiry of the thesis acknowledged the benefits of breastfeeding but promoted the administration of prelacteal feeds and discarding colostrum. Like some of the earlier work of Littler (1997) and Burton-Jeangros (1995) with Bangladeshi mothers, this study finds that colostrum is viewed as weak milk and is therefore discarded. This present study, unlike others before it, shows that discarding colostrum is not something localised to certain sub-groups such as the Bangladeshi or Pakistani sub-groups (Littler 1997, Condon et al. 2003). IPAB mothers discarded colostrum with the assumption it was old milk or '*nazar ka dood'* that needed discarding.

Although discarding colostrum was identified as an issue as early as 1976 for South Asian sub-groups, it is not something explored in later studies. This is partly to do with the questions asked. Mothers do not identify discarding colostrum and administering prelacteal feeds as particularly distinct behaviours that need to be reported. Mothers in the current study stated that they would not have spoken about such practices because they thought it was '*routine and not that interesting*'. This research highlights the importance of discussing and understanding such cultural practices and educating mothers about the benefits of administering colostrum and not providing prelacteal feeds to infants in the early days after birth. A whole family approach is needed given that such decisions are made within the family context. Addressing long-held beliefs about the disadvantages of colostrum need to be reframed into positive beliefs about the benefits of providing colostrum to the infant.

The immigration process has been a focus for studies investigating various health behaviours for years due to the recognition that health is worse in those immigrating to a host country compared to non-immigrant groups (Jayaweera 2014). This premise also holds true for infant feeding. Immigrating to the UK appears to have detrimental effects on breastfeeding rates. For every additional five years spent in the UK, immigrant mothers were 5% less likely to breastfeed for at

least 4 months compared to non-immigrant mothers (Hawkins et al. 2008). Acculturation research allows us to understand why this may be the case. However, the UK literature has been slow to adopt the framework and has, in the area of breastfeeding, focused on immigration rather than the process of acculturation.

The qualitative chapter of this thesis (chapter 7), adopted acculturation as a concept to help contextualise the infant feeding practices of IPAB mothers living in the UK.

This thesis demonstrated the importance of understanding, via qualitative means, how immigrating and acculturation (or not) has an impact on infant feeding choices. Traditionally, acculturation research has simply explored associations between levels of acculturation and breastfeeding behaviours but failed to explore how and why the acculturation/immigration process influences breastfeeding outcomes. The data reported in this thesis indicates that it was the loss of support networks that comes with immigrating to the UK rather than the culture of the UK that had detrimental effects on mothers' breastfeeding practices. Mothers emigrating from India, Pakistan and Bangladesh all mentioned that in their country of origin they had support from various members of their families that would also help for them to breastfeed their baby. But upon immigration, such support networks were lost. Choudhry and Wallace (2012) found that their sample of Pakistani mothers used the bottle-feeding culture of the UK as a reference for their methods of feeding. However, the mothers in the qualitative enquiry of the thesis were unaware of how mothers in the UK fed their babies. Most of the mothers had only been in the UK a couple of years and thus may not have 'acculturated' fully. Further, longitudinal work is needed to explore how the process of acculturation has its influence on the infant feeding behaviours of mothers immigrating to the UK. All mothers migrated to the UK due to their marriages being arranged to individuals living in the UK, and some mothers did state that this process was difficult and one of adjustment to their new family. This understanding of the lived experience and context of migration to the UK could only have been captured via qualitative methods.

Past studies (mainly from the US) can be criticised for quantifying the acculturation process by assigning a score to participants (via an acculturation scale) but failing to understand, qualitatively what aspects of the acculturation process may have had an impact. For example, typical questions ask the types of clothes participants wear at home or outside of the home, the language spoken, and how much they feel part of the host society. Individuals are then scored on how acculturated they are to the host culture, to their own culture (or even both) and then assigned a score. Associations are then drawn between their score and what information they have given on said topic, such as infant feeding. This approach somehow assumes that those abstract elements of the scale have a bearing on infant feeding. The author calls for further work in developing topic-specific acculturation measures that can capture the phenomenon of interest. This may help to develop a fine-grained understanding of how the acculturation process influences infant feeding or other health behaviours.

Future research would benefit from a longitudinal design to track how the acculturation process shapes infant feeding choices amongst mothers. The mothers in the sample had been in the country a short while, living in ethnic enclave areas in such circumstances the heritage culture (that of the South Asian culture) may have been preserved such that migrants could live their day-to-day lives 'without interacting with, or acquiring the practices, values or identifications of, the receiving society' (Schwartz, Unger and Szapocnik 2010:9). The mothers in the sample had little contact with the mainstream population and this may explain why acculturation did not have an impact as shown in other work such as that of Choudhry and Wallace (2012). Further work is needed to understand how, and in what circumstances and contexts acculturation impacts on those migrating to the UK. This requires in-depth, longitudinal qualitative work to understand the specific factors inherent in the acculturation process that may cause reduced rates of breastfeeding like those seen in the United States (Ahluwalia et al. 2012). The mothers were hesitant to invest extended periods of time to the study. Future work will benefit from understanding how such

research can be implemented with mothers from the South Asian sub-group while addressing their hesitancies in committing to research over a prolonged period.

9.3.5 Chapter 8- Infant feeding support for Indian, Pakistani and Bangladeshi mothers: Where are we now and where do we need to go?

This thesis contributes to the knowledge about the existing interventions available for IPAB mothers and has discussed the potential next steps for a suitable intervention to support these sub-groups to optimally feed their infants.

The local service designed to support optimal feeding amongst South Asian mothers were unaware of the practices of discarding colostrum and administration of prelacteal feeds amongst these sub-groups. The service will be updating their programme to include information to educate mothers about the health benefits of colostrum and risks associated with administering prelacteal feeds as a result of the findings of the thesis.

The thesis highlights that modelling an intervention on the REPLACE approach may prove a viable way to address the cultural teachings about infant feeding in the South Asian community which will help to increase and maintain good levels of breastfeeding. For an intervention to be successful in such communities it is necessary that it addresses the specific cultural/religious teachings and beliefs of the target population. Work, therefore, to understand such teachings is valuable before any intervention development occurs.

9.3.5.1 Reflexivity

The researcher (female) conducting the interviews was a married Pakistani mother and a Doctoral student. Mothers and grandmothers would ask details about the researcher and whether the researcher was married/had children.This shifted the dynamic of the relationship between researcher/participant to mother/mother or mother/grandmother. There was a trust built by knowing such information about the researcher, and mothers and grandmothers noted that they could talk more openly knowing that the researcher was also a mother. The researcher was often asked about her religious and ethnic background by mothers and grandmothers taking part. This aided the understanding of the cultural aspects of infant feeding and made it easier for mothers and grandmothers to disclose information about their experiences. The researcher was fluent in English, Urdu, Hindi and Punjabi. These language skills aided communication and addressed language barriers that existed.

The mothers spoke about the ease with which they could speak to the researcher about the issues around infant feeding, however there were concerns about how university might use the findings. Potential participants were made aware about the protocols and procedures that are put in place to protect them and their data.

The author acknowledges that being a mother from the same culture and religion as most of the mothers and grandmothers taking part in the study helped build a relationship of trust and rapport. Knowing that the researcher was from a similar background enabled participants to communicate their ideas and opinions with the researcher openly. There were some instances where knowledge that the researcher was from a similar background made it easier for participants to not talk in detail and respond with ‘you know how it is’ and not expand on their answers. In such instances, the researcher would encourage the participants to expand on their ideas and answers as much as possible.

9.4 Strengths and Limitations

This four-phase, mixed methods thesis contributes to a previously under-investigated area of literature. The findings have relevance for health professionals supporting infant feeding amongst IPA sub-groups living in the UK. The thesis is one of the first comprehensive attempts to understand the infant feeding behaviours of IPAB mothers living in the UK and presents the deep-rooted, social, cultural and behavioural practices inherent in the South Asian culture that may impact on sub-optimal feeding amongst these sub-groups. The thesis also provides recommendations about how IPAB mothers can be better supported to optimally feed their babies, based on the needs of the mothers and an understanding of the social and cultural milieu within which their infant feeding choices are made.

Over the years there has been a proliferation of survey data looking at variations that exist in breastfeeding behaviours amongst various sub-groups with little attention paid qualitatively to why such differences exist. More literature, such as that presented in the thesis is needed that understands the differences so that the above sub-groups can be effectively supported in feeding their infants in an optimum way is needed. In large quantitative surveys, Indian mothers have had the breastfeeding advantage, but the scoping review and qualitative interviews reveal that they are not immune from potentially detrimental infant feeding behaviours such as providing prelacteal feeds and discarding colostrum or beliefs such as the need to '*get the baby used to the bottle*'. Further, these practices were not constricted by country of birth. These sets of behaviours were customary behaviours practised by both mothers born in the UK and those that had immigrated to the UK from South Asia.

Surveys have advanced our understanding of breastfeeding variations amongst various ethnic sub-groups however as has been shown in the secondary analyses they mask true behaviours. For example, the secondary analysis revealed that a very small minority of mothers were giving their babies additional foods/liquids. However, this contrasts with the findings of the scoping review and the qualitative interviews where mothers openly communicated practices of giving their infants additional foods/liquids. Experience from the interviews suggests that mothers do not classify prelacteal feeds specifically and other one-off occurrences of giving food as 'additional foods'. An example of this is, when asked in the interviews whether mothers gave additional foods or liquids to their babies, all mothers stated no. When mothers were asked whether they had given prelacteal feeds, mothers also stated no. However, when mothers were asked whether they had given their babies '*ghutti* 'or honey, they all responded with yes. This highlights the importance of using the right language because behaviours may be masked if the right terminology is not used. This was explored further with the mothers and they stated that they did not see giving 'ghutti' as an 'additional food/liquid'. This goes some way to explain the conflict

in findings of the IFS and the scoping review and qualitative interviews with regards to the administration of additional foods/liquids.

The study's major strength is including the views of non-English speaking mothers and grandmothers that would otherwise have been excluded if interviews were not conducted in other languages. The recruitment process was a valuable learning experience, and such learning may be used for future studies working with IPAB mothers. Non-UK born mothers were hesitant to be involved in the project. A number of the mothers voiced concerns that their information would be shared with the home office and the fact that they could not speak English properly would be reported to the home office. These issues only came to light when taking the time to understand non-participation. This has implications for the kind of information provided to this sub-group of the population. It may not be enough just to provide written and verbal information about the project, hesitancies about the social and cultural climate within which mothers immigrate to the UK may impact on their participation in research. All mothers were advised that their information would be anonymous and kept confidential, but this was not understood by most Non-UK mothers. Gaining a participant's trust and building rapport are often voiced when recruiting participants. Taking the time to talk to participants and understand their hesitancies is a crucial step in building trust amongst these sub-groups.

The limitations of the thesis have been discussed in the individual chapters (3, 4, 5, 7 and 8). However, a few key points will be discussed pertaining to the overall thesis.

A limitation of the thesis overall is that there was little data available for Bangladeshi mothers (within the IFS dataset, articles in the Scoping review and recruitment of Bangladeshi mothers within the qualitative strand of the thesis). Like Pakistani mothers, Bangladeshi mothers are vulnerable to reduced rates of breastfeeding. Future work would benefit from understanding the infant feeding outcomes, experiences and influences related to Bangladeshi mothers, to be able to best support mothers from these sub-groups.

The qualitative part of the thesis employed a healthy number of participants; however the extent to which results can be generalised needs consideration. The results are reflective of those mothers living in large areas of South Asian communities. Such findings may be very different to those living away from densely populated areas of South Asian communities. Whether such findings hold true for individuals living in different areas of the country and not in ethnic enclaves such as the mothers and grandmothers remains to be explored.

Some have stated that the technical challenges of mixed methods exist (Bishop 2015), which stem from the philosophical challenges of mixing qualitative and quantitative methods (Bishop, 2015). However, without such an approach many important questions about the infant feeding practices and experiences of IPAB mothers would have remained unanswered. Overall the mixed methods approach has allowed uncovering data that would not have been found if the sole use of quantitative or qualitative methods were used.

The overall aims of the thesis were to understand the infant feeding outcomes, influences and experiences of Indian, Pakistani and Bangladeshi mothers. In fulfilling such aims it was understood that the findings may not be generalised to all South Asian mothers living in the UK given the heterogeneity that exists amongst South Asian sub groups such as Indian, Pakistani and Bangladeshi sub groups (Bhopal, 1997). The South Asian sub-group, particularly the Indian, Pakistani and Bangladeshi sub groups display heterogeneity on a number of factors such as religion, language, cultural teachings and migration histories (Bhopal, 1997). The use of the mixed methods approach within the thesis has allowed to tap into a number of different sub-groups within the broader Indian, Pakistani and Bangladeshi groups that would not have been possible if either quantitative or qualitative methods were used alone. For example, as mentioned in previous chapters, quantitative methodologies such as large scale surveys like the IFS may not be inclusive of members of the south Asian communities that are unable to read or wrote English. Such sub-groups make up a large proportion of the South Asian sub –group living in the UK and not capturing their voices and experiences regarding infant feeding may provide a disjointed

picture. Qualitative methods such as one to one interviews and focus groups conducting in the languages of choice for many non-English speaking south Asian individuals allows to capture experiences that may not have been possible with the sole reliance on quantitative methodologies written in English.

