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**Post-natal care and breastfeeding experiences:
A qualitative investigation following a randomised trial
of side-car crib use (NECOT Trial)**

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Parent-infant Sleep Lab

Department of Anthropology

2013

Thesis submitted to Durham University for the degree of

Doctor of Philosophy

Abstract

The World Health Organization recommends that mothers should breastfeed their infants exclusively for six months and continue to breastfeed alongside complementary foods for two years or more (WHO 2003). In the UK breastfeeding initiation is high, however, duration falls significantly short of the WHO recommendations (McAndrew *et al* 2012). Preserving mother-baby contact throughout the post-natal stay is recommended to safeguard and support favourable breastfeeding outcomes (WHO 1989). The NECOT Trial (a randomised controlled trial involving 1204 mother-newborn dyads) examined whether the provision of side-car cribs during the post-natal stay (facilitating unrestricted contact) resulted in a longer duration of breastfeeding than rooming-in using stand-alone cots. The trial obtained weekly data on infant feeding and sleeping arrangements for 26 weeks post-partum. The use of side-car cribs on the post-natal ward did not improve the duration of any or exclusive breastfeeding in the sample overall (Ball *et al* 2011). This follow-up research aimed to contextualise the NECOT Trial results by adding a qualitative component to the existing quantitative protocol.

Methods

Interviews were conducted at approximately six months post-partum with a sub-sample of NECOT Trial participants (64) and a number of post-natal ward staff (19) involved in their care. Aims of the maternal interviews were to investigate mothers' hospital and at-home experiences of infant feeding and sleeping behaviour and to explore their experiences of participating in the trial. Staff interviews were aimed at investigating perceptions of side-car crib usage and to examine attitudes towards post-natal care and breastfeeding support. Audio recordings of interviews were analysed using NVivo software. Findings were discussed within an authoritative knowledge (AK) theoretical framework.

Results

The interviews revealed that women randomised to receive the side-car cribs felt that they had made a positive difference to their experiences on the post-natal ward; women randomised to the control group felt a side-car crib would have been beneficial. Participants from both the

NECOT intervention and control groups recommended continued use of the side-car cribs on post-natal wards. In particular, the advantage of issuing the side-car crib to women who have mobility issues (delivered via c-section or who had received epidural/spinal analgesics) were highlighted. The benefits of the side-car cribs for breastfeeding were deemed to be outweighed on the post-natal ward by other experiences undermining the establishment of breastfeeding such as the introduction of 'top-up' formula feeds, absence of skin-to-skin contact, periods of mother-infant separation, delayed breastfeeding initiation or initial breastfeeding difficulties. Staff identified difficulties working around the side-car cribs and discussed problems relating to their role in providing breastfeeding support on the post-natal ward. There were additional factors within the home environment that had a negative effect on breastfeeding duration beyond the initial post-natal period, such as the impact of caring for other children, returning to work, imposition of a feeding/sleeping routine, beliefs of insufficient milk and feelings that breastfeeding was too demanding/tiring. The results also indicated that the follow-up calls impacted upon mothers' thoughts and actions regarding infant feeding and sleeping behaviour. An AK framework was shown to be a useful theoretical concept for helping to understand and interpret the research findings.

Conclusion

The overwhelming positive response to the side-car cribs and the benefits highlighted by NECOT Trial participants suggest that introduction of side-car cribs on post-natal wards will improve patient experience. However, any potential beneficial effects on breastfeeding appear to be easily offset by the various effects of other factors that served to reduce breastfeeding success and duration. This implies that the introduction of side-car cribs may be more effective if introduced in conjunction with other interventions addressing breastfeeding barriers on the post-natal ward and continued support in the community. Moreover, from a broader perspective, the findings of the research challenge the authoritative position of quantitative research and RCTs for informing evidence-based medicine.

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Declarations

I declare that this thesis is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due acknowledgement has been made in the text. I confirm that no part of the material presented in this thesis has previously been submitted by me or any other person for a degree in this or any other institution.

Statement of Copyright

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Acknowledgements

I would like to wholeheartedly thank Professor Helen Ball for going above and beyond the requirements of her supervisory role. Without her continued guidance this thesis would not have reached completion. I would also like to express enormous gratitude to my fellow students and past and present members of the Parent-Infant Sleep Lab team, particularly Dawn Mee and Lyn Robinson, who have been a constant source of practical and emotional support throughout this testing journey. Special thanks are also due to Kristin Tully for her inspiration and assistance during my overseas visit to the US.

I would like to express my gratitude to the mothers and members of staff who agreed to take part in this research and to my secondary supervisor, Doctor Peter Collins, who helped me during the writing-up stages of this process. Thank you to the ESRC/MRC for awarding me with funding for a 1+3 studentship enabling me to carry out this research and for the additional overseas institutional visit funding.

Exceptional thanks go to my partner James and my daughter Lauryn for helping me get through the difficult times and to my family and friends who always had faith in me. I dedicate this thesis in memory of my mum and dad who both sadly passed away before my thesis reached completion.

Word count

This thesis is approximately 77,000 words excluding references and appendices.

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Abbreviations

AK	Authoritative knowledge
ASA	Association of Social Anthropologists
BFHI	Baby Friendly Hospital Initiative
BFI	Baby Friendly Initiative
CTG	Cardiotocography
EBM	Evidence-based medicine
GA	General Anaesthetic
IBFAN	International Baby Food Action Network
ID	Identification
KMC	Kangaroo mother care
MLU	Midwifery led unit
NCT	National Childbirth Trust

NECOT Trial	North-East Cot Trial
RCT	Randomised controlled trial
SIDS	Sudden infant death syndrome
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Chapter 1: Introduction

Breastfeeding: a global health issue

The World Health Organization recommends that mothers should breastfeed their infants exclusively for six months and continue to breastfeed alongside complementary foods for two years or more. However, no more than 35% of infants worldwide are exclusively breastfed during the first four months of life and inappropriate feeding practices in the first year are linked to potentially serious infant health conditions such as malnutrition, obesity and contribute to many infant deaths (WHO 2003). Research has shown that there is no biological or physiological evidence that formula milk is better or even an equal substitute to breastfeeding. All the evidence indicates that formula milk poses a significant risk to maternal-infant health and despite improvements it will never be able to replicate the essential immunological properties of breast-milk (Labbok *et al* 2004; Stuart-Macadam 1995).

Promoting breastfeeding uptake and duration is a major global health concern and it is estimated that if the WHO recommendations were achieved the lives of 1.3 million children could be saved (UNICEF 2004). The UK Government is committed to promoting breastfeeding yet Department of Health statistics reveal that duration in the UK falls significantly short of the WHO recommendations and for the past 50 years rates have been among the lowest in the world (McAndrew *et al* 2012). The most recent Infant Feeding Survey conducted in 2010 shows that although breastfeeding initiation was high, the prevalence of breastfeeding fell from 81% at birth to 69% at one week, and to 55% at six weeks. At six months, just over a third of mothers (34%) were still providing any breastfeeding and only one percent of mothers were exclusively breastfeeding (*ibid*). Improving breastfeeding rates is also an important economic issue. In addition to protecting mothers and infants from a variety of health problems and improving overall quality of life, breastfeeding is cost effective for both governments and individuals. In the UK, millions of pounds are spent treating childhood illnesses that may be avoided if infants were exclusively breastfed for the recommended period. It is estimated that even a moderate increase in breastfeeding rates could result in an annual saving of £17 million

in healthcare spending by avoiding the cost of treating four acute diseases in infancy: gastrointestinal infections, lower respiratory tract infections, otitis media and necrotising enterocolitis (Renfrew *et al* 2012). In the US the estimated cost of suboptimal breastfeeding in relation to paediatric disease runs into the billions with hundreds of related deaths (Bartick and Reinhold 2010). In light of these facts, we must then consider the underlying reasons why, in spite of health promotion and health interventions, breastfeeding rates remain stubbornly low and why formula milk feeding is widely becoming the new social norm, particularly in Western contexts.

Anthropological breastfeeding research

It is the aim of anthropologists to contribute to the understanding of the world around us. In the context of breastfeeding, anthropological research strives to offer a unique, holistic perspective that may then be used to improve health outcomes.

Bio-social perspective

In Western cultures, breastfeeding has become medicalised and as a result is typically considered as merely having a nutritional function or at best offering psychological benefits. Consequently, the act of breastfeeding and its success or failure is often reduced to a physical or psychological relationship between the mother and her infant (Maher 1992). An anthropological perspective challenges this assumption by demonstrating that the socio-cultural meanings regarding breastfeeding vary widely throughout the world and involve much more than the relationship between two individuals.

Typically breastfeeding research tends to focus on either the biological or the social dimensions of infant feeding (Stuart-Macadam 1995). However, anthropologists recognise that breastfeeding (and indeed other health issues) must be considered from a bio-social perspective, meaning to consider a phenomenon as jointly produced by (universal) biology and (particular) society (Jordan 1993: 3). Furthermore, cross-cultural comparison of infant feeding behaviours serves to illuminate the range of different meanings and practices associated with a universal phenomenon. Through this perspective it is possible to observe not only how

behaviours are socio-culturally conditioned but also how the behaviour itself helps to shape the socio-cultural context (*ibid*).