9.5 Recommendations for future practice

The thesis addresses misconceptions that the South Asian sub-groups may not need support regarding their infant feeding practices. This view has been strengthened by the proliferation of large surveys adopting the comparative approach and comparing the ethnic majority (the White population) with ethnic minority groups. This approach has detracted focus from the behaviours of the individual sub-groups that make up the minority groups such as IPAB mothers. The different behaviours of the IPAB mothers call for them to be treated as individual sub-groups in research rather than being amalgamated under the broad umbrella term of 'South Asian'.

The Baby-friendly Initiative (BFI) accreditation process requires that all women receive appropriate care, regardless of their social or ethnic background (WHO/UNICEF UK 2009). Getting the balance right between designing mainstream services that will support breastfeeding for all women and provide tailored services to the needs of diverse sub-groups is complex (McFadden et al. 2012); particularly as the facilitators and barriers are multifactorial and often infant feeding decisions extend beyond just the mother and father. Understanding how existing services can be tailored to meet the needs of IPAB mothers and significant others is a crucial next step. The family is a key source of information for mothers. Thus, it is imperative to include them in any intervention efforts to promote optimal infant feeding.

Until now, little was known about this sub-groups' decisions about infant feeding including those related to giving prelacteal feeds and discarding colostrum. With the use of mixed methods, the thesis can conclude that such practices are still evident and are promoted within the community, particularly by elders (including mothers-in-law). Efforts to educate mothers about the benefits of breastfeeding and colostrum are only going to be effective if a whole family approach to breastfeeding promotion and education is taken. The REPLACE approach shows great promise in being able to support these sub-groups in making and maintaining healthy infant feeding

choices. Indeed, the findings of the thesis have been used as a basis for a successful funding bid awarded by the Medical Research Council. The findings of the PhD will be used to inform the early development of a community-based intervention (using the REPLACE approach) to support infant feeding amongst mothers from the IPAB sub-groups.

Commentaries exist on how to provide culturally appropriate care for mothers from the IPAB communities (e.g. Roberts 2002, Zaidi 2014), but these provide descriptions of the cultural and religious context that may or may not exist. Little is known about how to support optimum feeding. Chapter 8 highlights a potential for providing support for mothers from IPAB communities. The word 'communities' is key; a community approach is required if social and cultural contexts of infant feeding are to be addressed. Misconceptions about '*getting baby used to the bottle*' and the importance of giving prelacteal feeds and discarding colostrum are strong messages passed down through the generations, educating the mother alone will prove ineffective. Mothers need to be given the skills to address such messages and communities need to be provided with the correct information about the positive impact of breastfeeding and the negative impact of formula on the child's health.

McKenna and Shankar (2009) comment that midwives need to balance the ability to provide optimal health care while '*respecting and incorporating a women's beliefs and customs is just one aspect of the art of midwifery*' (page 80) and that there are instances where these two aspects may conflict. Further exploration is needed about how optimum feeding can be promoted to mothers from the IPAB sub-groups in line with some of the cultural traditions that are practised and valued in the South Asian culture. Research with health care professionals to understand how mothers and health care professionals both can be supported to promote optimal feeding is needed. A distinction needs to be made about one-time prelacteal feeds (normally when their baby is born) and long-term supplementation that may hinder optimum breastfeeding. The mothers in the

qualitative sample had all administered prelacteal feeds. When asked about additional foods that they had given, most suggested that they had not introduced such foods. However, this contrasted with the information given later in the interviews. Certain things may be given to infants at an early age, but mothers may not recognise them as a prelacteal feed or food that is supplementing breastfeeding. It is important to understand in detail how mothers view these behaviours and the frequency of the behaviour. Such practices may explain why there are high rates of breastfeeding initiation in the above sub-groups but a large fall out in breastfeeding exclusivity.

Prelacteal feeds have been identified in previous work (McKenna and Shankar 2009) as commonly practised amongst Muslims and Hindus; it is inherent in the South Asian culture. The scoping review and qualitative interviews highlight this as a widespread practice. Honey was the most commonly given prelacteal feed; there is recognition that if this is administration does not affect timely initiation that this religious/cultural practice should be honoured in the postpartum period (McKenna and Shankar 2009). However, there are concerns about giving infants honey as there is a risk of infants developing Botulism which is a serious, potentially fatal disease (WHO 2016). For this reason, the WHO (2016) recommends that infants under the age of 1 should not be given honey. Health professionals need the appropriate training to be able to support culturally based behaviours such as administering honey to new-borns. Given that midwifery is requiring more culturally appropriate care, what this means and how health professionals can be supported in being able to deliver such care needs consideration. For IPAB mothers many cultural and religious practices require introducing non-breast milk substances into the infant's diets from an early age. Such practices hold significance for those that practice them; it is imperative that health care professionals understand the meaning of these practices for mothers and work with them to understand how they can be supported to breastfeed while retaining their cultural and religious values optimally. It may well be that health professionals need to work with the South Asian community to find a safer ‘prelacteal feed’ that can take the place of administration of honey.

9.6 Conclusion

Although the breastfeeding literature has evolved considerably over the decades, the research on South Asian mothers' infant feeding practices and the factors that surround such practices has been slow. The results of the thesis call for researchers to pay more attention to how ethnic groups are labelled and the importance of treating them as individual sub-groups. Cultural teachings about the benefits of breastfeeding and importance of providing breast milk to the baby may get diluted by other cultural practices such as the importance of discarding colostrum, administering prelacteal feeds, preserving modesty and getting the baby used to the bottle. IPAB mothers are not meeting the WHO recommendations for feeding their infants. Breastfeeding initiation is interrupted by the discarding colostrum and breastfeeding exclusivity is lost to administration of prelacteal feeds and other additional liquids. Non-UK born mothers traditionally may live in the extended family where such practices are encouraged. Understanding the mothers living arrangements and how these may be navigated (i.e. breastfeeding while residing in the extended family) needs careful consideration.

This thesis has provided evidence that IPAB mothers show different infant feeding behaviours and that these differences may be explained by cultural practices such as discarding colostrum, getting baby used to the bottle and administering prelacteal feeds. Cultural practices that are practised by mothers and encouraged by significant others today. There is a need to understand how breastfeeding practices can be promoted while valuing the cultural and traditional practices inherent in the South Asian culture. The focus should be on modifiable factors that can be targeted to improve breastfeeding behaviours in mother but respecting the social and cultural context within which decisions about breastfeeding are made.

The mixed method approach has allowed the drawing together of results from different methodologies and points to some vulnerability related to IPAB mother's infant feeding, which in the past have been masked. To reduce health inequalities, action is required on several policy objectives one is giving every child the best start in life (Marmot et al. 2010). Each strand of the thesis and its findings have important implications for the health of infants from IPAB sub-groups since breastfeeding is acknowledged to offer protection from later respiratory and gastrointestinal illnesses and other adverse health outcomes (Victora et al. 2016). South Asian sub-groups disproportionately experience health inequalities (Bhopal and Rafnsson 2012). Thus, it is of public health importance that these sub-groups optimally feed their infants when they are born, in line with the WHO recommendations.

The religious and cultural basis of breastfeeding is passed down the generations amongst IPAB mothers, and thus there is a pre-existing foundation from which health professionals can work from to support optimal feeding. These findings draw attention to the possibilities of changing the conversation around infant feeding. Supplementing the traditional information about the benefits of breastfeeding, positioning and attachment, with specific discussions around the cultural barriers and practices that could impact on infant feeding. Until these are woven into infant feeding conversations, these sub-groups will continue to demonstrate sub-optimal feeding.

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Maternal & Child Nutrition

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Original Article

‘Breast is not always best’: South Asian women’s experiences of infant feeding in the UK within an acculturation framework

Kubra Choudhry and Louise M. Wallace

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Desk-Based Research Ethics Approval

This project involves using materials already in the public domain and does not involve human participants

Project Title

Infant feeding practices of Pakistani , Bangladeshi and Indian women: A Secondary Analyses of the existing Infant Feeding Survey dataset.

Principal Investigator Certification

I believe that this project **does not require research ethics approval**.	X
I confirm that I have selected this option because it honestly describes the risk associated with my project.	X
I confirm that I will carry out the project in the ways this application describes (see project summary, comments and attachments if proferred). I will immediately suspend research and request a new ethical approval if the project subsequently changes.	X

Principal Investigator

Name: Kubra Anwar.....

Date: 27/06/2014.....

Student's Supervisor (if applicable)

I confirm that I have discussed this project with the student and agree that it does not require research ethics approval. I will continue to review ethical issues in the course of supervision.

Name: Louise Wallace.....

Date: 27/06/2014.....

Desk Based Research Ethics Approval Checklist

Applicant Details

Project Ref:	P25190
Full name:	Kubra Anwar
Faculty:	[HLS] Faculty of Health and Life Sciences
Department:	[AA] ARC Health & Lifestyle Interventions
Module Code:	
Supervisor:	Louise Wallace
Project title:	Infant feeding practices of Pakistani , Bangladeshi and Indian women: A Secondary Analyses of the existing Infant Feeding Survey dataset.
Date(s):	01/04/2014 - 31/08/2014
Created:	27/06/2014 10:38

Project Details

The Infant Feeding Survey is a quinquinniel survey that is the main source of data for breastfeeding initiation, prevalence and exclusivity for women living in the United Kingdom . The most recent survey presents data under the broad umbrella term of 'South Asian' group rather than by more specific individual ethnic sub groups (i.e. Pakistani, Bangladeshi and Indian sub groups). This is problematic as South Asian sub groups are said to be heterogeneous in their attitudes and behaviours (Bhopal, 2002). Differences have been shown to exist between Pakistani, Indian and Bangladeshi women and their infant feeding practices (Thomas and Avery, 1997),. Very little data is available from other sources on the infant feeding practices of Pakistani , Indian and Bangladeshi women,. The research aim is to to analyse the Infant Feeding survey dataset by South Asian sub group (i.e. Pakistani, Indian and Bangladeshi groups). Permission has been granted by the UK Data Service to carry out analyses on the above dataset.

Questions from the IFS used for the secondary analysis (part one)

Q136. What age are you now?

Q137. How old were you when you finished full-time education? This might be school or college, whichever you last attended full-time)

- under 16
- 17
- 18
- 19 or over

Mother's socio-economic classification - 3 classes

- Managerial and professional
- Intermediate occupations
- Routine and manual
- Never worked

Q149. Ethnicity

- Indian
- Pakistani
- Bangladeshi

Q2. Age of baby (banded)

- Up to 1 week
- Over 1 week, up to 2 weeks
- Over 2 weeks, up to 3 weeks
- Over 3 weeks, up to 4 weeks
- Over 4 weeks, up to 5 weeks
- Over 5 weeks, up to 6 weeks
- Over 6 weeks, up to 7 weeks
- Over 7 weeks, up to 8 weeks
- Over 8 weeks, up to 9 weeks
- Over 9 weeks, up to 10 weeks
- Over 10 weeks, up to 11 weeks
- Over 11 weeks, up to 12 weeks

Q3. Is this your first baby?

- Yes
- No

Q4. How many children do you have in total? (banded)

1

2

3

4+

Questions from the IFS used for the secondary analysis (part two)

Q6. Thinking about the milk that your baby has received over the last 7 days, has he/she had:

Only breast

Only infant formula

Breast milk and formula

Not stated

Q7. Has your baby EVER been given infant formula, even if this was only once?

Yes

No

Q8. Has your baby EVER been given breast milk (via syringe, bottle or cup etc) or have you put your baby to the breast, even if this was only once?

Yes

No

Q13. How old was your baby when he/she FIRST received infant formula? (banded)

Under 1 Week

1 week, under 2 weeks

2 weeks, under 3 weeks

3 weeks, under 4 weeks

4 weeks, under 5 weeks

5 weeks, under 6 weeks

6 weeks, under 7 weeks

7 weeks, under 8 weeks

8 weeks, under 9 weeks

9 weeks, under 10 weeks

10 weeks, under 11 weeks

Over 11 weeks

Q14. Since your baby was born, how often has he/she been fed infant formula?

All or almost all feeds

about half of all feeds

one ot two feeds a day

A few feeds a week but not every day

A few feeds since they were born but nt every week

Only once or twice since they were born

Not stated

Q33All. Has your baby EVER had anything else to drink apart from milk, such as water, fruit juice, squash or herbal drink?

Yes

No

Q34. Age of baby when first given a drink other than milk (banded)

Under 1 Week

1 week, under 2 weeks

2 weeks, under 3 weeks

3 weeks, under 4 weeks

4 weeks, under 5 weeks

5 weeks, under 6 weeks

6 weeks, under 7 weeks

7 weeks, under 8 weeks

8 weeks, under 9 weeks

9 weeks, under 10 weeks

10 weeks, under 11 weeks

Over 11 weeks

Q36. Has your baby ever had any foods such as cereal, rusks, baby rice, fruit, vegetables or any other kind of solid food?

Yes

No

Q49. Thinking back to before you had your baby, how did you plan to feed him/her?

Infant formula

breastfeed

breastfeed and use infant formula

Had not decided

Q133. Are you aware of any health benefits in breastfeeding, either for the mother or the baby?

Yes

No

Incidence of breastfeeding

Yes breastfed

No never breastfed

Prevalence of breastfeeding: Week 1

no breastfeeding at week one

yes, breastfeeding at week one

Prevalence of breastfeeding: Week 6

No breastfeeding at week 6

Yes, breastfeeding at week 6

Exclusivity of breastfeeding: Week 1

No exclusive breastfeeding at week 1

Yes, exclusive breastfeeding at week 1

Exclusivity of breastfeeding: Week 6

No exclusive breastfeeding at week 6

Yes, exclusive breastfeeding at week 6

Certificate of Ethical Approval

Applicant:

Kubra Anwar

Project Title:

A scoping review of the psychological, social, cultural, behavioural, structural and health factors associated with Indian, Pakistani and Bangladeshi mothers infant feeding beliefs and practices

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Low Risk

Date of approval:

08 July 2015

Project Reference Number:

P34950

Data extraction tables for the studies included in the Scoping Review.

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
1	Gupta et al (2010)	New-born care practices in urban slums pf Lucknow City, UP	Knowledge of when breastfeeding should be initiated (options ranged from within one hour, 1-24 hours, after 1 day, don't know.) Belief about the benefits of colostrum (Prevents illness, baby becomes healthy, don't know) Practices of mothers regarding prevention of hypothermia and birth asphyxia Practices of mothers regarding breastfeeding (Initiation of breastfeeding – within one hour, 1-24 hours, after one day), reasons for late initiation- Discomfort to mother, no milk secretion, family customs/belief Given colostrum (Yes/N0) If no, reasons- ignorance about advantages, prohibited by elderly female, absence of milk secretion. Harmful for the baby)	No knowledge about advantages of colostrum Reasons for late initiation (n=332) Discomfort to mother (n=56, 16.9%) No milk secretion (n=103, 31%) Beliefs that Colostrum is harmful for baby (198, 66.9%)	Reasons for not giving colostrum= Prohibited by elderly female members (43, 14.5%) customs/belief (n=173, 52.1%) reason for initiating.	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
2	Kannan, Carruth and Skinner (1999) (Data only for Asian Indian mothers in India N=25)	Neonatal feeding practices of Anglo American mothers and Asian Indian mothers living in the United States and India	The infant feeding questionnaire open and closed questions about colostrum and prelacteal feeds. Mothers gave information about initiation of breastfeeding	Colostrum is bad for the baby (n=10/17) Prelacteal feeds given because of a belief that baby is too weak to suck (n=5/17) Colostrum given because baby not able to suck (n=5/17) Beliefs that Prelacteal feeds help flow of urine (n=8/17), Helps baby sleep better (n=7/17), Baby needs energy (n=4/17), Prelacteal feds flush out the meconium (n=4/17)	AI in India did not give colostrum because followed advice of mother or mother in law (n=16/17) Advised to give prelacteal foods by mother and mothers in law (n=9/17) Physicians advise prelacteal feeds (n=7/17)	Traditional to give prelacteal (n=10/17)

Record Number	Author	Article Title	Outcome	Individual	Group
3	Fikree et al (2005)	New-born care practices in low socioeconomic settlements of Karachi, Pakistan	Information on demographics, antenatal care received type of delivery attendant and location of delivery and new-born care practices elicited. Assessment of traditional new-born care practices was based on neonatal feeding and care practices. Giving prelacteal feeds, delaying first feed, providing supplementary feeds, bathing immediately after delivery, using mustard oil for baby massage, instilling nasal / ear drops, and applying substances to umbilical cord. Prelacteal (non-risky practice women reported giving breast, formula OR animal milk. Risky practice was classified as when women gave their babies prelacteal such as honey, water, or tea as the first feed). Delayed first feed- the time that the first feed was given after birth. If feed given within one hour it wasn't considered delayed. If over an hour then considered to be delayed. Supplementary feeds- women who reported only giving breast milk categorised as not give breast milk. Women who gave all other substances including formula or animal milk considered as giving supplementary feeding.	Supplementary feeds of new-born: Formula (n=77, 21%) Honey (n=148, 40.3%) Ghutti (n=143, 39%) Kahwa (n=42, 11.4%) Water (n=61, 16.6%) Rose water (n=24, 6.5%) Gripe water (n=17, 4.6%) Tea/Herbal n= 19 (5.2%) Others (n=36, 9.8%) Health benefits of giving water with sugar and salt. Ghutti and honey perceived health benefits such as reducing colic or as a laxative Giving prelacteal and delaying breastfeeding was perceived as beneficial Prelacteal clean baby's stomach	Mother in laws say that first milk is dirty because it has been stagnant for nine months.

Record Number	Author	Article Title	Outcome	Individual	Group	Social
4	Nagra and Gilani (1987)	Variations in Infant feeding practices in Pakistan with Socioeconomic stratification	Mode/Pattern of feeding Introduction of prelacteal feeds No more information given	Ghutti first food for new-born it was thought to clear gastro intestinal tract Artificial feeds diluted in medium and low socioeconomic groups believing that dilution makes the milk identical to mother's milk	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Social
5	Premji et al (2014)	Sociocultural influences on new-born health in the first 6 weeks of life: Qualitative study in a fishing village in Karachi, Pakistan	Factors the influence mother's decision making re caring for their new-born. Qualitative socio ecological model- provided understanding of the physical and social environments.	-	Mothers in laws influence – guidance about giving 'sulemanai chaye' (traditional tea) to baby so the breast milk is secreted Mothers in law encourage supplementation so that the baby will grow. Breast milk thought not to meet the hunger needs of the baby hence told to supplement.	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
6	Rangaswamy (2013)	Sociocultural factors influencing infant feeding practices in Rural Tumkar	Breastfeeding (Frequency, length of feeding, duration of feeding) Prelacteal feeds (no information on how collected) Discarding colostrum (no information on how collected)	38.8% (n=28) Hindi mothers gave prelacteal 54.8% (n=17) Muslim mothers gave prelacteal 28.5% (n=2) Christian mothers gave prelacteal Insufficient milk/breast problem – reason for not breastfeeding (n=12, 57%) Reason not to breastfeed- breast problem (n=3, 14.2%) Discarding colostrum because not suited for baby's health (n=5, 17.8%)	Didn't breastfeed on advice of grandmother (n=17, 60.71%) Didn't give colostrum on advice of grandmother .	Not giving colostrum because custom/tradition (n=7, 25%) Honey most commonly given prelacteal feed

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
7	Sachdev and Mehrotra (1995)	Predictors of exclusive breastfeeding in early infancy: Operational Implications	Standardised proforma regarding the breastfeeding practices and various demographic, socioeconomic and other factors likely to influence the breastfeeding practices. Proforma covered: Maternal characteristics (age, education, SES status, employment, outcome of previous pregnancies, interval preceding births, previous breastfeeding experience, use of hormonal contraception and mother's weight/height). Family characteristics (fathers age, occupation, education, family type, religion, total family income, household items), Antenatal and perinatal education (intention to bf before delivery, bf propagated by health worker or not, mode of delivery, type of first feed, time of first feed and use of prelacteal and colostrum), Baby's characteristics (feeding status, breastfeeding pattern, type of feed, frequency of breastfeed, age of supplementation and age of cessation). Miscellaneous factors (household help and influence of husband, relative and friends). Supplementation breastfeeding Breastfeeding cessation	Supplementation reasons- Insufficient milk (n=112,52.3) Supplementation reasons- Maternal illness (n=16, 7.5%) Supplementation reasons- Childs illness (n= 7, 3.3%) Supplementation reasons- Breast discomfort (n=5, 2.3%) Supplementation Breast rejection (n=5, 2.3%) Supplementation reason- Breast rejection (n=5, 2.3%) Cessation- breast rejection (n=14, 28%) Cessation- Insufficient milk (n=8, 16%) Cessation = maternal illness (n=8, 16%) Cessation- Lactation failure (n=6, 12%) Childs illness (n=4, 8%)	Cessation reason - Relative advice (n=2, 4%) Supplementation reason- Relative advice (n=14, 6.5%) Supplementation reason- Work (n=20, 9.3%)	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
8	Aggarwal, Arora and Patwari (1998)	Breastfeeding among urban women of low socioeconomic status: Factors influencing introduction of supplemental feeds before four months of age	Supplementary feeding under the age of four months Information gathered on type of family and housing, number of children, awareness of importance of bf, feeding practices in family, antenatal care and motivation for breastfeeding, support of family during pregnancy and child rearing, age of child at introduction of top feeds, reasons for introductions, how adequacy of feeds assessed, and types of feeds introduced. Maternal height, weight, educational status and infant sex and age were recorded.	Supplementation reason Inadequate milk (n=37, 49.3%) Suppl. Reason Maternal illness (n=14, 18.7%) Only N=2 mothers giving formula rest (n=73, 97.3% animal milk.	Sup. Reason Relatives advice (animal milk diluted) (n=8, 10.7%) Supp. Reason Work (n=6, 8%)	Norm that to delay N=42 (62.7%) given breast milk on first day of life rest given it by the third day. 51.3% of infants given supplementary feeding in first 6 weeks of life

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
9	Karande and Perker (2012)	Do father's attitudes support breastfeeding? A cross sectional questionnaire based study in Mumbai, India	The infant feeding attitude scale (IOWA) used to assess parents' attitudes to infant feeding. Breastfeeding exclusivity	Couples shared similar total attitudes which were favourable towards breastfeeding Mothers who breastfed less than a month exclusively had lower attitude scores on: ➢ Benefits of breastfeeding last only as long as the baby is breastfed ➢ Formula feeding more convenient ➢ Breastfed babies are more likely to be overfed than formula ➢ Mother who formula feed misses one of the great joys of motherhood ➢ Breast milk is the ideal food for babies ➢ Breast milk is more easily digested	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
10	Khan, Memon and Bhutti (2013)	A cross sectional study of new-born care practices in Gilgit, Pakistan	A structured 'knowledge, attitudes and practices 'questionnaire was developed. Prelacteal feeds Initiation of breastfeeding	44% of mothers gave prelacteal feeds, such as salt water (26%) cow milk (14%), aab-e zam zam (holy water). Colostrum was given universally. Prelacteal feeds perceived to clean abdomen/stomach/ (26%) positive effect on health (21.2%) and softness of abdomen (12%).	-	Prelacteal feeding is a traditional practice

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
11	Patel, Banerjee and Kaletwad, (2013)	Factors associated with prelacteal feeding and timely initiation of breastfeeding in hospital delivered infants in India	Pretested standardised questionnaire was used to collect information on the mothers age, age at marriage, religion, education, exposure to the media, income, family size, parity, antenatal registration, lactation counselling, problems during pregnancy and mode of delivery. Study outcomes were timely initiation (defined as breastfeeding within one hour of delivery) Prelacteal feeding (defined as administration of Ghutti, honey, water, or other mill) to the new-born before initiation of breastfeeding.	Less education related to prelacteal Being classified as Muslim associated with prelacteal feeding Higher maternal education was associated with timely initiation Fewer years of maternal education, Muslim religion was associated with prelacteal feeding. babies who had delayed initiation, received prelacteal feeding in the form of water, honey, jiggery, sugar, water or other milk. new-born with timely initiation of breastfeeding received prelacteal feeding	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
12	Khadduri et al (2008)	Household knowledge and practices of new-born and maternal health in Haripur district, Pakistan	New-born care practices	Perception that colostrum can kill baby because it is dense, dirty, old milk stored in the breast for 9 months Giving Ghutti (sucked from finger) mix of honey and sometimes saliva to pass on the qualities of the person that gives it. This is often given before breastfeeding. Belief that it cleans the baby's stomach	-	40-day confinement for mothers after birth (chilla)

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
13	Roy, Dasgupta and Pal (2009)	Feeding practices of children in an urban slum of Kolkata	Prelacteal feeding Exclusive breastfeeding	Prelacteal feeding common among those who were not informed about exclusive bf EBF less in literate mithers 29.16% received prelacteal feed in the form of honey, water, infant milk formula, cow milk. 90% (108/120) were fed with colostrum.	- .	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
14	Holman and Grimes, (2001)	Colostrum feeding behaviour and initiation of breastfeeding in rural Bangladesh	Breastfeeding initiation (how many hours after giving birth until the baby was given the breast- never, unknown, or the number of hours) Administration of colostrum – (did you feed the baby colostrum- yes now, unknown)	Older mother s took longer to initiate breastfeeding compared to younger mothers Male infants = delayed initiation 117/130 mothers (90%) reported feeding their child colostrum. n=13 said they hadn't fed their child colostrum.	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
15	Simmie (2006)	Breastfeeding: different ethnic background, different perceptions	Attitudes to infant feeding `` (IWOA infant feeding attitude scale)	Mothers who had a negative attitude more likely to formula feed. Positive attitude to breastfeeding results in increased likelihood to breastfeed. 77.5% of mothers intended to breastfeed before the birth of their child. All mothers who intended to breastfeed did so at birth. Formula feeding more convenient than breastfeeding	Formula feeding just as healthy as breast milk	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
16	Noor and Rousham (2008)	Breastfeeding and maternal mental wellbeing among Bangladeshi	Interview questionnaire covered the background characteristics of women (occupation, education, household members, country of birth, religious identity and others), followed by five questions on maternal mood, then set of questions on the experiences of women during pregnancy and postnatal period, particularly in relation to the access and provision of health services. Women were asked how they fed their baby. Breastfeeding was defined as infants receiving breast milk only, with or without supplementary foods or drinks from cups. Formula feeding was defined as women who bottle fed their infants formula milk and who had not breast fed their child at any stage. Mixed feeding was defined as mothers who both breastfed and bottle fed using formula milk.	Mothers who formula fed were more likely to report feeling sad or crying and felt that everything was too much since having their baby When formula fed and mixed fed babies were combined, breastfeeding was higher in male babies than in female babies. . Mothers who formula fed were more likely to report that they didn't enjoy everyday activities	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
17	Ingram et al (2008)	Exploring the barriers to exclusive breastfeeding in black and minority ethnic groups and young mothers in the UK	Exclusive Breastfeeding	Self-confidence, experience and encouragement from family important for some mothers to keep breastfeeding. Mothers all believed that breastfeeding was best for baby and it was very good nutritionally to offer 'purely mothers milk'	Religion encourages breastfeeding. Family's important sources of advice on how to feed. Partners not seen as a main support for breastfeeding- 'they encouraged with words, but nothing else' Mothers couldn't exclusively breastfeed longer than 6 months as there was no support and many family commitments.	Culture encourages to breastfeed Formula feeding was a direct result of not being able to 'expose themselves and breastfeed in public. Privacy and female only place to breastfeed were important.