Cross-cultural comparison

Anthropological, cross-cultural research provides many examples of the social and cultural meanings attached to infant feeding practices that go beyond a nutritional purpose (Maher 1992). The custom of withholding colostrum from newborn infants is one such example and is a tradition that appears in many cultures, past and present. Colostrum is the early milk that is produced by the mother in late pregnancy and during the first few days after delivery, prior to copious milk production. This substance, although low in volume, is rich in appropriate nutrients and antibodies. Therefore, denial of colostrum or its substitution with a different source of nutrition has the potential to leave the infant vulnerable to negative health outcomes. This practice also interferes with the mother's physiology. The maternal body requires frequent stimulation from suckling, particularly in the early post-partum period, in order to produce the key hormone prolactin that is responsible for lactation (Palmer 1993). A chapter in Odent's (2003) book entitled, *Colostrum and Civilisation* (pp 78-98), describes a historical tendency for most cultures to adopt a negative concept of colostrum deeming it to be bad, polluting and dirty. Similarly, Kitzinger (1995) describes how some cultures regard colostrum as too strong or dangerous for the newborn who instead should be starved, fed other foods, or breastfed by another (wet-nursed), typically a relative.

The concepts of pollution and taboo are a prominent feature in anthropological literature and were notably theorised by Douglas in her publication *Purity and Danger* (1966) as forming part of a wider system of classification. Furthermore, rituals and traditions associated with these concepts are also linked to social functions. Southern Malawi provides an example of a culture where colostrum is withheld and the first feed replaced by thin corn porridge. In this case, beliefs of pollution prevail, however, there is an association between the behaviour and the deliberate establishment of family connections. The 'greeting food' is traditionally given by the child's grandmother and therefore has been suggested to also serve as a method of confirming the newborn's place in the family and determining inheritance rights (Kroegeer 2004). In many

cultures kinship bonds are socially recognised through breastfeeding. For example in Mali, West Africa, a strongly patrilineal society, to not breastfeed means to give up the tenuous relationship between a mother and her child, thus rendering the child unrelated to the mother (Dettwyler 1995). Similar connotations are seen in other cultures whereby kinship bonds are formed between individuals, otherwise biologically unrelated, when breastfed by the same woman. In Islamic Law this practice has implications for whom the child is permitted to marry and there are common beliefs that physical and moral characteristics of the nursing woman are transmitted through the milk (Clarke 2007). More evidence of religious concerns with breastfeeding can be seen within Koranic texts and through imagery such as the iconographical breastfeeding Madonna. This also demonstrates the existence of an emotional, moralistic and spiritual dimensions associated with breastfeeding that permeate cultures worldwide (Maher 1992).

The influential work of the anthropologist Brigitte Jordan (1993) (originally published in 1978) employs a bio-social framework for the cross-cultural comparison of four cultures: United States, Holland, Sweden and Yucatan. Jordan's research observed that specific birthing systems are typically stable, rigidly shaped and deemed morally and practically appropriate by those involved. Cross-cultural investigation therefore provides a valuable way to observe what cannot be seen from within any specific system. Jordan draws particular attention to the value of a bio-social approach, arguing that the boundaries between what is physiologically appropriate merge with what is socially or culturally constructed, making it increasingly difficult to separate the two entities (*ibid*). This debate has long standing roots in anthropology and is commonly referred to as the nature versus nurture controversy (Helman 2001). Jordan's (1993) comparison of American culture to that of the Yucatan system provides a clear illustration of this point. At the time of Jordan's research US obstetricians routinely advised that the uterine membranes be broken manually during labour whilst the Yucatan deemed such practices as dangerous and unnatural. Each of these practices in their particular contexts are viewed as the most appropriate, logical and natural thing to do which leads us to understand that the physiological and social dimensions work together and create a mutually reinforcing belief system.

Theoretical framework

A central theoretical concept constructed by Jordan is authoritative knowledge (AK) (1993). Within this thesis I propose to apply an AK framework in order to examine whether this theoretical concept is useful for helping to understand and interpret my own research findings.

I have chosen to employ an AK framework as I feel it encompasses and expands on many important theories described and employed by anthropologists that have enriched the understanding of healthcare practices in various cultural settings. For instance, Bourdieu's interrelated concepts of *habitus*, field and capital, and Foucault's notions of medicalisation, bio-power and governmentality (Samuelson and Steffen 2004) all seem to share similarities with Jordan's work. Durkheim's theory of social facts and Boasian concepts of ethnocentrism and cultural relativism (Hendry 1999) are also evident. In drawing these concepts together and applying them directly to maternal infant health research, Jordan's AK framework provides a logical theoretical perspective to apply to my own study.

Authoritative knowledge

Within any given culture several knowledge systems may exist, some of which consensually carry more weight than others "either because they explain the state of the world better for the task in hand ('efficacy') or because they are associated with a stronger power base ('structural superiority'), and usually both" (Jordan 1993: 152). Sometimes equally legitimate, parallel knowledge systems prevail. However, frequently one type of knowledge takes precedent within a cultural system, becoming AK. Jordan (1993) makes clear that AK is not a reference to the correctness of the knowledge, it is simply the knowledge that counts and wins through because it seems natural and reasonable to those who collectively construct it. The result of the existence of an AK system is that parallel knowledge systems frequently become devalued or dismissed thus reinforcing the legitimacy of the AK and the persuasive power it holds over individual behaviour and beliefs. Moreover, those who espouse an alternative knowledge system tend to be regarded as naive, ignorant or even trouble makers. Although, generally, the majority will not only accept AK but will actively and unconsciously engage in its routine production and reproduction.

Jordan (1993) asserts that AK systems on the whole remain relatively stable over time as ideas and behaviours are mutually reinforcing and are intrinsically and unconsciously woven into the cultural framework and socialisation process. Consequently, all participants come to see the current social order as a fact of nature and the natural order of things, meaning they cannot be changed, thus maintaining the hierarchical structure of the power relations supporting it. Knowledge systems permeate every aspect of life, and birth is just one of the many common life events that provide researchers with a universal comparison to explore how AK systems may impact upon health and well-being. Birth is both a biological and socio-cultural event as almost everywhere it takes place with the assistance of others and typically involves some form of prescriptive restrictions/rules, such as, whom is permitted to attend and where the birth should take place. Jordan's (1993) description of birth within Yucatan Mayan culture and American culture illuminate how differently this process is managed within different socio-cultural contexts as a result of contrasting AK systems. Within Yucatan culture birth is a stressful but natural occurrence and because it takes place within the home is a relatively public but low-key event. A traditional birth attendant along with the woman's partner and other family members/friends would be present to offer support and guidance however the emphasis would be on allowing events to take their natural course, as relaxed as possible and without undue intervention. Pain and fear is managed through social support and women's subdued expression of the pain is considered to be a positive characteristic. Within this context the 'professional' birth attendant clearly has importance and influence over events. However, while she also holds authority over the use of specialist tools, the power and control of the birth remain firmly with the mother and her family. The mother is credited with the achievement of giving birth to the baby and the mother-infant relationship is preserved as tradition dictates that no separation whatsoever should occur within the first 20 days after birth. Management of the birth in this way therefore suggests a non-hierarchical social framework with the emphasis on natural processes with minimal technological and biomedical interventions.

Jordan's (1993) contrasting description of American birth shares many characteristics with the UK and other industrialised countries' birthing processes. Within this context birth has become

problematised and has become transformed into an event widely accepted as requiring biomedical surveillance and intervention for its achievement. Birth is a formal and private event with nearly all taking place within a hospital setting whereby women must conform to hospital rules. These include restricted movements, controlled food and drink intake and only being permitted to be accompanied by their partner and perhaps one other family member or friend. Biomedical interventions are employed as standard and control of every aspect of the birth, including management of pain and fear, is sought through the use of drugs or specialist equipment. Social interactions are low priority and typically the woman is expected to relinquish all power and decision making capacity during the labour. On delivery the baby is required to undergo medical checks and so is separated from the mother and the achievement of the birth is credited to the attending physician. Within this context the power and ownership of the event is firmly in the control of the biomedical staff and the knowledge generated from the technological equipment used is regarded as superior over the mother's embodied knowledge, the instinctive behaviour in which the maternal body knows how to react.

Application of an authoritative knowledge framework to other research

Jordan's (1993) AK framework has mainly been applied to birth and prenatal care in different socio-cultural contexts. Most of this work is contained within the edited publication, *Childbirth and Authoritative Knowledge: Cross-Cultural Perspectives* (Davis-Floyd and Sargent (eds.) 1997). This body of work provides many examples of how different AK systems have an effect on beliefs and practices and how AK is produced, sustained or even transformed within each context. For instance, Georges' chapter, *Fetal Ultrasound Imaging and the Production of Authoritative Knowledge in Greece*, focuses on how women have become increasingly reliant on doctors and machinery, as opposed to embodied knowledge, to mediate their contact with their unborn child. The women placed particular value on and demand for access to ultrasonographic images as these provided visual evidence of their pregnancy and a sense of reality. Another chapter by Daviss, *Heeding Warnings from the Canary, the Whale, and the Inuit*, discusses competing AK systems of the Inuit and the biomedical profession. This example describes how indigenous Inuit concepts of birth as a community, social and spiritual act were

completely discounted and overridden by Western biomedical practices driven by the Canadian government in the 1960s creating tension between the rival knowledge systems and transforming birthing practices.