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
19	Choudhry and Wallace (2012)	Breast is not always best: South Asian women's experiences of infant feeding in the UK within an acculturation framework	Infant feeding experiences via an interview schedule Acculturation assessed by using an acculturation measure No definitions of specific infant feeding practices	Psychological benefits of the mother's milk (higher IQ, better personalities) Acculturation – low levels protective of breastfeeding. High levels of acculturation to the UK mothers were vulnerable to decreased rates of breastfeeding Formula feeding fulfils the baby's needs	Family members telling mothers that breast milk isn't adequate Conflicting information about benefits of breastfeeding (positive) and their role as a daughter in law (negative) .	Religious teaching was pro breastfeeding Living in a formula feeding culture

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
20	Condon et al (2003)	Cultural influences on breastfeeding and weaning	Infant feeding patterns and weaning. Looked at exclusive breastfeeding which was defined as giving no other milk than breast milk	Breastfeeding is easier for the mother Perception that there was too much emphasis on exclusively breastfeeding – in the UK 'you can get away with more' Most mothers made decision themselves Breastfeeding is best for baby Discard colostrum because thought it blocks breast ducts (immigrants) Poor diets lead to not enough milk (immigrants)	Difficult to feed outside the home (immigrant) Partner supportive of breastfeeding and helping in household chores Muslim women motivated by religious teachings.	Immigrant mum advised by partner to formula feed because it was more fashionable in the UK. Changes in attitudes to an increased bottle-feeding behaviour since moving to the UK.

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
21	Douglas (2012)	Befriending breastfeeding: A home based antenatal pilot for South Asian families	Breastfeeding Topics assessed included the knowledge off the benefits of breastfeeding, positioning and attachment, and where to get support Breastfeeding data were collected at birth and at the primary birth visit at day 10-14 and six weeks.	Perceptions of inadequacy of breast milk led to mix feeding	Family pressures to mix feed	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
22	Evans et al (1976)	Lack of breastfeeding and early weaning in infants of Asian immigrants to Wolverhampton	Breastfeeding	Mothers not intending to breastfeed thought bottle feed was more convenient Mothers who didn't intend to breastfeed gave reasons pertaining to a physical cause (mothers opinion and for some doctor's opinion) Mothers not intending to breastfeed bottle fed because breast milk would upset the baby. Mothers not intending to breastfeed made the decision to not do so based on experience e.g. engorged breast/insufficient milk.	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
23	Arora et al (1985)	Social customs ad beliefs regarding breastfeeding	Social customs and beliefs around breastfeeding Oral questionnaire – collected information on social and family variables and their relationship with breastfeeding in a specially designed proforma of open and closed questions.	Women preferred mixed feeding from an early age (doesn't state which age) Honey, Ghutti water and tea were given to infants. Colostrum feeding often denied During Maternal ill health breastfeeding was stopped Inadequate diet by mothers was also another reason for breastfeeding failure	During Maternal ill health breastfeeding was stopped Inadequate diet by mothers was also another reason for breastfeeding failure	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
24	Ali et al (2011)	Perception and practices of breastfeeding of infants 0-6 months in an urban and semi urban community in Pakistan: A cross sectional study	Exclusive breastfeeding Prelacteal feeding- giving the infant feeds or fluids before initiating breastfeeding at birth Early initiation of breastfeeding- starting breastfeeding within one hour of infant's birth Exclusive breastfeeding- no drinking water or herbal water or any other fluids/feeds having been given to the infant within the first six months since birth or the time limit noted. Colostrum – think, yellow, milky fluid secreted by the mammary glands just before or after parturition.	Educated mothers less likely to give prelacteal feeds Mothers mix fed/supplemented breast milk because of a perception of inadequacy of breast milk Some mothers thought that breastfeeding causes weakness in the mother	-	Prelacteal feeding common- common belief that breast milk is dirty and not nutritious and therefore has to be supplemented.

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
25	Lingam et al (2014)	Understanding care and feeding practices: Building blocks for a sustainable intervention in India and Pakistan	Delayed initiation of breastfeeding	Mothers in Pakistan felt weak after delivery and others felt that they needed help to bathe after the delivery and before breastfeeding. Most women give Ghutti and feed after three days (perception of women) Give baby Ghutti- habits of the person giving Ghutti are transferred to baby by doing this. Milk doesn't come into beast for three days so give something called gadla Breast seen as unclean straight after birth so won't give breast milk until breast is washed and somewhere is there to support this. Perception that colostrum is dirty/old	Many believe important to bath before breastfeeding – this caused delay in initiation.	Ingrained cultural norm of giving prelacteal feeds Give baby Ghutti- habits of the person giving Ghutti are transferred to baby by doing this. Milk doesn't come into beast for three days so give something called gadla Breast seen as unclean straight after birth so won't give breast milk until breast is washed and somewhere is there to support this. Perception that colostrum is dirty/old

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
26	Chaudhuri and Chatterjee (1991)	An exploratory study on infant feeding and weaning practices of a Muslim community settled at Calcutta	Breastfeeding. Information regarding knowledge, attitudes and actual practice of mothers towards infant feeding and weaning were collected prospectively and recorded in pre-designed schedule.	Mothers unaware of the qualities of colostrum. 84% gave some form of prelacteal feed Colostrum harmful for the baby (77%) Prelacteal feeding prevents cough and cold. Specially mixed herbs and honey promote growth and development of babies and act as a digestive tonic	-	Normal custom to start breastfeeding late (on 3rd/4th day)

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
27	Burton-Jeangros (1995)	Breastfeeding among Pakistani mothers living in Britain	Breastfeeding Breastfeeding knowledge and attitudes	Bottle feeding advantageous because it avoids embarrassment of breastfeeding in the presence of other people and can feed outside the home. Someone other than the mother can feed the baby. Disadvantages of breastfeeding is don't know how much baby is having and mother must watch her own diet when she breastfeeds.	Less than half the mothers in the sample had discussed infant feeding with their partner (reasons = not his business, mother was in charge, or this should be discussed with women only)	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
28	Chowdhury et al (1978)	Breastfeeding by urban mothers	Breastfeeding	Mothers artificially breastfed because of misconception. Artificial feeding more common in mothers with higher levels of education Insufficiency of milk was main determinant for artificial feeding in older mothers Younger mother's main determinant was misconception or wrong advice	Mothers artificially breastfed of wrong advice	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
29	Ganjoo and Rowlands (1988)	Breastfeeding and weaning practices of urban housewives of Srinagar	Breastfeeding General information about the mothers feeding practices adopted and different foods given Data collected via questionnaire / interview	Breastfeeding is low cost Literate mothers were less likely to breastfeed Mothers in high income groups were more likely to practice breastfeeding compared to low income groups/ Breastfeeding eliminates preparation of bottles 96% of mothers breastfed their baby 57% of mothers didn't give colostrum. Mothers breastfed because of the nutritional quality of breastmilk Colostrum wasn't given to babies because it was unhygienic and dirty. Bottle milk given after a perception that the breast milk has insufficient nutrients after a year.	Employment of mother's main reason for bottle feeding.	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
30	Kaur, Puri and Bajaj (1983)	Feeding practices among children of different castes in rural Ludhiana	No definition Breastfeeding Prelacteal feeding	All infants were given some food on the day of birth and goat's milk was most popular. Mothers breastfed their baby from the third day Majority of Babies exclusively breastfed	Common practice to give prelacteal feeding	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
31	Ashraf et al (1993)	Early child health in Lahore	Breastfeeding Infant feeding practices recorded at monthly intervals. Information about: Interval between birth and first breastfeed Types of prelacteal feeding Ways of administrating prelacteal feed Subsequent feeding pattern Feeding of water in addition to human milk Dilution of animal milk or formula Duration of breastfeeding Age at termination of breastfeeding. 'Exclusive breastfeeding= human milk only, irrespective of prelacteal feeds Partial breastfeeding – human milk and water, human milk and other foods	-	Breastfeeding related to the seasons. Data showed that in month of January 28% of the mothers in the village breastfed exclusively however this declined to almost zero in May. As the temperature dropped in September- November the incidence of exclusive breastfeeding increased to levels seen in the winter. In poorer areas, maternal milk with additional water was most preferred form of infant feeding.	Culturally mothers believe that milk comes in by the third day hence delay in initiation of breastfeeding. Norm to initiate breastfeeding late (a couple of days after birth) and to give prelacteal feeds (honey, herbs, water). - All new-born received prelacteal even those that were exclusively breastfeeding. Exclusive breastfeeding uncommon

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
32	Bathija and Anand (1987)	Effect of perinatal motivation on breastfeeding in educated mothers	N/A	Motivation to breastfeed associated with higher rates of exclusive breastfeeding	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
33	Kulsoom and Saeed (1997)	Breastfeeding practices and beliefs about weaning among mothers of infants aged 0-12 months	Breastfeeding beliefs and practices Exclusive breastfeeding- infant received only breast milk and no other nutritional fluids or solids except vitamins, mineral supplements or medicines (including prelacteal fluids and herbal fluids) Predominantly breastfed- The infant's predominant source of nourishment was breast milk, but this may have been supplemented with water and water based nutritional drinks (e.g. fruit juices and sweetened water), however no food based fluid. Complementary feeding- The child received both breast and top milk (fresh or formula) Exclusive bottle feeding- The child did not receive breast milk, was given top milk (fresh or formula) were introduced	Beliefs that's 'something' should be given before breastfeeding Water essential for first three days of baby's life Most mothers thought that water essential for new-born in first day of life. Majority of mothers (94%) gave prelacteal feeds before the baby initiated breastfeeding. 65.4% of babies didn't receive colostrum Although all mothers thought breastfeeding to be desirable, only a small number possessed a scientific knowledge about the advantages of breastfeeding and the disadvantages of bottle feeding. Saline given to clean the babies stomach Common reason for breastfeeding cessation and starting the bottle was perception of milk insufficiency Mother not physically fit to be breastfeeding three days after birth Herbal remedies given to new-born to sort out stomach problems Mothers delayed initiation due to insufficient milk or maternal ill health.	Working, shopping and other activities outside the home hindered exclusive breastfeeding. Family members also advised to give prelacteal feed (Sometimes by health care workers)	. Mothers and mothers in law believed that babies should be given other liquids in the three days following birth because milk doesn't come in until after three days. Common cultural practice to give prelacteal feed before breastfeeding and to not give colostrum. Customary to feed honey (morals of individual instilled in infant when he gives this initial feed to baby)

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
34	Kishore, Kumar and Aggarwal (2009)	Breastfeeding knowledge and practices amongst Mothers in a rural population of North India: A community based study	Exclusive breastfeeding Time of initiation Prelacteal use Duration of exclusive breastfeeding Adequacy of breastfeeding and knowledge about the benefits of breastfeeding. Breastfeeding knowledge score (-1 , 0 +1 indicated negative, neutral, positive) Breastfeeding knowledge inadequate if got score of 0-3. Adverse if score was less than 1. Satisfactory if score was more than 4.	39% of mothers had satisfactory knowledge of breastfeeding Earlier the initiation the better the establishment and longer the duration of breastfeeding. Prelacteal were given to just over half the babies (n=39, 51%) Prelacteal feeds included plain water, glucose water, honey, Ghutti and herbal tea.	Lack of breastfeeding counselling= decreased rates of exclusive breastfeeding	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
35	Thimmayamma, Vidyati and Belavady (1980)	Infant feeding practices of working mothers in an urban area	Breastfeeding Information on infant feeding habits	-	Inability to care for the child because lack of adjustment of work between home and office	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
36	Littler (1997)	Beliefs about colostrum among women from Bangladesh and their reasons for not giving it to the new-born	Giving colostrum	Belief that colostrum will not benefit their baby as it was not 'real' milk. If colostrum was thin and watery there was a perception that it was too 'weak' for the baby. Discarded colostrum because waiting for thick full milk Delayed initiation because they were waiting for the thick milk Women hand express colostrum and discard. Only two out of 60 women were aware that colostrum had antibodies Women who described colostrum as thin water felt baby couldn't benefit from it as it wasn't real milk. The thin consistency of the colostrum was weak for the baby. Women chose to breastfeed because it was healthy for baby	Religion major influence in women choosing to breastfeed. 33% were influence by their mothers, mothers in law and sisters.	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
37	Deshpande, Zodpey and Vasudeo (1996)	Infant feeding practices in a tribal community of Melghat region in Maharashtra state	Withholding colostrum	None of the baby's breastfed within two hours.	-	Tradition to not give colostrum. Tradition to give prelacteal feeds as opposed to early initiation of breastfeeding.

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
38	Singh, Haldiya and Lakshminarayana (1997)	Infant feeding and weaning practices in some semi-arid rural areas of Rajasthan	Breastfeeding initiation	Women considered colostrum to be harmful to the baby's health. Colostrum was viewed as dirty and likely to make the baby ill.	Common practice to delay breastfeeding initiation until the third day. (Withholding of colostrum) Discarded colostrum it to social custom and elder's advice. First feed always given my grandmothers or sisters in law which may unnecessarily delay first feed	Discarded colostrum due to cultural traditions

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
39	Kumar, Pant and Chothia (1990)	Maternal knowledge regarding breastfeeding and weaning practices	Maternal knowledge and practices about breastfeeding.	Majority of mothers initiated breastfeeding on the third day after baby being born. Other preparations were given to the baby such as glucose water, honey, water before breast milk.	-	Customary to give things like glucose, honey, water, diluted dairy milk and water before lactation was established.

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
40	Khanum, Umpathy and Begum (1976)	A survey of the attitudes of mothers towards infant feeding	Attitudes towards colostrum feeding, termination of breastfeeding	Mothers from higher socioeconomic status more likely to terminate breastfeeding before six months Colostrum thought to be bad for baby's health	-	Mothers discarded colostrum because culturally thought it is difficult to digest by baby

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
41	Meddings and Porter (2007)	Pakistani women: Feeding decisions	Infant feeding decisions	-	Grandmothers encourage the discarding of colostrum because they think it is old and unsuitable for the new-born. Religion encourages breastfeeding	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
42	Pati et al (2014)	Neonatal care practices in a tribal community of Odisha, India: A cultural perspective	-	Colostrum was discarded in 37/55 cases. Prime reason for discarding was because it was difficult to digest21 of 55 cases breastfeeding was initiated within an hour of delivery.	Prelacteal feeds were common in home delivered babies. Most common prelacteal feeds were ghee, honey, red tea and cow's milk.	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
43	Vimala and Ratnaprabha (1987)	Infant feeding practices among tribal communities of Andhra Pradesh	Existing infant feeding practices Attitude and values towards infant feeding.	95% of mothers breastfed their babies All mothers fed colostrum Child breastfed until next pregnancy of cessation of milk secretion.	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
44	Kushwaha, Mathur and Prakash (1987)	Infant feeding practices of peri urban areas of Gorakhpur	Prelacteal feeds Practice of breastfeeding Practice of bottle feeding	All mothers had given prelacteal feeds in the form of animal milk, honey, sugar plus water alone. Duration of prelacteal feeds varied from 2-4 days. 61.3% (N=96) infants were exclusively breast fed for 9 months 14.8% (N=23) mothers used bottle feeding after the age of three months. Colostrum was discarded by all mothers	-	-

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
45	Williamson and Sacranie (2012)	Nourishing body and spirit: exploring British Muslim mother's constructions and experiences of breastfeeding	Breastfeeding experience/ breastfeeding construction	Belief that Breastfeeding strengthens the baby's moral character Spiritual and psychological nourishing. Breastfeeding supports child's healthy development.	Breastfeeding was endorsed by close relatives and friends.	Breastfeeding imperative for Muslim women Following Allah's will.

Record Number	Author	Article Title	Outcome	Individual	Group	Societal
46	Kumari et al. (1988).	Maternal attitude and practices in initiation of new-born feeding	Breastfeeding knowledge Breastfeeding outcome	Primipara mothers (n=205) 71.7% had nil knowledge about breastfeeding n=69, 25% had fair knowledge n=9 (3.2%) had good knowledge Multipara mothers (n=397) n=391, 98.4% had previous breastfeeding experience n=191, 48.8% had nil knowledge about breastfeeding n=172 (43.9%) had fair knowledge about breastfeeding n=9 (3.2%) had good knowledge about breastfeeding Only 16% had given colostrum First feeds were commonly honey, water, tea, glucose water	-	-

Study and Participant Characteristics for studies included in the Scoping Review.

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics (include ALL info on mothers and babies) SES	Baby characteristics	Ethnicity/Religion
1	Gupta et al (2010)	New-born care practices in urban slums pf Lucknow City, UP	India – urban slums in Lucknow	To study the knowledge and practices related to New-born care in urban slums in Lucknow City	Cross sectional study. Period of study from 2005-2006 No details on data collection tool	524 women (age not given) who had live birth for 1 year preceding data collection. Majority (70%) were nuclear, more than half of mothers were illiterate (59.5%) No information on parity	No information given. All under the age of 1.	n=370 Hindus (70.6%), n=154 Muslims (29.4%)

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
2	Kannan, Carruth and Skinner (1999)	Neonatal feeding practices of Anglo American mothers and Asian Indian mothers living in the United States and India	US /India.	To compare colostrum and prelacteal feeding practices of Anglo American mothers and Asian Indian (AI) mothers living in the US and India	Interviews with 75 mother-infant (n=25 in each group). Infant feeding practice questionnaire administered	Had to be primiparous of middle and upper socio-economic status and older than 19 years. Infants had to be full term. For the Asian Indian mothers, the infant's parents had to be born in India, to have lived in the US for more than one year and less than 8 years and demonstrate fluency in spoken and written English Mean ages of AI mothers in the US and AI mothers in India were different, mothers in India significantly younger than those residing in the US- no details given on age. 14 American mums 8 Indian mums in US 8 Indian mothers in India had baccalaureate degrees. More Anglo-American mothers employed full time Indian mothers had a maternal grandmother living with them	Not given	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
3	Fikree et al (2005)	New-born care practices in low socioeconomic (SE) settlements of Karachi, Pakistan	Pakistan	To explore traditional neonatal beliefs and care practices and to assess predictors of giving prelacteal feeds	Semi structured interviews Qual and quant combined. Five focus groups and 15 in depth interviews conducted in July and August of 2000. Survey also conducted in five low SE settlements in Karachi between Aug. and Nov. 2000	Muslim women who delivered a live baby between 42-56 days postpartum (N=525 filled questionnaire, five focus groups and 15 semi structured interviews). Majority of mothers classified as middle SE group (364, 70.7%). Low SE group (87, 16.9). High SE group (64, 12.4%). Range less than 20 to over 30. Majority 20-29 (N=309, 60%). Mean age = 26years of age. 20 or less (44 (8.5%). 30+ (n=162, 31.5%). Primipara (1 live birth) = N=106, 20.6% Multipara (204 live births) = N=257, 49.9% Grand multipara (more than five live births) =N=152, 29.5%)	Not given	Pakistani

						Majority no formal education (61.7%)		

Record Number	**Author**	**Article Title**	**Country of Origin**	**Aims/Objectives**	**Study design**	**Participant characteristics**	**Age**	**Ethnicity/Religion**
4	Nagra and Gilani (1987)	Variations in Infant feeding practices in Pakistan with Socioeconomic stratification	Pakistan	To collect information pertaining to the feeding patterns of Pakistani infants in different socioeconomic groups.	Longitudinal study. Mode of feeding recorded 24 hours after birth and then every month after that for the first year of baby's life. Information obtained by interviewing Don't know nature of interviewing. Not truly qualitative.	916 infants born in various hospitals in Faisalabad. Infants classified into three socioeconomic groups (high, medium and low) No info on parity No information on education	0-12 months	Pakistani

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
5	Premji et al (2014)	Sociocultural influences on new-born health in the first 6 weeks of life: Qualitative study in a fishing village in Karachi, Pakistan	Pakistan	To explicate sociocultural influences impacting mother's efforts to maintain or improve new-born health	Qualitative phenomenological approach. Data collection between April and august 2010	Women eligible to participate if they had had an uncomplicated normal delivery and live baby birth in the month the study commended, were primigravida or multigravida, had a singleton or twin pregnancy and were from a nuclear or extended family who delivered in the month of study commenced. Mothers of babies less than 6 weeks, their husbands and family's primary decision maker. 10 mothers, 8 fathers and 4 grandmothers too part in interviews. Half of mothers not educated (50%, n=5). Below grade 5 n=2, 20%. Between grade 5 and 10 n=2, 20%. 70% of mothers (n=7) = multiparous. 80% of mothers (n=7) had primary responsibility of child. N=3 30% mother-in- law primary responsibility. Mothers age range26-35 Median 31. Fathers age range 25-37 median 32. Most mothers had one (N=39, 35.45%) or two children (N=51, 46.36%)	Baby demographics (9 infants). 6 (67%) females and 3 (33%) males. 40% (n=4) less than one week. 40% (n=4) 1-2 weeks old. 20% (2) 2-3 weeks old.	Pakistan

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
6	Rangaswamy (2013)	Sociocultural factors influencing infant feeding practices in Rural Tumkar	India	To study the socio demographic and cultural factors influencing infant feeding practices in rural area	Cross sectional study (pretested questionnaire). From sept. 2010 to sept 2011	110 mothers recruited. Full term babies 110 children from 0-1 year. Age of mothers ranged from 16-30. Most mothers had one (N=39, 35.45%) or two children (N=51, 46.36%) No information on education	Not given	Majority N=72 (79.2%) Hindu. Muslim n=31, 34.1. Christian n=7, 7.7%.

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
7	Sachdev and Mehrotra (1995)	Predictors of exclusive breastfeeding in early infancy: Operational Implications	India	To evaluate independent predictors of exclusive breastfeeding in early infancy	Cross-sectional multivariate comparison of different breastfeeding categories (questionnaire)	Mothers of 500 children 0-6 months No information on parity	0-6 months	India

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
8	Aggarwal, Arora and Patwari (1998)	Breastfeeding among urban women of low socioeconomic status: Factors influencing introduction of supplemental feeds before four months of age	India	To find out various reasons for early introduction of supplementary feeds in infants who were initially breastfed	Qualitative interviews	Mothers of infants who were initially breastfed and started supplementary feeds before four months of age. 75 randomly selected. Majority of mothers were between 20-30 years. N = 36/75 illiterate. N=62/75 non-working. N=47/75 living in nuclear family. No information on parity	46 (61.3%) males and 29 (38.7%) females. 73 (97.3%) born by normal delivery	India

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
9	Karande and Perker (2012)	Do father's attitudes support breastfeeding? A cross sectional questionnaire based study in Mumbai, India	India	To explore the relationship between maternal and paternal infant feeding attitudes and their impact on duration of exclusivity of breastfeeding	Prospective Questionnaire based cross sectional study.	238 couples of infants older than 6 months younger than a year were included. Majority of the couples belonged to upper lower socio-economic status (N=241, 89.9%). Most of mothers had been educated to primary school level (N=101, 42.4%). Mean age of mothers was 24.9 years. Mean age of fathers was 29.3 years. First born (N=67, 28.2%) Second born (N=93, 39.1%) Third (N=57, 23.9%) Fourth or more (N=21, 8.8%)	Male (N=131, 55%)) Female (N=107, 45%).	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
10	Khan, Memon and Bhutti (2013)	A cross sectional study of new-born care practices in Gilgit, Pakistan	Pakistan	To explore the traditional new-born care beliefs and practices and to identify factors that affect new-born health.	A cross sectional study. Structured questionnaire (Knowledge, attitudes and practices survey questionnaire). Conducted over a period of six months,	708 mothers who gave birth to a live child in the past year Majority of mothers were illiterate (N=403, 57.5). Mean maternal age was 27 years of age. No parity information	Not given	Pakistani

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
11	Patel, Banerjee and Kaletwad, (2013)	Factors associated with prelacteal feeding and timely initiation of breastfeeding in hospital delivered infants in India	India	Rates of timely initiation of breastfeeding and prelacteal feeding, factors associated with these practices	Cross sectional study (interviews) Pretested standardised questionnaire. Conducted between February and October 2008.	500 women who had delivered live babies who consented to be interviewed within a day of delivery were included. Majority educated to primary level (N=350/500, 70%), Hindu (N=345, 69%) Mean age 24.4 years Only information on whether child was first in birth order (N=284, 56.8%)	N=504	Hindi (69%) Muslim (18.8%) Other (12.2)

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Baby characteristics	Ethnicity/Religion
12	Khadduri et al (2008)	Household knowledge and practices of new-born and maternal health in Haripur district, Pakistan	Pakistan	To learn about household maternal and new-born health knowledge and practices	43 Semi structured interviews and 34 focus groups	Mothers and fathers of children born in the past 6months regardless of outcome. mothers and fathers of children born in the past 6 months regardless of outcome No demographic information No information on parity	N/A	Pakistani/Muslim

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
13	Roy, Dasgupta and Pal (2009)	Feeding practices of children in an urban slum of Kolkata	India	To assess the feeding practices of the children in an urban slum	Cross-sectional study Interviews/questionnaires. mothers were interviews using a questionnaire	Interviewing mothers of children aged 6 months to two years. Nuclear family 79/120 65.9% nuclear family 98/120, 81.6% literate mothers 83/120, 69.1% were housewives No information on parity	N/A	72.5% Hindus 25.8% Muslims 1.7% other

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
14	Holman and Grimes, (2001)	Colostrum feeding behaviour and initiation of breastfeeding in rural Bangladesh	Bangladesh	To examine the prevalence of colostrum feeding and time to initiation of breastfeeding	Prospective study using questionnaire. Baseline study was conducted in February 1993 among all households in 28 villages in which a total of 3290 married women from 18-48 years of age were interviewed. Subjects for the follow up were selected from 17 baselines villages in which the contraceptive prevalence was lowest. To be eligible for follow up a woman had to be aged between 18-48 years, married, living with husband and not contracepting. PPs that gave birth were followed up for an additional period of up to one month until they became ineligible.	Women aged 18-48, married, living with husband and not using contraception. 143 women recruited. No information on demographic	No information	Bangladeshi

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
15	Simmie (2006)	Breastfeeding: different ethnic background, different perceptions	UK	The study aims to identify the attitudes of mothers who breast and formula feed their babies from Asian and Caucasian ethnic backgrounds.	Survey design. All women visiting a shopping centre were invited to participate. Mothers provided a retrospective sample of both breast and formula feeding practice. Mother if infants that were two years or younger. 102 participants were interviewed	Excluded from study of baby was older than 2 and if they were not Asian or Caucasian ethnic background. No demographic information	No information	South Asian mothers (were either Indian or Pakistani), No mention of country of birth

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
16	Noor and Rousham (2008)	Breastfeeding and maternal mental wellbeing among Bangladeshi	UK. west end of Newcastle	To explore the relationship between infant feeding and maternal mental wellbeing among women of Bangladeshi and Pakistani ethnicity; and to explore the sources of advice, information and support available to women before and after childbirth	A cross sectional survey of infant and maternal wellbeing via structured interviews.	Women of south Asian ethnicity who had a baby within the last two years. 63% were born in Bangladesh 19% born in Pakistan 19% born in the UK 31 of 86 mothers unable to understand spoken English. Most mothers born in overseas (N=70) Bangladeshi mothers (N=56/86). Mothers age at leaving education 16-18 years (N=35) No parity information	Mean age was 28.1 and infant was 0.65 years.	65% Bangladeshi, 33% Pakistani and 2% Indian.