Authoritative knowledge in the context of research evidence

From a broader perspective the AK framework has further potential to contribute to the understanding of the position of anthropological research as 'evidence' within the biomedical system. The concept of evidence-based medicine (EBM) has become increasingly prominent within public policy and the biomedical professions and refers to the clinical practice that draws on the 'best evidence' to inform treatment decisions (Lambert 2006; Lambert 2009). The criteria for evaluating what is regarded as 'best evidence' are essentially based on the epidemiological definition of evidence. Therefore, 'evidence' ideally should be able to demonstrate the effectiveness of an intervention for improving practice through comparison and the production of standardised and quantifiable data. Consequently, verifiability and reliability of results according to the research design becomes ranked in a 'hierarchy of evidence' which places randomised controlled trials (RCT) near the peak of the scale (Lambert 2009). As a result, quantitative research evidence within biomedicine has become to be regarded as AK, the knowledge that counts. This has led to devaluation of the legitimacy of other approaches, particularly qualitative research, to inform clinical practice leading to criticisms from both social scientists and health professionals (Lambert 2006; Lambert 2009). The success and popularity of the Cochrane Library database indicates that for many researchers and health professionals EBM provides a valid structure for the evaluation of certain types of research evidence and is considered an improvement on previous patterns of 'ego-based' medicine of individual clinicians (Ecks 2008). However, it is argued that consideration of other data produced by social and cultural research, such as patient narratives and healthcare professionals' judgment on practice, is crucial for ascertaining the value and relevance of statistical measurements in real-world settings. Moreover, qualitative research can be central for identifying problems that arise when attempting to introduce, disseminate and implement 'evidence' in clinical practice, all of which are issues that are frequently arise

from attempts to improve practice through overly simplistic concepts of behavioural change (Lambert 2006; Lambert 2009).

Johnson's chapter within *Childbirth and Authoritative Knowledge: Cross-Cultural Perspectives* (Davis-Floyd and Sargent (eds.) 1997), entitled *Randomized Controlled Trials as Authoritative Knowledge: Keeping an Ally from becoming a Threat to North American Midwifery Practice*, puts into context the strengths and limitations of RCTs as a tool for evaluating alternative birth practices. Johnson discusses the value of the meta-analysis of RCTs contained within databases, such as the aforementioned Cochrane Library, stating that the results of which have been strongly supportive of a women-centred, low intervention approach to midwifery care (several of which are discussed within the literature review, see chapter 2). However, a number of limitations related to carrying out a RCT within obstetrical, clinical settings are highlighted. These include the issue of clinician bias creeping in and problems associated with measuring emotional/social issues which consequently are then rarely investigated within a RCT. There are also difficulties associated with finding willing subjects and participants to take part in a research that randomly assigns treatment conditions, particularly when there may be ethical/safety issues surrounding the research question, such as, home versus hospital birth. There are also limitations as to what questions a RCT can answer, for example, just because a treatment is shown to be efficacious in the context of the trial (it *can* work) this is no guarantee that it will be effective (it *will* work) or that the level of benefit that the intervention may provide will be cost effective within the wider healthcare system. Moreover, some interventions are too expensive or do not attract sufficient funding in order for a RCT to be conducted, leading to alternative therapies, outside the traditional biomedical paradigm, being excluded or under-represented within the pool of research ranked highly in the 'hierarchy of evidence'. Johnson uses an example of a non-RCT, epidemiological research (in this instance it was an observational study recorded by the attending midwife) to highlight the potential value that research employing different methods can offer. She argues that this type of research is a valuable method for gathering evidence of the effects and outcomes of different levels of interventions that may be elusive to a RCT study design, thus broadening the spectrum of research and understanding of various childbirth practices.

Summary of application of an authoritative knowledge framework within this thesis

This body of research demonstrates the usefulness of applying the AK framework across a range of studies related to pregnancy and childbirth. This evidence also illustrates the potential for extension of the theory into my own research on breastfeeding, which has been referred to as ‘the final stage of labour’ (Labbok 2001). In extending AK as a theoretical framework for my thesis I hope to build on the existing body of research that has utilised this theory and to contribute to the anthropological work in the area of maternal-infant health. Moreover, from a wider perspective, I aim to use the AK framework to contribute to the debate surrounding EBM and the concept of ‘best evidence’ to inform clinical practice. In doing so it is my hope that my thesis will be of interest to academics and of value to health professionals and policy makers working to improve public health services.

Research objectives and study design

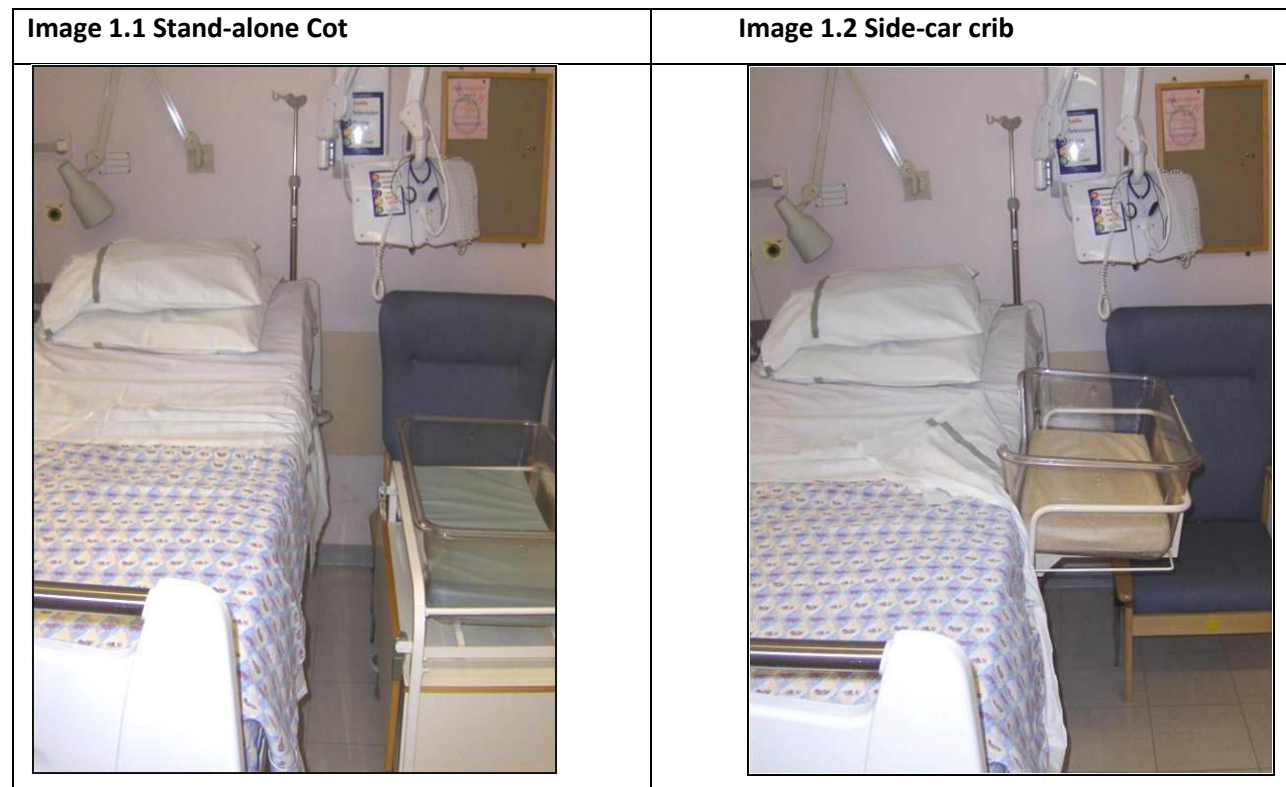
The North-East Cot Trial (NECOT Trial) was an applied, anthropological research project that put into operation the principles of a bio-social approach within a breastfeeding intervention on the post-natal ward. This study forms the foundation for my research which was designed to provide a qualitative follow-up to the quantitative NECOT Trial protocol. I will first discuss the NECOT Trial’s objectives and study design before going on to present the details of my own research project.

The North-East Cot Trial (NECOT Trial)

Context

The typical cot found throughout Euro-American hospitals is a stand-alone bassinet that is placed adjacent to the mothers’ bed (Image 1.1). In recent years some hospitals have introduced a different type of cot on the post-natal ward. The new device is a three-sided bassinet that clamps onto the mothers’ bed frame (Image 1.2). This allows the mother to be within arm’s reach of and on the same level as her baby without sharing the same sleep surface. In 2006 Professor Helen Ball and colleagues carried out a study and found that

improving close mother-infant contact on the post-natal ward, particularly at night, had a positive impact on participants' breastfeeding outcomes (discussed in more detail on pg 50-51).