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
17	Ingram et al (2008)	Exploring the barriers to exclusive breastfeeding in black and minority ethnic groups and young mothers in the UK	UK	To explore the barriers to excusive breastfeeding to 6 months within minority ethnic groups or socially disadvantaged groups of women and. Ascertain what strategies would help to overcome these barriers, including peer support schemes.	Qualitative focus groups Focus groups held between July 2006 and January 2007. 22 women attended the groups 2 focus groups in total with South Asian mothers.	Mother who had a baby within the previous 10-18 months and who had breastfed for at least a few weeks were previously sampled and approached. 12 mothers in sample Mean age of south Asian mother was 30 years No demographic information	Mothers age ranged from 20-40 – Mean age 31.3	South Asian No information on individual sub-groups No information on country of birth but does not mention use of translators.

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
19	Choudhry and Wallace, (2012)	Breast is not always best: South Asian women's experiences of infant feeding in the UK within an acculturation framework	UK	To explore whether acculturating to the UK had detrimental effects on breastfeeding practices of South Asian women and to provide explanations as to how acculturation may have exerted its influence	Descriptive Qualitative study-, semi structured interviews	Opportunistic sample of 20 South Asian mothers attending one of four children centres. Inclusion criteria- women had to be of South Asian origin, users of the children centres, were if childbearing age and were either expecting a baby or already with a child under the age of five. 23 mothers invited. 20 mothers participated (11 born in the UK, nine born in Pakistan) No demographic information	N/A	Pakistani

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
20	Condon et al (2003)	Cultural influences on breastfeeding and weaning	UK	To examine the qualitatively the attitudes of women from a variety of ethnic minority groups towards breastfeeding and weaning and their perceptions of attitudes among significant others such as family	Focus groups and telephone survey	Women from Pakistani and Bangladeshi background who had breastfed a baby within the last year were invited to take part in mono cultural focus groups. 26 women from black or Asian backgrounds (Focus groups). Average age of mothers in focus groups 29 years 5 Pakistani mothers (Focus groups) 9 Bangladeshi mothers (Focus groups) 2 Asian mothers (Focus groups) 6 Pakistani (telephone survey) 3 Indian (Telephone survey) 2 Bangladeshi (Telephone survey	Mean age of focus groups overall 29 years Mean age of telephone survey 28 years	Two Pakistani groups took place, one comprising women who had first come to live in the UK within the last ten years and other with those who had been born in the UK or been resident for over 20 years

						No demographic information		

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
21	Douglas (2012)	Befriending breastfeeding: A home based antenatal pilot for South Asian families	UK	Redesign current services to dress inequality t=of access and consider potential for home based antenatal pilot for South Asian families to increase breastfeeding rates at six weeks. The project also aimed to produce evidence to guide practice to better connect with this group	Pilot study	Small self-selecting sample. All pregnant women of south Asian origin within a catchment area of three children's centres in high ethnicity were invited. No demographic information	N/A	South Asian No mention of country of birth

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
22	Evans et al. (1976)	Lack of breastfeeding and early weaning in infants of Asian immigrants to Wolverhampton	Living in the UK. Mothers mainly came from the Punjab or rural areas of India	To document the infant feeding practices among a group of Asian immigrant mothers and to determine why they abandoned breastfeeding	Survey/Interview? Not clear	50 consecutive Asian immigrant mothers who were delivered of normal term infants 36% said they could read English. Average time spent in the UK was 6 years (range 1.5 years- 13 years) No information on demographics	N/A	Indian 39/50 (78%) came originally came from the rural Punjab.

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
23	Arora et al (1985)	Social customs ad beliefs regarding breastfeeding	India	To investigate the social customs and beliefs regarding breastfeeding prevalent in Western Rajasthan	Questionnaire	Of the 300 women, 65.3% were residents in an urban area, majority believed in inaugural feeding (92.7%). No demographic information	Age range of mothers was 15-42 years Mean age 28.1 years	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
24	Ali et al (2011)	Perception and practices of breastfeeding of infants 0-6 months in an urban and semi urban community in Pakistan: A cross sectional study	Pakistan	To investigate mother's perception and practices about breastfeeding and their socio demographic correlate in infant's equal to or less than 6 months old	An interview based cross sectional study. Duration of study was between Nov. 2007 and February 2008.	200 infant – mother pairs were included with convenience sampling method. Mothers who visited the Mother and Child centre. Mothers who had delivered a single full term and appropriate for gestational age baby were included in the study. Information on education unclear No demographic information	N/A	Not provided

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
25	Lingam et al (2014)	Understanding care and feeding practices: Building blocks for a sustainable intervention in India and Pakistan	Pakistan	An increased understanding of caregiving beliefs, perceptions and practices.	Qualitative interviews	Pregnant women, mothers of children aged 0-24 months, fathers, grandmothers and community health workers No info on demographic No demographic information	Majority of mothers were pregnant or had 13-24 months	Indian and Pakistani

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
26	Chaudhuri and Chatterjee (1991)	An exploratory study on infant feeding and weaning practices of a Muslim community settled at Calcutta	India	To explore the knowledge, attitude and practice of mothers regarding infant feeding and weaning.	Prospective study No information on methods	Those attending the obstetric ward of Islamic hospital, where the mothers were admitted for delivery. Consecutive hundred mothers were takes as index cases throughout on year of study. No information on demographic	NA	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/ Religion
27	Burton-Jeangros (1995)	Breastfeeding among Pakistani mothers living in Britain	Pakistan-moved to the UK	To investigate infant feeding practices among Pakistani mothers living in Cardiff and to identify and analyse the major factors influencing their choice of feeding method.	Semi standardised questionnaire	All Pakistani women living in Cardiff with a baby aged less than 12 months were considered eligible. 18 mothers interviewed. All women were married. Only one born in the UK rest born in Pakistan. Just over half (56%) had been in the UK less than ten years. Four of them women had never been to school. None of the mothers except for one was working. Information on education and demographics unclear No information on parity	Majority of the mothers were aged between 20-29. 10/19 (56%) were aged between 20-29 years	Pakistani

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
28	Chowdhury et al (1978)	Breastfeeding by urban mothers	India	Exploration of breastfeeding practices and influence of SES on such practices	Questionnaire design	Mothers must be Bengali and babies must be of three months to one year of age. 500 mothers attending a well-baby clinic Majority aged 20-25 years (N=270, 54%) No information on parity Educational information unclear	Age ranged from 16-38 years of age, majority of them being 20-30 years old. No ages for babies ranged from 3 months-1 year old.	Bengali

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
29	Ganjoo and Rowlands (1988)	Breastfeeding and weaning practices of urban housewives of Srinagar	India	To examine the existing practices of breastfeeding followed by mothers	Questionnaire come interview	125 participants. Half of sample was illiterate Just under half of sample belonged to the low-income group. Mothers were mainly housewives and belonged to Muslim religion. 52% of mother's illiterate. 56% nuclear. 67.2% were housewives No information on parity	Infants were aged between 6-12 months	Indian Muslims

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
30	Kaur, Puri and Bajaj (1983)	Feeding practices among children of different castes in rural Ludhiana	India	Aimed to study the physical, social and economic factors associated with prevalence of breastfeeding and weaning practices among rural mothers of Ludhiana	Qualitative interviews	Sample of 1189 children under the age of 2 years were selected with the family as the unit of study. Most families were nuclear No information on education No information on parity	NA	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
31	Ashraf et al (1993)	Early child health in Lahore	Pakistan	Describes feeding practices as observed in four areas of changing urbanisation	Longitudinal study. Infants followed from birth to 24 months	Cohort of 1476 infants who were registered at birth. No info on socio-economic status No information on parity	0-24 months	Pakistani

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
32	Bathija and Anand (1987)	Effect of perinatal motivation on breastfeeding in educated mothers	India	To find out the influence of motivation, if any, on breastfeeding in educated mothers	Retrospective interviews	100 mothers selected form antenatal care clinics in hospitals. the minimum educational level required was secondary school leaving certificate (100 acted as control given no information) 2 groups those given information on breastfeeding (motivation group) No demographic info No information on parity	NA	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
33	Kulsoom and Saeed (1997)	Breastfeeding practices and beliefs about weaning among mothers of infants aged 0-12 months	Pakistan	To obtain information about prevalent local beliefs and practices about infant feeding. The aim of the study was to develop culturally specific messages that would help modify harmful feeding practices and thus reduce infant morbidity and mortality.	Longitudinal study. Focus groups. Pretested questionnaire to collect demographics	51 mothers included. Mean age 26.5 years. Range 15 years – 35 years. Majority of mothers literate N=30, 57.7% and of low socioeconomic (N=30, 57.7%) No information on parity	NA	Pakistani

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
34	Kishore, Kumar and Aggarwal (2009)	Breastfeeding knowledge and practices amongst Mothers in a rural population of North India: A community based study	India	To study the knowledge and prevailing practices among the rural mothers, with emphasis on exclusive breastfeeding behaviour and the factors influencing it.	Qualitative interviews	Mothers of all infants aged between 0-6 months were eligible 77 mothers were included. A quarter of mothers were living in 'kutcha' house (house made of mud and clay), same proportion had low SES. Majority of mothers N=55, 71% beyond primary school education. Were of low SES No information on parity		Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
35	Thimmayamma, Vidyati and Belavady (1980)	Infant feeding practices of working mothers in an urban area	India	To obtain information on: The prevalent infant feeding practice with special reference to breastfeeding The nature of problems faced by the mother in taking proper care of her infants The requirements and opinions or working mothers as to the nest environmental conditions which would allow satisfactory care	Questionnaire design	500 working mothers each of which had a child under the age of two. Mothers belonged to institutions where there were predominantly women employees. Mean income of mothers was Rs583 per month and increased with level of education and nature of occupation. No information on educational attainment No information on parity	Mean age of mothers was 28 years (range 20-43 years)	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
36	Littler (1997)	Beliefs about colostrum among women from Bangladesh and their reasons for not giving it to the New-born	UK	To explore knowledge of why colostrum is omitted and what women believe about it. Core questions were: What do women from the Bangladeshi community and tradition believe about colostrum Why does the practice of its omission from early feeding exist? For how many days is colostrum Who or what influences these choices and beliefs	Interviews and Questionnaires	Healthy Bangladeshi women were approached in the postnatal wards of the hospital after recent uncomplicated vaginal delivery of a healthy baby. 58/60 non-English speaking No demographic information	NA	Bangladeshi

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
37	Deshpande, Zodpey and Vasudeo (1996)	Infant feeding practices in a tribal community of Melghat region in Maharashtra state	India	To assess the infant feeding practices of tribal mothers in the Melghat region in Maharashtra state inhabited by tribe	Interviews	494 infants, 251 (50.8%) were males while 243 females (49.2%) No demographic information	NA	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
38	Singh, Haldiya and Lakshmina (1997)	Infant feeding and weaning practices in some semi-arid rural areas of Rajasthan	India	To find out the prevailing infant feeding and weaning practices in this area so that the information can be utilised in planning effective traditional education programmes for this area	Interviews	328 rural mothers. Majority of the mothers were illiterate, engaged in agriculture. Majority belonged to low and middle socio-economic status. No information on parity	NA	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
39	Kumar, Pant and Chothia (1990)	Maternal knowledge regarding breastfeeding and weaning practices	India	To assess the knowledge of mothers of high income group of urban Baroda related to breastfeeding and weaning.	Questionnaires	Children in the age group of 4 months- 18 months, monthly capita of RS500. Sample of 40 mothers selected. No demographic information	NA	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
40	Khanum, Umpathy and Begum (1976)	A survey of the attitudes of mothers towards infant feeding	India	To study the attitudes of mothers about infant feeding	Questionnaire	500 mothers interviewed that were admitted to three hospitals and two clinics in Mysore 68% of mothers were illiterate No information on parity	Majority of mothers were aged between 20-30 years old. Majority of mothers interviewed were illiterate.	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
41	Meddings and Porter (2007)	Pakistani women: Feeding decisions	UK	To investigate what is known about intentions and decisions regarding infant feeding with a view to increasing breastfeeding rates	Literature review	Pakistani women and infant feeding No demographic information	NA	Pakistani

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
42	Pati et al (2014)	Neonatal care practices in a tribal community of Odisha, India: A cultural perspective	India	To assess perinatal and antenatal practices in a tribal community	Qualitative interviews	Mothers who had babies less than 60 days old at the time of data collection. 55 mothers interviewed in total, n -23 (41%) aged 21-25 years, 15 (27%) were 15-20 years, 14 (25.5%) were 26-30 years and 3 (5.5%) were over 30. 46/50 were illiterate. 9 had either primary or high school education No information on parity	See participant characteristics	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
43	Vimala and Ratnaprabha (1987)	Infant feeding practices among tribal communities of Andhra Pradesh	India	To assess existing infant feeding practices	12 tribal villages randomly selected. Survey design	100 nursing mothers with 0-12 months aged infants from 12 villages. 90% were illiterate and most (65%) were a nuclear family. No information on parity	Age range 16-30 years	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
44	Kushwaha, Mathur and Prakash (1987)	Infant feeding practices of peri urban areas of Gorakhpur	India	To know he state and nature of prelacteal feeding To know the practice of breastfeeding, its supplement and to know the state of bottle feeding, animal milk and commercial mike feeding.	Survey design conducted in district hospital in Gorakhpur	155 lactating for a period of one year were interviewed. No information on demographics	Not given	Indian

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
45	Williamson and Sacranie (2012)	Nourishing body and spirit: exploring British Muslim mother's constructions and experiences of breastfeeding	UK	How women from the Muslim community construct and experience breastfeeding	Phenomenological semi structured interviews	Women who were British citizens, self-identified as Muslim, and who practised their faith through self-reports of following the five pillars of Islam. For the first interview, women needed to have had ongoing experience of breastfeeding of at least 3 months duration of an infant of no more than 12 months. In total six married women No demographic information	aged between 32 and 42	British Muslim

Record Number	Author	Article Title	Country of Origin	Aims/Objectives	Study design	Participant characteristics	Age	Ethnicity/Religion
46	Kumari et al. (1988).	Maternal attitude and practices in initiation of new-born feeding	India	To explore knowledge, attitudes and new-born feeding practices of mothers.	Qualitative interviews	702 mothers, 305 were primipara and 297 multiparas. 92% of mothers were housewives. 57% mothers belonged to joint families. Only 13.4% of mothers had received breastfeeding advice. No demographic information Primipara (N=305/702) Multipara (N=297/702)	NA	Indian

Draft Interview themes for mothers

Introductory briefing

Feeding intentions (explore influences on intentions)

Awareness of health benefits of breastfeeding

Explore beliefs about how you should feed your baby

(Special religious/cultural practices that are celebrated – may involve giving baby food or drink other than breast milk

Beliefs about when mother should start breastfeeding?
Beliefs that may influence a mother to formula feed?

Do you follow any of these beliefs?

The role of other family members in making decision on how to feed the new-born babies in your culture??

Do you believe different sub-groups have different beliefs about how their babies should be fed?

How do people in the UK feed their baby?

In your opinion, do SA families who live in UK longer change the way they feed their babies? If yes, how?

What reasons may there be for mothers to feed their babies formula? What reasons may there be for mothers to breastfeed?

Research suggests that babies should be exclusively breastfed for 6 month, what do you think can be done to help achieve this?

Cultural influences/ practices/rituals that may impact on infant feeding

- Giving of 'Ghutti', honey immediately after baby was born.
- 'Hot/Cold' foods and their relation to infant feeding
- Prelacteal foods
- Giving/withholding of colostrum
- The notion of being 'Napak' unclean (some mothers may delay breastfeeding until mother is clean)
- Thoughts about when mother should initiate (some teaching suggest that should be started on the fourth/fifth day after baby is born)
- Early weaning

Mothers experiences immediately after birth

Intentions versus actual behaviour- if there was a difference between the two how did that make them feel

What were your experiences of feeding your baby straight after the birth]

- Skin to skin (did they engage in skin to skin- reasons for doing so/not doing so)
- Initiating breastfeeding (Did mother initiate breastfeeding. Explore reasons for doing so/not doing so)

Mother's experiences of feeding

- Beliefs about breastfeeding – how they were advised to feed (By whom). Benefits of chosen method of feeding over other methods
- Reasons for choosing method of feeding (biggest influences on this decision, explore the Decision making process. Are women aware of the benefits of breastfeeding)?
- Influences/determinants of chosen method (family members- use of genograms/Ecomaps to map out significant relationships and their influences). Explore in detail what they perceive the role of the husband and mother in law in the decision making process.
- Is advice given similar/dissimilar to their own thoughts – what will happen if don't follow advice

- How the process of immigrating has impacted on their beliefs and practices about breastfeeding and other feeding methods

Support services

- Services that they have used/ intend to use
- Facilitators and barriers to using services

Demographic details

(This section would normally be quantitative- A series of tick box questions/answer. Past experience suggests that these questions work quite well when incorporated into the interview for most of the women)

- Mothers age
- Age at which mother left full time education
- Born in the UK/born outside UK
- Level of acculturation (Via validated acculturation scale)
- Parity
- Type of delivery
- Type of feeding method adopted for their baby
- Employment

Grandmothers Participant Information Sheet

Title of Project: South Asian mothers' experiences of infant feeding within an acculturation framework.

Before you decide please read the following:
What is this study about?
This is PhD study is asking grandmothers like yourselves to share your experiences of supporting the feeding of your grandchild (whether those experiences are good or bad) and the factors that may have had an impact on the advice you gave about infant feeding. We would also like to understand how living in the UK has had an impact on your advice about infant feeding (particularly in terms of social and cultural factors that you may have experienced)

Why have I been chosen?
You have been invited to participate in this study because you are a mother/ mother in law of a mother accessing (left blank) services, a Children Centre located in (blank) or have been identified by other mothers/grandmothers as someone who may be interested in taking part in the study. We are interested in your beliefs/experiences regardless of how your grandchild was fed (whether that was breastfeeding, mix feeding or bottle feeding).

Do I have to take part?
No. It is entirely up to you to decide whether or not you would like to take part. If you do decide to participate, you are free to withdraw at any time during participation. You do not have to give a reason as to why you may not wish to take part in this study. If after completing the study you decide you would like to withdraw your data, you may do so for a period of up to two weeks. You can do this by contacting the researcher on the telephone number / email address below and provide your unique identifier code which will be given to you after you consent to take part. After two weeks your data will have been added to that of others for the purpose of analysis. There are no consequences to deciding that you no longer wish to participate in the study.

What will be involved/ what am I being asked to do?
You will firstly be asked to complete a consent form if you do decide to take part. You will then be asked to take part in a semi structured interview which is designed to gain a better understanding of your views. This will be an informal opportunity for you to talk about your experiences and there are no right or wrong answers. We are simply interested in learning about you and your experiences. The interview will be audio recorded as it will ensure that all the information you give is accurately captured.

All the information provided in this study will remain confidential and there will be no way to identify you in the results. The interview can take place in a number of locations (e.g. at MAMTA, at the University, over the telephone or at your home). The location will be dependent on what is most convenient for you. It is anticipated the study will take between 40-60 minutes.

What are the possible disadvantages and risks of taking part?
We are not aware of any significant risks to you in taking part. All data will be processed in accordance with the Data Protection Act 1998 and stored at the Centre for Technology Enabled Health Research. Manual data will be kept in locked filing cabinets with access restricted to the main researcher. All consent forms will be stored separately from the main data, again in restricted access locked filing cabinets. All electronic data will be stored on the Coventry University password protected network.
As mentioned earlier, you have the right to withdraw. You can stop at any point if you are feeling uncomfortable without giving a reason; simply let the researcher know you wish to withdraw and you will be debriefed. You will be giving up between 40-60 minutes of your time to take part in this study.

What are the possible benefits of taking part?
You are being given the opportunity to help progress research in this area. Currently there is a significant gap in the understanding of South Asian grandmothers' infant feeding experiences.

Will my taking part in the study be kept confidential?
All the information you provide will be kept confidential. There will be no way to identify you in any report.

What will happen to the results of the research study?
The results of this study will be written up as a part of a thesis and the results will be disseminated at academic conferences and written up for publication.

Who is organising and funding the research?
This study is funded by the Faculty of Health and Life Sciences at Coventry University as part of a PhD.

Who has reviewed the study?
This project has been reviewed and approved by Coventry University Ethics.

Contact for further information
If you would like any further information about this research or have any queries or concerns, please get in touch with the details below:

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South Asian mothers' experiences of infant feeding within an acculturation framework.

Informed Consent Form

The study will ask you to talk about your beliefs and experiences of supporting infant feeding and the factors that may influence choice of feeding . Please ensure that you have fully read the participant information sheet provided (Version one). If you have any questions or queries about the study please feel free to ask the principal investigator before consenting to take part.

	Please tick/initial
1. I confirm that I have read and understood the participant information sheet for the above study and have had the opportunity to ask questions.	
2. I understand that my participation is voluntary and that I am free to withdraw at anytime without giving a reason.	
3. I understand that all the information I provide will be treated in confidence	
4. I understand that I also have the right to change my mind about participating in the study for a short period after the study has concluded (*insert deadline here*).	
5. I agree to be filmed/recorded *(delete as appropriate)* as part of the research project	
6. I agree to take part in the research project	

Name of participant: .....

Signature of participant: .....

Date: .....

Witnessed by (if appropriate): .....

Name of witness: .....

Signature of witness: .....

Name of Researcher: .....

Signature of researcher: .....

Date: .....

Certificate of Ethical Approval

Applicant:

Kubra Anwar

Project Title:

South Asian womens infant feeding beliefs and experiences within an acculturation framework.

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

Date of approval:

20 August 2015

Project Reference Number:

P33210

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Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups

ALLISON TONG[1,2], PETER SAINSBURY[1,3] AND JONATHAN CRAIG[1,2]

Draft Interview Schedule themes for Grandmothers

Grandmothers own experiences of feeding

- Beliefs about breastfeeding – how they advised their daughter/daughter in law to feed . Benefits of chosen method of feeding over other methods
- Skin to skin (did they encourage in skin to skin- reasons for doing so/not doing so)
- Initiating breastfeeding (Did mother initiate breastfeeding. Explore reasons for doing so/not doing so)
- How the process of immigrating has impacted on their beliefs and practices about breastfeeding and other feeding methods

Choice of feeding method

- Reasons for advising on chosen method of feeding (biggest influences on this decision, explore the decision making process).
- Influences/determinants of chosen method (family members- use of genograms/Ecomaps to map out significant relationships and their influences). Explore in detail what they perceive the role of the father, mother and mother in law in the decision making process .

Cultural influences/ practices/rituals that may impact on infant feeding

- Giving of 'Ghutti', honey immediately after baby was born.
- 'Hot/Cold' foods and their relation to infant feeding
- Prelacteal foods
- Giving/withholding of colostrum
- The notion of being 'napak' unclean (some mothers may delay breastfeeding until mother is clean)
- Thoughts about when mother should initiate (some teaching suggest that should be started on the fourth/fifth day after baby is born)
- Early weaning

Demographic details

(This section would normally be quantitative- A series of tick box questions/answer. Past experience suggests that these questions work quite well when incorporated into the interview for most of the women)

- Grandmothers age
- Born in the UK/outside UK
- (Ask about socio economic status ?)
- Level of acculturation (Via validated acculturation scale)

South Asian mothers' experiences of infant feeding within an acculturation framework.

Informed Consent Form

The study will ask you to talk about your beliefs and experiences about infant feeding and the factors that may influence choice of feeding . Please ensure that you have fully read the participant information sheet provided (Version one). If you have any questions or queries about the study please feel free to ask the principal investigator before consenting to take part.

	Please tick/initial
1. I confirm that I have read and understood the participant information sheet for the above study and have had the opportunity to ask questions.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at anytime without giving a reason.	☐
3. I understand that all the information I provide will be treated in confidence	☐
4. I understand that I also have the right to change my mind about participating in the study for a short period after the study has concluded (*insert deadline here*).	☐
5. I agree to be filmed/recorded *(delete as appropriate)* as part of the research project	☐
6. I agree to take part in the research project	☐

Name of participant: .....

Signature of participant: .....

Date: .....

Witnessed by (if appropriate): .....

Name of witness: .....

Signature of witness: .....

Name of Researcher: .....

Signature of researcher: .....

Date: .....

Participant Information Sheet

Title of Project: South Asian mothers' experiences of infant feeding

Before you decide please read the following:
What is this study about?
This is a PhD study is asking mothers like yourselves to share your experiences of feeding your baby (whether those experiences are good or bad) and the factors that may have had an impact on your choice of feeding. We would also like to understand how living in the UK has had an impact on your choice of feeding (particularly in terms of social and cultural factors that you may have experienced)

Why have I been chosen?
You have been invited to participate in this study because you are a mother accessing (blank) services, a Children Centre located in (blank) or have been identified by other mothers as someone who may be interested in taking part in the study. We are interested in your experiences regardless of how you fed your baby (whether that was breastfeeding, mix feeding or bottle feeding).