Design

Based on the findings of the 2006 study Ball and colleagues devised the NECOT Trial. This was a much larger, RCT designed to test the hypothesis that the use of side-car cribs on the post-natal ward results in a longer duration of breastfeeding than standard practice rooming-in using stand-alone cots. This type of intervention is an example of 'nudging' in the context of public health promotion. 'Nudging' refers to interventions that shape and constrain the environment in order to cue certain desirable behaviours, typically requiring little or no cognitive engagement from those affected. It is in direct contrast with health strategies that seek to reduce harmful behaviours through imposition of regulation and legislation. Instead, 'nudging' strategies do not overtly force people to change but seek to manipulate the choice architecture without forbidding any option (Marteau *et al* 2011).

Study location

The study was conducted at an NHS tertiary-level hospital located in the North-East of England. This type of hospital has more highly specialised staff, more technological equipment and the maternity department is one of the largest in the UK hosting over 5700 births per year. The study took place between January 2008 and April 2010 (results published 2011) and as a member of the Parent-Infant Sleep Lab team, during this period I worked as a research assistant throughout the duration of the trial. At the time of the study the hospital was neither engaged with nor working towards Baby Friendly Initiative (BFI) guidelines (see pg 43), although there was indication from the post-natal ward manager that staff were encouraged to follow some aspects outlined in the initiative.

Methodology

A total of 1204 pregnant women, considering breastfeeding, were recruited into the NECOT Trial at 20 weeks gestation during routine prenatal appointments. At 34 weeks participants were randomly assigned to use either a side-car crib or a stand-alone cot. Exclusion criteria were: no prenatal intention to breastfeed, multiple pregnancy, foetal abnormality, spontaneous abortion, preterm delivery (less than 37 weeks gestation), maternal illness following delivery and/or infant admission to special care. Unlike the previous study (Ball *et al* 2006) both caesarean section and vaginal deliveries were included as were participants who used opioid analgesics during labour. Following delivery, participants took part in a telephone follow-up of breastfeeding behaviour and infant sleep location on a weekly basis for 26 weeks using an automated telephone key-pad data entry system. Due to the on-going nature of the trial, participants were required to have a basic level of English language or to have someone at home who would be able to help them complete the weekly calls. Furthermore, some of the women visiting the clinic were pregnant teenagers. Based on the Gillick competency legal guidelines these women were deemed eligible to take part if capable of providing their own consent (Wheeler 2006).

Results

Some of the NECOT Trial participants withdrew or had to be excluded prior to being randomised. The characteristics of those that remained eligible after delivery was well

balanced between the two randomised conditions. Both groups had a greater proportion of women who had a higher income, more education and older age. This reflects a typical picture of characteristics of breastfeeding women in the UK (McAndrew *et al* 2012). The results of the NECOT Trial were based on the 870 participants who provided follow-up telephone data, 759 of whom supplied data throughout the 26 weeks or until they terminated breastfeeding. The distribution between the groups being virtually equal with 437 women allocated the side-car crib and 433 allocated the stand-alone cot. Those women who provided data during the follow-up phase also tended to have more education, be of older age, were less likely to live alone and to have had a higher gestational age at the birth of their baby.

Primary outcome measures were time to cessation of exclusive breastfeeding (receiving only breast-milk) and any breastfeeding (receiving breast-milk in addition to other foods or liquids). Duration of post-natal ward stay was examined as an explanatory variable that ranged from 0.25 to 172 hours, the median stay being 24 hours for vaginal births and 46 hours for caesarean section deliveries. The median number of hours women received their allocated cot type was 26 hours. Bed-sharing in the first 13 weeks was a secondary outcome measure. Contrary to the 2006 study, the results of the NECOT Trial did not show any difference in exclusive breastfeeding or any breastfeeding between the two conditions and at-home bed-sharing was not significantly more common in the side-car crib group. These outcomes were calculated on both an 'intention to treat' and an 'as treated' analysis and were adjusted for the following variables: delivery type, previous breastfeeding and maternal education and age.

Conclusions

In light of the previous study's results the NECOT Trial findings are surprising and disappointing. However, the analysis also revealed that breastfeeding rates at any time point within both conditions exceeded those of the local and UK national data (McAndrew *et al* 2012; Newcastle JSNA 2009). Ball *et al* (2011) discuss the possibility that these results emerged because the mothers recruited into the trial were more committed to breastfeeding or perhaps, the dominant intervention was not the cot type but the weekly self-reporting of breastfeeding behaviour. Moreover, the inclusion of both caesarean section and participants who used opioid

analgesics during labour may have contributed to the differences in the results. Irrespective of the NECOT Trial findings, Ball *et al* (2011) conclude that given the former evidence, the side-car cribs remain effective in breastfeeding initiation in first time mothers and have the potential to enhance post-natal care in more ways than just breastfeeding duration.

PhD research: qualitative follow-up

Purpose of the study

The data gathered from the NECOT Trial were concerned with recording aspects of the mothers' behaviour that were measurable and quantifiable. This quantitative information was then used to produce statistical data from which relationships that may imply causation were derived. The large-scale, fixed plan design of the NECOT Trial's RCT design places limitations on the depth of the information gathered. The advantage of adding a qualitative component was that it generated in-depth information that was not readily observable or quantifiable and therefore cannot be fully explored using quantitative methods. Consequently, the purpose of the qualitative follow-up project was to enhance the NECOT Trial by providing the micro data of individual knowledge so that it could be used to explain, complement and contextualise the macro findings of the main research. This knowledge may then contribute to the feasibility of future side-car crib use, help to improve health service delivery and provide a valuable insight into infant feeding and sleeping behaviour both in the hospital and in the home environment. From a broader perspective, the project was also a study of a study, thus providing a rare opportunity to explore the positive and negative issues that emerge, often unexpectedly, during the process of implementing real-world research, the details of which are typically omitted from published reports. Through gathering this information I aimed to contribute to the literature surrounding RCTs as a research method and the relevance of RCTs as producing 'best evidence' for informing EBM.

Study design

The main phase of this PhD research was to gather interview data from a sub-sample of mothers who took part in the main trial. The second phase was to interview a small sample of post-natal ward staff involved in implementing the trial. As in the NECOT Trial, the

investigation was designed and executed using a bio-social approach. Results will be discussed within the context of the AK theoretical framework.

Objectives: maternal interviews

The objectives of the qualitative follow-up project were to primarily examine experiences of post-natal ward cot type in relation to breastfeeding and to explore their associated benefits and limitations. This was achieved through comparing the responses of mothers who were assigned to the side-car and stand-alone groups. It was also important to contextualise these experiences within other aspects of women's hospital experiences. This included the birth event, mother-infant post-natal health, post-natal ward care and support, and perceptions of the hospital environment in general, all of which might have potentially affected breastfeeding behaviour.

Exploration of at-home infant feeding and sleeping arrangements of participants in the NECOT Trial was a secondary objective. This was particularly relevant to assess whether being part of a trial and engaging in weekly follow-up calls altered the opinions or behaviours of the mothers involved, which may have resulted in changing infant feeding practices. Again, in order to contextualise these findings, wider social/familial issues and mother-infant health were investigated to identify factors that may shape women's willingness and ability to continue breastfeeding.

Objectives: staff interviews

Although this aspect of the study involved a smaller number of participants than the maternal interviews, it is nonetheless a significant part of the follow-up research. The primary objectives of the staff interviews were to explore issues that might help to increase the effectiveness of the side-car crib intervention outside the confines of a trial. This involved exploring staff perceptions of the benefits and limitations of the side-car crib and their potential for supporting breastfeeding on the post-natal ward. The interviews also offered the staff the opportunity to provide feedback on how the trial was managed and to discuss their willingness to use the side-car crib in future. This was useful to unpick the reasons why difficulties may have arisen whilst implementing the intervention on the post-natal ward, a real-world setting and uncovered

issues that may not have been considered by the NECOT Trial research team in the planning stages. These discussions were embedded within a more general enquiry relating to staff opinion of their role in supporting mothers with breastfeeding on the post-natal ward and the ease and difficulties of providing care and support in general on the post-natal ward.

Summary of objectives

Aims of the interviews were to investigate:

- Maternal post-natal ward experiences of cot type, childbirth, breastfeeding and infant care in the context of the hospital setting.
- Maternal responses to the follow-up calls, behaviour/feelings regarding at-home feeding and sleeping behaviour, and wider social and familial influences on breastfeeding.
- Staff perceptions of the benefits/limitations of side-car cribs, views of the trial management and willingness to use the intervention outside the confines of a trial.
- Staff attitudes towards their role in breastfeeding support on the post-natal ward and care and support on the post-natal ward in general.

Thesis organisation

Chapter 2 presents a review of the literature aimed to contextualise breastfeeding within evolutionary and biological principles. This is followed by a historical overview of breastfeeding in Western cultures and the influence of biomedical practices surrounding childbirth and maternal-infant care.

Chapter 3 presents information regarding the study design, ethical considerations, research conduct and method of analysis.

Chapter 4 discusses results pertaining to maternal perspectives on post-natal ward cot type and participation in the NECOT Trial, including a detailed consideration of the perceived impact of the weekly follow-up calls.

Chapter 5 explores the impact of a range of hospital practices on breastfeeding and post-natal ward experiences, irrespective of cot type.

Chapter 6 discusses at-home, night-time infant feeding and sleep location that was relevant to mothers' breastfeeding behaviour at home. Wider issues effecting breastfeeding are also explored.