Do I have to take part?
No. It is entirely up to you to decide whether or not you would like to take part. If you do decide to participate, you are free to withdraw at any time during participation. You do not have to give a reason as to why you may not wish to take part in this study. If after completing the study you decide you would like to withdraw your data, you may do so for a period of up to two weeks. You can do this by contacting the researcher on the telephone number / email address below and provide your unique identifier code which will be given to you after you consent to take part. After two weeks your data will have been added to that of others for the purpose of analysis. There are no consequences to deciding that you no longer wish to participate in the study.

What will be involved/ what am I being asked to do?
You will firstly be asked to complete a consent form if you do decide to take part. You will then be asked to take part in a semi structured interview which is designed to gain a better understanding of your experiences. This will be an informal opportunity for you to talk about your experiences and there are no right or wrong answers. We are simply interested in learning about you and your experiences. The interview will be audio recorded as it will ensure that all the information you give is accurately captured.
All the information provided in this study will remain confidential and there will be no way to identify you in the results. The interview can take place in a number of locations (e.g. at

MAMTA, at the University, over the telephone or at your home) . The location will be dependent on what is most convenient for you. It is anticipated the study will take between 40-60 minutes.

What are the possible disadvantages and risks of taking part?
We are not aware of any significant risks to you in taking part. All data will be processed in accordance with the Data Protection Act 1998 and stored at the Centre for Technology Enabled Health Research. Manual data will be kept in locked filing cabinets with access restricted to the main researcher. All consent forms will be stored separately from the main data, again in restricted access locked filing cabinets. All electronic data will be stored on the Coventry University password protected network.
As mentioned earlier, you have the right to withdraw. You can stop at any point if you are feeling uncomfortable without giving a reason; simply let the researcher know you wish to withdraw and you will be debriefed. You will be giving up between 40-60 minutes of your time to take part in this study.

What are the possible benefits of taking part?
You are being given the opportunity to help progress research in this area. Currently there is a significant gap in the understanding of South Asian women's infant feeding experiences.

Will my taking part in the study be kept confidential?
All the information you provide will be kept confidential. There will be no way to identify you in any written up report.

What will happen to the results of the research study?
The results of this study will be written up as a part of a thesis and the results will be disseminated at academic conferences and written up for publication.

Who is organising and funding the research?
This study is funded by the Faculty of Health and Life Sciences at Coventry University as part of a PhD.

Who has reviewed the study?
This project has been reviewed and approved by Coventry University Ethics.

Contact for further information
If you would like any further information about this research or have any queries or concerns, please get in touch with the details below:

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Additionally, please use contact details below for any concerns, questions or dissatisfaction regarding the research:

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Table 25- Summary of the aims, research questions, sample, methodology and headline findings from each of the chapters of the thesis.

Chapter	Aims	Research Question (s)	Sample	Methodology	Headline findings
3	**Aim one**: Describe the infant feeding behaviours of Indian, Pakistani and Bangladeshi mothers living in the UK	What were the breastfeeding initiation rates of Indian, Pakistani and Bangladeshi mothers living in this UK sample? What were the breastfeeding prevalence and exclusivity rates between week one and six postpartum of this sample of Indian, Pakistani and Bangladeshi mothers living in the UK? (1.3) Is ethnicity independently associated with breastfeeding initiation, and with breastfeeding prevalence and exclusivity between week one and six post-partum, while adjusting for mother's socio-economic status, education, parity and mothers' age in this sample of Indian, Pakistani and Bangladeshi mothers living in the UK	N= 583 South Asian women (n=265 Indian mothers, n=248 Pakistani mothers and n=70 Bangladeshi mothers).	A secondary analysis of the 2010 Infant feeding survey.	Overall initiation rates for Indian, Pakistani and Bangladeshi mothers was 94.2%. Pakistani mothers had the lowest rates of initiation (88.7%) compared to Bangladeshi (95.5%) and Indian mothers (98.8%). Prevalence of breastfeeding at week one was 87.8% and at week six post-partum was 76.9%. Lowest prevalence rates were reported for Pakistani mothers compared to Indian and Bangladeshi mothers. Breastfeeding exclusivity at week one was 48% which dropped to 25.9% at week six post-partum. Bangladeshi mothers exhibited lowest rates of breastfeeding exclusivity time points compared to Indian and Pakistani mothers.

Chapter	Aims	Research Question (s)	Sample	Methodology	Results
3	**Aim one (continued)**: Describe the infant feeding behaviours of Indian, Pakistani and Bangladeshi mothers living in the UK	What were the breastfeeding initiation rates of Indian, Pakistani and Bangladeshi mothers living in this UK sample? What were the breastfeeding prevalence and exclusivity rates between week one and six postpartum of this sample of Indian, Pakistani and Bangladeshi mothers living in the UK? (1.3) Is ethnicity independently associated with breastfeeding initiation, and with breastfeeding prevalence and exclusivity between week one and six post-partum, while adjusting for mother's socio-economic status, education, parity and mothers' age in this sample of Indian, Pakistani and Bangladeshi mothers living in the UK	N= 583 South Asian women (n=265 Indian mothers, n=248 Pakistani mothers and n=70 Bangladeshi mothers).	A secondary analysis of the 2010 Infant feeding survey.	Ethnicity was independently associated with breastfeeding initiation, prevalence and breastfeeding exclusivity at weeks one and six post-partum. Pakistani mothers were less likely to initiate breastfeeding compared to Indian mothers. Prevalence of breastfeeding was less likely in Pakistani and Bangladeshi mothers at week one and less likely in Pakistani mothers at week six post-partum compared to Indian mothers. Pakistani and Bangladeshi mothers were less likely to be exclusively breastfeeding at week one and six post-partum compared to Indian mothers.

Chapter	Aims	Research Question (s)	Sample	Methodology	Results
4	**Aim two**- Describe antenatal beliefs and postnatal behaviours of Indian, Pakistani and Bangladeshi mothers living in the UK.	(2.1) How did Indian, Pakistani and Bangladeshi mothers who completed IFS stage one report that they planned to feed their babies? (2.2) Were Indian, Pakistani and Bangladeshi mothers aware of the health benefits of breastfeeding? (2.3) What were the formula feeding behaviours of Indian, Pakistani and Bangladeshi mothers? (2.4) Did Indian, Pakistani and Bangladeshi mothers report administering additional foods and liquids to their infants in the early days after birth?	As above (N= 583 South Asian women (n=265 Indian mothers, n=248 Pakistani mothers and n=70 Bangladeshi mothers).	A secondary analysis of the 2010 Infant feeding survey.	The majority of the South Asian mothers in the IFS sample intended to breastfeed their infants (66.2%), with variations amongst the individual sub groups. Lower proportions of Pakistani (58.9%) and Bangladeshi (54.3%) mothers intended to breastfeed compared to Indian mothers (76.2%). The majority of the South Asian mothers were aware of the health benefits of breastfeeding (69.9%); notable variations existed amongst Indian (78.9%), Pakistani (65.7%) and Bangladeshi (52.9%) mothers. A small minority of mothers stated that their infant had ever received formula (n=66, 29.6%) however a larger number of mothers responded to the question of frequency of giving formula feeds (n=385). The majority of mothers stated that they had introduced formula to their infants when they were just under a week old. Just over a quarter of the South Asian sample had introduced additional liquids (other than milk) when their infant was 3-6 weeks old.

Chapter	Aims	Research Question (s)	Sample	Methodology	Results
5	**Aim three**: Collate and describe the existing literature on the factors that influence Indian, Pakistani and Bangladeshi mother's infant feeding practices.	(3.1) What factors influence infant feeding practices of Indian, Pakistani and Bangladeshi mothers living in the UK and in South Asia?	N=57 studies included in the scoping review, n=43 from South Asia, n=14 from the UK. Studies ranged from the year 1976 to 2014.	A systematic scoping review of the UK and South Asian literature on the factors that may influence infant feeding practices of Indian, Pakistani and Bangladeshi mothers.	Multiple factors were identified at the individual and societal level that impacted on breastfeeding initiation and exclusivity amongst South Asian mothers. Some of the individual factors affecting **breastfeeding initiation** were mother's beliefs that breastmilk did not meet the hunger needs of the baby, the breast was unclean, beliefs about insufficient milk and lack of knowledge about breastfeeding and its benefits. Beliefs that colostrum should be discarded and that prelacteal feeds should be administered impacted on the initiation of breastfeeding. Societal factors that impacted **breastfeeding initiation** were that delaying initiation was the norm and religious and cultural teachings encouraged discarding colostrum and administering prelacteal feeds.

Chapter	Aims	Research Question (s)	Sample	Methodology	Results
5	**Aim three**: Collate and describe the existing literature on the factors that influence Indian, Pakistani and Bangladeshi mother's infant feeding practices.	(3.1) What factors influence infant feeding practices of Indian, Pakistani and Bangladeshi mothers living in the UK and in South Asia?	N=57 studies included in the scoping review, n=43 from South Asia, n=14 from the UK. Studies ranged from the year 1976 to 2014.	A systematic scoping review of the UK and South Asian literature on the factors that may influence infant feeding practices of Indian, Pakistani and Bangladeshi mothers.	Some of the individual factors affecting **breastfeeding exclusivity** were maternal ill heath, lactation failure/insufficient milk, lack of knowledge about the benefits of breastfeeding and a preference to mix feed. At the societal level, **breastfeeding exclusivity** was impacted by breastfeeding being incompatible with household chores and a lack of family encouragement and support to breastfeed. Mothers were advised to stop breastfeeding. The UK formula feeding culture inhibited breastfeeding in some mothers.

Chapter	Aims	Research Question (s)	Sample	Methodology	Results
7	**Aim four**: Understand the infant feeding beliefs, practices and experiences of Indian, Pakistani and Bangladeshi mothers living in the West Midlands	(4.1) What are the infant feeding practices and experiences as described by Indian, Pakistani and Bangladeshi mothers living in the West Midlands? (4.2) What are the beliefs and practices as described by grandmothers from the Indian, Pakistani and Bangladeshi sub-groups in supporting infant feeding?	N=35 (n=26 mothers, n=9 grandmothers). Of the 26 mothers, n=9 Indian mothers, n=11 Pakistani mothers, n=6 Bangladeshi mothers. Of the 9 grandmothers, n=4 Indian and n=5 Pakistani mothers.	In depth, qualitative interviews with mothers and a combination of in depth qualitative interviews and one focus group with grandmothers.	All mothers intended to breastfeed in the sample but very few were breastfeeding at the time of interview. Mothers and Grandmothers were unaware of colostrum or its benefits. Mothers were encouraged to discard colostrum and provide ghutti to their infants. Mothers bottle fed in response to feelings of helplessness in response to baby wanting or preferring the bottle over breast. Mothers needed to '*get the baby used to the bottle'*. Pardah (Modesty) was a major barrier to breastfeeding which was encouraged by the South Asian culture generally but also by the mothers-in-law. Mothers-in-law were key informants of teachings about infant feeding (particularly in terms of the social and cultural teachings of infant feeding), mothers attended to what mothers-in-law taught about how the baby should be fed however mothers-in-law did not feel confident about giving advice to mothers about infant feeding. The immigration process impacted mothers breastfeeding behaviours. Mothers did not feel supported in their attempts to breastfeed their infants.

Chapter	Aims	Research Question (s)	Sample	Methodology	Results
8	**Aim five**: Develop recommendations for a suitable intervention to support Indian, Pakistani and Bangladeshi mothers to optimally feed their infant.	(5.1) What interventions have been developed Indian, Pakistani and Bangladeshi mothers to support their infant feeding behaviours?" (5.2) What would this breastfeeding support tool/intervention look like?	N/A	Using the REPLACE approach to provides recommendations for a suitable intervention to support Indian, Pakistani and Bangladeshi mothers infant feeding. A three-prong approach was taken to understand the support needs of Indian, Pakistani and Bangladeshi mothers: Search of existing literature to see the existing interventions available for South Asian mothers 2. Understanding the service available locally to South Asian mothers.	Limited published literature exists on the breastfeeding support services/ interventions developed to support South Asian mothers infant feeding. The local service available to mothers did not address cultural practices such as discarding colostrum or administering Ghutti. Further it did not discuss the social and cultural context of infant feeding particularly in terms of the pro breastfeeding messages passed down and the conflicting messages of 'getting baby used to the bottle' and 'Pardah'. Only one mother had accessed the service provided locally.

Chapter	Aims	Research Question (s)	Sample	Methodology	Results
8	**Aim five**: Develop recommendations for a suitable intervention to support Indian, Pakistani and Bangladeshi mothers to optimally feed their infant.	(5.1) What interventions have been developed Indian, Pakistani and Bangladeshi mothers to support their infant feeding behaviours?" (5.2) What would this breastfeeding support tool/intervention look like?	N/A	Collation of the data from the mothers and grandmother's interviews (qualitative enquiry of thesis) pertaining to the breastfeeding support needs of mothers.	The REPLACE approach was used as a framework to present recommendations for what a suitable intervention may look like for supporting infant feeding amongst Indian, Pakistani and Bangladeshi mothers. Practices that are engrained in the social and cultural context such as discarding colostrum, administering prelacteal feeds, the importance of Pardah and positive attitudes to the bottle can be addressed through community engagement. Involving the community in understanding the benefits of breastfeeding their infants would go some way to increase and maintain breastfeeding rates in these sub groups.