Chapter 7 presents staff perspectives on the NECOT Trial including staff attitudes towards the use of side-car cribs. This is followed by a discussion of the role of staff in supporting breastfeeding on the post-natal ward.

Chapter 8 discusses the results in the context of an AK theoretical framework to examine experiences of UK hospital birth, breastfeeding and infant care practices within the context of a RCT. AK in relation to EBM using the NECOT Trial as a case study example is also explored.

Chapter 9 concludes the thesis with a discussion of the overall results and discussion chapters. This is followed by a presentation of the limitations of the study and the implications of the findings for future policy, practice and research.

Chapter summary

The World Health Organization recommends that mothers should breastfeed their infants exclusively for six months and continue to breastfeed alongside complementary foods for two years or more (WHO 2003). However, many countries including the UK fall significantly short of these guidelines. In Western cultures in particular, breastfeeding has become medicalised and as a result is typically considered as merely having a nutritional function or at best offering psychological benefits. Anthropological research aims to provide a holistic view of breastfeeding by examining behaviour from a bio-social perspective and contextualising them cross-culturally.

The North-East Cot Trial (NECOT Trial) was an applied, anthropological research project that put into operation the principles of a bio-social approach within a breastfeeding intervention on the post-natal ward. This study forms the foundation for my research which was designed to provide a qualitative follow-up to the quantitative NECOT Trial protocol by interviewing a sub-

sample of mothers who took part in the trial and small sample of post-natal ward staff involved in implementing the trial on the post-natal ward.

The primary aims of the PhD research were to explore mothers' post-natal ward experiences of cot type, childbirth, breastfeeding and infant care in the context of the hospital setting. Secondary objectives of the maternal interviews were to gather information on women's responses to the follow-up calls, behaviour/feelings regarding at-home feeding and sleeping, and wider social and familial influences on breastfeeding. The objectives of the staff interviews were to look at perceptions of the benefits/limitations of side-car cribs, gather views regarding the trial management and explore the willingness of staff to use the intervention outside the confines of a trial. An AK framework is proposed to examine the research findings and will be used to discuss the concept of RCTs as providing 'best evidence' to inform clinical practice.

Chapter 2: Literature Review

Evolutionary context of breastfeeding

An evolutionary or 'Darwinian' approach to healthcare research offers a firm foundation for investigating the relationship between human biology and culture. A consideration of human prehistoric ancestors provides a fundamental starting point for enquiry into why and how contemporary environments and socio-cultural practices may be mismatched with evolved biology resulting in negative health consequences (Trevathan *et al* 2008; Williams and Nesse 1991). The following sections therefore discuss how human evolution has shaped mother-infant health and behaviour, demonstrating the pivotal role of breastfeeding in this process.

Obstetrical dilemma

In the context of maternal-infant reproductive health there are key aspects of the human evolutionary trajectory that have profoundly shaped the way in which humans experience pregnancy and birth and that have implications for infant care (Rosenberg and Trevathan 2002). Humans belong to the order of primates and share common traits with other non-human primates such as viviparity (bearing live young) and lactation (Boyd and Silk 2003: 121). However, five to seven million years ago saw the emergence of bipedalism in human ancestry that resulted in altered pelvis shape and size. This development, coupled with the later emergence of encephalisation (increase in brain size) approximately two million years ago, created conflicting selective forces driving evolutionary change (Trevathan *et al* 2008). The pelvic birth canal became smaller and the human head to body ratio increased making an already difficult birthing process even more treacherous. Clearly, gestation must be sustained until the infant is capable of surviving outside of the womb but also brain and head growth cannot exceed the dimensions of the birth canal. This 'obstetrical dilemma' was resolved by an evolutionary trade-off that altered human pregnancy and birth. The final result was that modern human infants are born with only around 25% of their brain growth completed (compared to 50% or so for other primates). This makes them significantly more altricial (termed secondary altricial) and neurologically immature at birth than other primate species (Ball 2007; Rosenberg and Trevathan 2002; Trevathan *et al* 2008).

Alterations in pelvic structure resulted in the birth itself becoming increasingly challenging. In order to negotiate the narrow birth passage the human infant must undergo a series of rotations before finally emerging facing in the opposite direction to the mother (Rosenberg and Trevathan 2002). This is in stark contrast to non-human primates whose infants emerge from the birth canal facing towards the mother. This unusual situation poses yet another hurdle during delivery in that the mother cannot assist the safe passage of her infant alone. The mechanics of the infant's emergence from the birth canal make it impossible for the mother to reach down and draw the child up towards her chest (as is typically seen in non-human primates for whom birth is a solitary, unassisted event). In doing so the human mother would be pulling against the infant's body flexion thus risking injury to the spine (*ibid*). It is for this reason it has been proposed that bipedalism also marked the beginning of birth as a social event. Simply put, ancestral women who sought companionship at the time of delivery had a greater chance of having more surviving and healthier offspring than those who continued the ancient pattern of delivering alone (Ball 2007; Rosenberg and Trevathan 2002; Trevathan *et al* 2008).

Extended infant dependency

Following delivery, the neurologically under-developed human newborn requires an intense and extended level of dependency on caregivers in order to survive. In evolutionary terms this would primarily be the mother as she is the infant's exclusive source of nutrition. Unfortunately, unlike non-human primates the human infant does not have the ability to cling to its mother creating even more vulnerability. Given this precarious situation, it is no surprise to discover that the evolutionary process has selected for a suite of characteristics and behaviours in the infant, designed to trigger maternal physiological responses and elicit maximum attention both day and night (Ball 2007; Trevathan *et al* 2008; Winberg 2005). Winberg's (2005) work reviews a series of influential studies ranging over a 30 year period that demonstrate how intimate contact between mother and newborn (positively mediated by breastfeeding) creates a mutual regulation of physiology and behaviour that has short and long-term beneficial consequences for both parties. The effects on the infant include: helping to regulate temperature, energy conservation, acid-base balance, adjustment of respiration,

crying, and nursing behaviours. For the mother, the effects of close contact include: increased attention to the infant's needs, increased likelihood of breastfeeding initiation/maintenance, and positive effects on the mother's physiological energy efficiency.

Furthermore, the effects of close physical contact from a responsive caregiver are also shown to be essential for the infant's psychological development. This has been demonstrated by the work of numerous researchers including Harlow and Zimmerman (1959, cited in Gross 1999: 651) and their renowned studies of infant rhesus monkeys, and Bowlby (1969, cited in Gross 1999: 652), who hypothesised that both infants and mothers have evolved an instinctive biological need to stay in close contact with each other during the early critical/sensitive period of the child's life. Real life evidence of the vital importance of physical contact has been observed in orphanages where despite receiving adequate nutrition, infants did not grow due to the lack of intimate interactions (Palmer 1993).

Breast-milk properties: tailor made nutrition for maximum fitness

In addition to the importance of the behavioural aspects of breastfeeding, there is an extensive body of research on the properties of the milk itself. From an evolutionary standpoint the composition of breast-milk produced by mammals has evolved to suit species specific needs and provide optimal fitness. Human infants have evolved to require a relatively small amount of dilute milk and have very slow rates of infant growth when compared with most other mammals. This strategy has advantages in that the infant is provided with optimal time for the growth, development and training of a large brain whilst maintaining a low physical stress of lactation on the mother (Prentice and Prentice 1995). Furthermore, the low solute composition of breast-milk requires frequent feeding must take place both day and night. This in turn then ensures that the infant remains safely in close physical proximity with the mother (Ball 2007). Data suggest that prehistoric infants would have been exclusively breastfed for at least six months and continued to breastfeed alongside other food sources until two to three years of age (Stuart-Macadam 1995). From a physiological perspective (if not modified by culture), it is argued that the natural weaning age of human infants (i.e. complete breastfeeding cessation) would be between two and a half and seven years (Dettwyler 1995).

In addition to providing the infant with a tailor-made composition of nutrients, human milk also supplies the infant with a wide array of bioactive molecules. These are known to provide protection from a plethora of infectious diseases and modulate the composition of the indigenous intestinal microbiota. This not only supports the infant during the time it takes for immune system maturity but also the positive health effects extend into later life (Labbok *et al* 2004; Rautava and Walker 2009). From an evolutionary perspective the consumption of cow's milk is a novel behaviour and for the vast majority of the world's peoples it cannot easily be digested (Wiley 2008). Replacement of breast-milk with formula milk (normally derived from cow's milk) is known to have many health disadvantages. These include: a greater risk to the infant of developing gastro-intestinal infections, respiratory infections, necrotising enterocolitis, urinary tract infections, ear infections, allergic diseases (eczema and wheezing), insulin-dependent diabetes mellitus, sudden infant death syndrome (SIDS), and childhood leukaemia. Long-term disadvantages include increased risk of multiple sclerosis, acute appendicitis, tonsillectomy, rheumatoid arthritis and cardiovascular disease. Formula fed babies may also have poorer neurological development than breastfed infants (UNICEF 2011). The extent of disparities between breast-milk and formula milk becomes evident through comparative investigations. Systematic reviews conducted by Kramer and Kakuma (2011) and McNeil *et al* (2010) comparing infants who were breastfed exclusively for six months against those who were given any amount of formula, show a clear health risk associated with the use of formula milk. Key statistically significant correlations were noted between formula use and morbidity associated with gastrointestinal infections, respiratory infections and otitis media.

Maternal consequences of breastfeeding

In terms of the mother's health there are a number of noteworthy disadvantages associated with not breastfeeding. In the early post-partum period breastfeeding promotes a more rapid return of the uterus to its pre-pregnancy state through the actions of oxytocin. There is a significant association between breastfeeding and a more rapid return to pre-pregnancy weight. The effects it has on glucose and lipid metabolism also have implications for preventing subsequent development of diabetes and heart disease. Epidemiological studies indicate that extended lactation is associated with a reduced risk of pre-menopausal breast, ovarian and

endometrial cancers (Heinig and Dewey 1997). Furthermore, breastfeeding facilitates birth spacing through lactational amenorrhea. In the context of human ancestry, birth spacing would be aligned with breastfeeding duration. As a result, there would typically be a three to four year gap between pregnancies (Labbok, cited in Kroeger 2004: foreword xii).

Co-evolution of the mother-infant dyad

It is clear that mother and infant are inextricably linked beyond the point of parturition. In order to survive the infant requires continuous access to food, warmth and protection to fulfil its physiological and psychological needs. The process of millions of years of evolution has ensured that the mother has co-evolved with the infant making the maternal body the naturally selected environment to meet all of these requirements (Winberg 2005). This relationship has an obvious impact on maternal reproductive success and infant survival, as well as vital implications for health and disease status (thus maximising the infant's own evolutionary reproductive success). Furthermore, it must also be noted that not only are the mother and infant connected in a mutually reinforcing physiological and behavioural process, so too is the connection between breastfeeding and continuous close physical proximity; close contact leads to sustained breastfeeding and vice versa. Therefore, to remove or withhold one element of these equations is to disrupt the evolutionary expected context, with consequential threats to mother-infant health and well-being (Ball and Klingaman 2008).

Context of breastfeeding in Western cultures

Cross-cultural studies have illuminated the variation in breastfeeding and infant feeding behaviours around the world. These practices have clear biological and health ramifications for both mother and child (Quandt 1995). Breastfeeding patterns are often interwoven with other aspects of the socio-cultural environment of which the mother-infant dyad is a part (*ibid*). Therefore, in order to understand Western breastfeeding behaviours, the following sections identify and discuss the different factors that have impacted upon infant feeding practices.

Medicalisation of childbirth and motherhood

Over the past 150 years childbirth and infant care practices have become increasingly influenced by biomedical technologies. This process is complex and the reasons why and how

medicalisation occurred is a source of great debate (see Arney (1982) for a detailed history of the obstetrical profession and the internal divisions that exist within the biomedical system). This discussion is beyond the scope of this thesis, therefore, the intention of the following description is to provide the reader with a brief historical overview of events.

Until the early part of the 20th century, women nearly everywhere in the world gave birth to their babies at home. In this context, the mother-infant dyad would be protected and breastfeeding was viewed as a normal part of the reproductive process and sustained for several years (Johanson *et al* 2002; Kroeger 2004). In Western contexts the majority of births now take place within a clinical setting. This transitional process has been driven by the synergistic relationship between the expansion of biomedical influence into areas that were not formally identified as medical concerns and the growth of industrialisation and capitalisation in Western societies. Consequently, the process of what is termed medicalisation has spread worldwide, although the degree to which change has occurred has been influenced by the level of industrialisation and other socio-cultural factors (Dykes 2006; Gabe and Calnan 1989; Jordan 1993). The transformations surrounding childbirth, particularly in Western cultures, have had a profound effect on infant care practices and have been identified as the major underlying cause of the global breastfeeding decline (Baumslag and Michels 1995; Dykes 2006; Kroeger 2004; Palmer 1993).

Signs of medical involvement in childbirth can be seen as early as the 17th century whereby the invention of technologies, such as forceps and anaesthesia, became employed for assisting with difficult births. Such privileged obstetrical knowledge and tools were the domain of the hospital and the male doctor, thus instigating the initial stages of movement of birth away from the normal domestic setting and diminishing lay midwife authority (Carr 2000; Johanson *et al* 2002). As the influence of the biomedical profession expanded, attention began to turn to population well-being. This new wave of surveillance medicine targeted both the healthy and the sick and effectively began to problematise normal life events including birth and childrearing (Armstrong 1995). The assimilation of these new concepts was facilitated by the increasing production of specialist technologies legitimising clinical involvement in birth, such

as analgesia, caesarean section delivery and blood transfusions (Johanson *et al* 2002), demand for which was heightened in women with narrow and distorted pelvis' caused by rickets, a disease particularly associated with the shift from agricultural to industrialised, urban lifestyles (Carr 2000). The resulting re-organisation of the social and familial structures within the new economic landscape also meant that women could no longer rely on the support from family and friends during childbirth. This void became filled by medical professionals practising within the growing number of hospitals (Sewell 2003).

It must be noted, however, that although the inclusion of such technologies in childbirth features highly in the history of medicalisation of birth, it did not cause a natural decline in the authority of the midwife. On the contrary, it is argued that the relegation of midwifery status was a deliberate, strategic move by male doctors to carve out a new niche in the field of medicine. During this process of forced change, tools and knowledge were not only used to penetrate and cultivate their fresh involvement in field of birth but they also used to challenge the traditional methods of midwife and to discredit their authority (Arney 1982). Consequently, over time the biomedical model of healthcare developed as a supreme source of authoritative knowledge and reached hegemonic status (Dykes 2006). By the end of World War II medicalised, hospital birth had become the norm in the US, a trend that soon spread to other Western countries (Kroeger 2004). In the UK in particular, the establishment of the NHS in 1948 was a driving force for this change with one of the first initiatives being to move all home births into maternity wards, which were believed to be more hygienic and safe, in an effort to reduce infant and maternal mortality rates (BBC 1997; Palmer 1993). Correspondingly, the decline of breastfeeding in the UK and the US became more pronounced in the 1950s with similar patterns of declines occurring later in other parts of Europe and to a lesser degree in developing countries (Carter 1995).

Routine parenting

The influences of a clock-bound, industrialised culture and the rigidity of hospital practices (designed for the practical benefit of the staff not the patients) quickly permeated the 'scientific' parental advice offered to mothers by physicians and other baby 'experts'.

Prominent among early 20th century figures, American behavioural psychologist, John B. Watson's prescribed childcare instructions were largely themed around producing a self-controlled and self-reliant child. Dr Frederick Truby King advocated a rigid feeding and sleeping schedule from which babies should not deviate. Allowing the infant to 'cry it out' became a popular technique and thus mothers who acted on instinct and 'gave in' to demands were met with disapproval. Measuring infant 'progress' became a pre-occupation and charts detailing arbitrary milestones were given to parents so that development could be monitored. A baby's height, weight and how many hours should be spent sleeping at different ages were areas of particular concern (Ball and Klingaman 2008; Hardyment 2007).

Prior to the 20th century evidence suggests that infants were fed (or wet-nursed) on demand and not weaned from the breast until a year or eighteen months which was often very slow process. Nevertheless, Truby King's advocacy of emotional distancing and controlling of the infant's behaviour was not a novel concept. For a child born in the 17th century its first four months of life would mostly be spent tightly swaddled in bandages so that the head and limbs were completely immobilised. This practice was also given medical justification in that it was done in order to protect the child from injuring itself. Research has since shown that swaddling slows the infant's heartbeat, induces longer sleep and reduces crying which was likely to have popularised the trend (although this practice is also associated with less obvious negative physical and psychological effects discussed further on pg 49-50). Moreover, swaddling also allowed the child to be moved around like a parcel and to be left unattended, with evidence showing that some were even hung on a peg on the wall to keep them out of harm's way (Stone 1977).

In recent years Truby King's ideas have been perpetuated by subsequent self-proclaimed experts such as Richard Ferber in the US and Gina Ford in the UK, firmly embedding authoritarian styled parenting techniques into the Western cultural landscape (Ball and Klingaman 2008; Hardyment 2007). Public enthusiasm for *Supernanny* styled reality television shows, indicate that parent blaming and child discipline are still high on the 21st century agenda (Hardyment 2007).

Insufficient milk syndrome

Feeding schedules formed an important part of the structured parental routine. Fears of overfeeding dictated that breastfed babies were to suckle at regular daytime intervals (night-time feeding was discouraged) and duration of feeds were to be restricted. The physiological result of such strict practices meant that lactation capacity was greatly reduced and infants failed to thrive. Regrettably, instead of questioning the effectiveness of imposed feeding routines, the clinical response was to cast doubt over the mother's breast-milk supply or, if plentiful, suggested that the milk was of no nutritional value (Hardyment 2007). Consequently, a new medical phenomenon emerged, 'insufficient milk syndrome', treatment of which was in the form of supplementary nutrition serving to further disrupt lactation (Baumslag and Michels 1995; Palmer 1993). Medicalisation of the 'problem' reduced the issue to a physiological defect and ignored the socio-cultural context. In addition, healthy infants whose growth negatively deviated from the predicted development chart, a reference based on children who had primarily been fed on formula milk, also began to be wrongly identified as having inadequate nutrition (WHO 1999). A concept that may have become a 'reality' during periods of rapid growth when the infant seeks to suckle more frequently in order to increase the volume of milk the mother produces. This is often an unexpected occurrence due to the mother's lack of information and understanding regarding the supply-demand mechanism involved in lactation (Daly and Hartmann 1995; Palmer 1993).

These factors have all contributed to the corrosion of maternal confidence in the body's natural ability to produce sufficient milk, a capability that exists in all mothers with the exception of only a small minority, estimated at being between 1-5% (Akre 1991; Behar 1986). The misconception that milk production is non-modifiable persists, and it is argued that the justification of 'insufficient milk' is also used by women who wish to cease breastfeeding or introduce supplementary feeding (encouraged by product marketing) but feel the need to have a culturally acceptable explanation for their actions (Baumslag and Michels 1995; Palmer 1993; Zeitlyn and Rowshan 1997). In the UK the phenomenon is widespread with 22% of mothers quoting insufficient milk as the reason for discontinuing breastfeeding in the first week post-partum and 39% of those who stopped between six weeks and four months (McAndrew *et al*

2012). Moreover, what was once a culture-bound disorder of the Western, industrialised world has now spread across the globe. This is mainly related to increasing privileged status of scientific knowledge although the patterns of behaviour and contributory factors may differ cross-culturally (Helman 2001; Zeitlyn and Rowshan 1997).

Bed-sharing and breastfeeding

Prior to the 20th century where babies should sleep was largely unquestioned. Cold houses coupled with breastfeeding made bed-sharing a sensible choice. Nevertheless, the trend towards physical and emotional separation between parent and child meant that such sleeping practices were challenged. Too much soothing and cuddling was deemed to be harmful and those advising parents advocated that babies should be moved into a crib or into a different room to learn to sleep through the night. Initially, concerns regarding parent-infant bed-sharing were related to emotional and psychological autonomous development which was later coupled with anxiety that overlaying may occur (Ball and Klingaman 2008; Hardyment 2007).

Increasing safety fears regarding bed-sharing and its association with SIDS has led to strong discouragement of the practice by the medical profession. However, from an evolutionary perspective, prolonged mother-infant separation is disruptive to breastfeeding and other physiological and psychological processes, making the recommended sleeping environment completely at odds with the infant's needs. Furthermore, this is compounded by the unrealistic Western pursuit of unbroken night-time sleep from an early age and the often unexpected frequency of breastfeeding, particularly at night-time (Ball and Klingaman 2008). A result of conflicting SIDS risk-reduction strategies and breastfeeding promotion is parental confusion around night-time infant care, particularly as both messages appear to stem from the same biomedical sources. This has led to parents employing a variety of strategies (consciously or unconsciously) to cope with night-time infant care. These may include the introduction of formula milk or other food substances to reduce frequency of waking, intentional or unintentional bed-sharing and feeding/sleeping taking place in a different location (i.e. whilst sitting on a chair or sofa) perhaps to avoid bringing baby into the parental bed. In turn these may present inadvertent dangers to the infant, with the latter behaviour being a considerable

concern due to the elevated risk of falling asleep with the infant in a potentially hazardous environment (Ball 2003; Blair *et al* 2009; Kendall-Tackett *et al* 2010; McKenna and McDade 2002; Volpe *et al* 2013). This has led to a debate over the effectiveness of a blanket discouragement of shared sleeping by the biomedical profession.

Research shows that bed-sharing is a common occurrence particularly when an infant is breastfed and is correlated with longer breastfeeding duration (Ball 2002; Blair and Ball 2004; Blair *et al* 2010). Research has also indicated that bed-sharing only poses a higher risk when other factors are present such as parental smoking, consumption of drugs/alcohol, or a dangerous sleeping environment (Blair *et al* 2009). Furthermore, infant cot sleeping and sleeping apart from the caregiver is also identified as potentially hazardous. Consequently, biomedical reluctance to provide parents with safe bed-sharing messages is argued as creating greater infant risk due to the withholding of information that caregivers require to provide a low-risk sleeping environment compatible with breastfeeding behaviours and other socio-cultural factors (Ball 2003; Ball and Volpe 2013; Blair *et al* 2009; Heinig 2000; Kendall-Tackett *et al* 2010; McKenna and McDade 2002; Volpe *et al* 2013). Inhibiting open discussion in this way also perpetuates ingrained cultural fear surrounding the practice, often fuelled by negative media sensationalism, further inhibiting potential for change (Ball and Volpe 2013; Fleming *et al* 2006).

Commercial formula milk market

Industrialisation and the increasing medicalisation of birth and motherhood inevitably opened up the market for the mass production of formula milk. Endorsed by the biomedical profession and promoted as offering ‘scientifically formulated’ protection from rickets and common infectious diseases of the day, these products soon became popular amongst those who could afford them. Predictably, in the early years infant mortality rates took a sharp upturn which was caused not only by the inadequacy of the formula milk but equally by the infection harbouring bottles and teats used to administer them (Baumslag and Michels 1995; Hardyment 2007; Palmer 1993). However, as general living standards improved the lethal effects of formula milk feeding became offset and manufacturing soared. Research shows that formula

fed infants remained more prone to illness but improvements in medical skills have meant that these illnesses could be treated more effectively and the connection between negative health outcomes and the use of artificial breast-milk substitutes is frequently overlooked (Palmer 1993).

The global baby food industry is now estimated to be worth more than \$36 billion and predicted to rise by 31% by 2015. The majority share of this is generated from sale of artificial formula milk, which accounts for \$25 billion (Mason *et al* 2013). The decline in breastfeeding worldwide is correlated with the expansion of this lucrative industry and it is argued that unethical marketing strategies have deliberately undermined breastfeeding in order to maximise profits. In particular, the aggressive sales tactics used within developing countries have caused widespread public outrage since the 1970s and 80s due to the effects on infant mortality and morbidity rates (Baumslag and Michels 1995; Palmer 1993). In response to these practices the WHO published the *International Code of Marketing of Breast-milk Substitutes* (1981), although campaign groups including IBFAN and Save the Children continue to uncover widespread illegal promotion and code violations in the UK and across the globe, relating to advertisements and product labeling, most of which are not legally challenged by governments (IBFAN 2010; Mason *et al* 2013).

Moral construction of motherhood

The growing acceptance of biomedical parental advice has inevitably resulted in a common perception of socially acceptable and unacceptable practices. This, coupled with the decline of organised religion in many Western societies, has led to moral concerns being increasingly expressed through medical rather than religious terms (Helman 2001). As a result, a moral construction of motherhood has emerged. A 'good' mother is seen as one that prioritises her child's needs over her own, especially if it entails self-sacrifice, and a 'bad' mother is one who deviates from 'expert knowledge' to the perceived detriment of her child's welfare (Murphy 1999; Pain *et al* 2001). On the other hand, mothers who are perceived to be too self-sacrificing or child centred (for example, following an attachment parenting philosophy typically involving

breastfeeding on cue, baby led weaning, baby wearing and bed-sharing) are also vulnerable to negative judgement and may be considered 'militant' or 'extremist' (Faircloth 2010).

Infant feeding is one area of parenting that often comes under moral scrutiny. Formula feeding, although an accepted practice worldwide, still carries negative connotations. This is due to more recent biomedical emphasis on 'breast is best' creating a 'culture of pressure' for women to initiate and sustain breastfeeding (Knaak 2010). However, for many mothers breastfeeding is perceived as an unobtainable goal rather than a viable option. For those who attempt breastfeeding, many find that it does not live up to the idealistic images that they have previously imagined and, when faced with difficulties, are driven by a sense of guilt to persevere. Those who feel unable to continue often experience feelings of failure and those who prefer not to attempt breastfeeding are subject to the charge of being a 'bad' mother. Therefore, women who do not choose to breastfeed or are unable to sustain breastfeeding, often feel the need to justify their reasons to reaffirm their position in society as a 'good' mother (Blum 1993; Lee 2007; Murphy 1999). In some instances mothers are faced with difficult choices on how to care for their infants due to conflicting information. Often this occurs when lay beliefs and advice from family/social networks clash with biomedical recommendations resulting in difficult dilemmas when deciding on which advice to follow (Pain *et al* 2001).

The negative emotional impact that the promotion of breastfeeding has on some mothers is controversial. It is argued that cultural obsession with eliminating infant risk has led to 'paranoid parenting', resulting in mothers breastfeeding even if it is to the cost of her own well-being (Füredi 2001; Wolf 2011). Counter arguments state that it is every child's right to have a healthy start in life, therefore all parents should be informed about the importance of breastfeeding. Avoiding breastfeeding promotion for fear of causing guilt in parents is consequently considered to be an inappropriate and ineffective strategy. Instead it is argued that mothers should not be made to feel that successful breastfeeding carries a burden of responsibility for the individual but is an issue that should be addressed by policy makers, healthcare providers, media and society in general (Labbok 2008; Larson *et al* 2008). It is also

argued that in a Western context the benefits of breastfeeding are overstated and formula feeding risks exaggerated. However, a large body of research evidence does not support this claim and has shown that breastfeeding is particularly relevant to tackling health problems related to obesity, blood pressure, cholesterol and cancer all of which are common in Western, industrialised contexts (Hoddinott *et al* 2008; McNiel *et al* 2010).

The sexualisation of breasts

The perception of breastfeeding is heavily influenced by the culturally constructed, sexualisation of breasts within Western societies. In many parts of the world, breasts are solely for feeding infants and hold no sexual connotations for either men or women (Dettwyler 1995; Wolf 2008). In contrast, within Western cultures breasts are not just related to infant feeding but are erotic, sexual organs and this is often thought to be their primary function. For this reason breastfeeding is typically only acceptable if conducted in a 'respectable' manner, either privately or discreetly and it is the responsibility of the mother to ensure that her actions do not offend others or give breastfeeding a 'bad name' (Dettwyler 1995; Murphy 1999). This not only has resulted in breastfeeding mothers feeling excluded from many public arenas, many women also face challenges within the home, particularly in the early days and weeks after birth when visitors frequent (Mahon-Daly and Andrews 2002; Pain *et al* 2001).

In non-Western contexts breastfeeding duration typically exceeds two years and time of weaning from the breast is determined by cultural norms. Conversely, in Western cultures duration of breastfeeding is typically only acceptable until the child is around 12 months old, after which breastfeeding is thought by many to be unnecessary. 'Extended' breastfeeding is therefore largely regarded as deviant behaviour on the grounds that it suppresses the child's independence and suggests an inappropriate, distasteful mother-child relationship. Consequently, tension arises between different 'camps' of mothers, with those women at the extreme ends of breastfeeding behaviour (those who did not initiate breastfeeding/ceased within a short period of time and those who breastfed beyond the acceptable norm) being made to feel marginalised (Dettwyler 1995; Faircloth 2010; Murphy 1999). This prudish attitude towards the human body and its functions has deep historical roots. For example, in

1910 a patent was awarded for an 'anti-embarrassment device for nursing mothers' to 'avoid the necessity of exposing the person' when baby needed feeding in public (Hardyment 2007). This concept of modesty regarding exposure of breasts for feeding has remained although this does not extend to perceptions of the non-maternal body image.

The dual function of breasts that has been constructed within Western societies has been described as a 'cultural paradox' between sexuality and breastfeeding, resulting in greater acceptance of breast exposure for erotic purposes than for breastfeeding (Rodriguez-Garcia and Frazier 1995). This concept is argued to be significantly influential in a woman's decision not to breastfeed as not only does breastfeeding provoke negative reactions from others, the notion of a child suckling from the breast can be emotionally confusing for the mother (Palmer 1993). The aesthetic appearance of breasts is also cited as having an impact on declining breastfeeding rates. The cultural idealisation of a particular breast shape leads to concerns in some women that breastfeeding may alter breast appearance and attractiveness (Rodriguez-Garcia and Frazier 1995).

Biomedical discourse has also been criticised for contributing to women's insecurities regarding breastfeeding. Educational literature often shows no actual signs of nipples or breasts and breastfeeding guidance may include instruction on how to manage social situations by teaching discreet breastfeeding. Furthermore, the common emphasis on breastfeeding as a method to regain a pre-pregnancy figure is cited to be detrimental to women's confidence by reinforcing the Western ideology of the desired female body shape (Wall 2001). This concept is further enforced by media portrayal of the celebrity 'yummy mummy' image, typically depicted as a style-conscious, often career juggling woman. The ability to fulfil this role also seems to be used as a measure of the woman's ability to cope with motherhood that may potentially instil feelings of failure, inadequacy and loss of control in mothers who inevitably cannot live up to this high standard (Donnelly 2008). Furthermore, portrayal of breastfeeding in the media can have a significant influence over infant feeding decisions. The potential difficulties associated with breastfeeding are frequently exaggerated and formula feeding portrayed as the norm (Henderson *et al* 2000; Kitzinger and Kitzinger 2001).

Support for breastfeeding mothers

A supportive environment is known to have a positive effect, both emotionally and practically, on uptake and duration of breastfeeding. In non-Western contexts where breastfeeding is the norm, women grow up around breastfeeding and thus develop knowledge and confidence through observation of those around them. Consequently, breastfeeding guidance and support is already woven into the fabric of everyday life as opposed to Western, industrialised culture where it is considered a private behaviour requiring conscious thought and specialist instruction. The decline of breastfeeding has meant that certain skills and knowledge have vanished from the Western social context. In turn this has led to what has been described as a 'loss of cultural art' being replaced by a 'culture of misinformation' whereby women approach the decision and/or attempt to breastfeed with their minds full of incorrect, incomplete or contradictory messages (Dettwyler 1995; Palmer 1993).

The loss of lay breastfeeding knowledge has resulted in mothers being increasingly forced to rely on biomedical professionals for information and support. Formal guidance has been shown to have a positive effect on breastfeeding, however, lay support remains an important influence on infant feeding behaviours (Renfrew *et al* 2012). Encouragement from the mother's partner is known to be a significant factor in breastfeeding success. A 'good' partner is seen to be one that supports the mother regardless of feeding choice. However, fathers may too be judged by the actions of their partner or her decision may clash with their own perceptions. Men may approve of their partner's breastfeeding decision and perceive it as 'natural' but problematic. Concerns include embarrassment if performed in front of others inside or outside of the home, particularly if breast exposure should attract unwanted male attention. As a result, formula feeding may be considered a more convenient and secure option. Furthermore, expectations that partners should provide practical and emotional support with breastfeeding may challenge notions of masculinity. Infant feeding is also strongly associated with bonding and so allowing the father or other family member to formula feed the child is often regarded as a positive act and perceived to be a way of supporting the mother with infant care (Henderson *et al* 2011; Murphy 1999; Pain *et al* 2001).

The attitudes and support from the intimate circle of family and friends, particularly mothers and mothers-in-law, can have a strong impact on breastfeeding uptake and success. In the UK it is reported that women who were breastfed themselves, and whose friends breastfed were more likely to intend to breastfeed themselves (McAndrew *et al* 2010). Other women with experience of successful breastfeeding are often a vital source of advice and provide reassurance that helps to boost maternal confidence. Conversely, those with negative or no breastfeeding experience may, consciously or unconsciously, contribute to self-doubt, breastfeeding failure and/or encouragement of formula feeding (Whelan and Lupton 1998). A facilitative style of breastfeeding support, whether delivered by lay or health professional sources, has been identified as being encouraging, realistic, practical and proactive and typically delivered on a connective, personal level such as a one-to-one support. Unhelpful support has been identified as reductionist, insensitive, rushed, undermining, blaming, conflicting and pressured (Schmied *et al* 2011a; Sheehan *et al* 2008). Other factors that are known to affect breastfeeding uptake and duration include: maternal age, ethnicity, socioeconomic status, education, and previous experiences of infant feeding (McAndrew *et al* 2010; Miller *et al* 2007).

Breastfeeding in the public domain

Looking at the wider perspective of support, the Breastfeeding Act 2005 in Scotland (Scottish Parliament 2005) and the Equality Act 2010 that encompasses the whole of the UK (Maternity Action 2011), have now been implemented to safeguard and promote breastfeeding, making it an offence to deprive mothers of the right to nurse a child in a public place. Similarly in the US, the vast majority of states now have protective legislation in effect (NCSL 2013). In many non-Western countries the call for such a law would be baffling given that breastfeeding is regarded as mundane and commonplace as having a public conversation (Wolf 2008). However, the numerous reports of negative experiences women faced whilst breastfeeding in public prior to the laws, make it understandable why such legislation is required. For example, in 2006, in the US a woman was ordered to leave a aircraft prior to take off for refusing to cover herself with a blanket whilst breastfeeding her one year old daughter (CTV News 2012). Similarly in the UK, women reported being asked to leave restaurants, cafes, schools and high streets for breastfeeding, causing general unease for other women considering breastfeeding in public

(BBC News 2006). Since the laws came into effect women can no longer be asked to leave public places on the account of indecency, which had been an occurrence. Although, a 2011 incident involving a young mother breastfeeding in Debenhams department store in Oxford, illustrates that businesses continue to disregard women's breastfeeding rights (BBC News 2011).

Since the legislation has been passed, the UK Infant Feeding Survey has added questions relating to feeding outside of the home that will contribute to monitoring the future impact of the laws. The 2010 report found that almost three fifths of the women surveyed had breastfed their baby in public, almost half of which stated that they had initially encountered problems finding a suitable place to breastfeed and 11% reported that they had been stopped from breastfeeding or had been made to feel uncomfortable (Department of Health 2010). Moreover, an online controversy further highlights that negative attitudes towards breastfeeding may be difficult to change. In 2009 the global online network site Facebook took steps to ban all breastfeeding photographs posted by members. A spokesperson for the company, Barry Schnitt, commented 'Whether it's obscene, art or a natural act — we'd rather just leave it at nudity and draw the line there,' and he justified the actions as for the protection for the site's younger users (Cairns 2011). In recent years these forms of discrimination against breastfeeding have led to a new wave of political activism, that has been termed 'lactivism'. This involves a number of breastfeeding women gathering together in one place to conduct mass 'nurse-ins' often targeting places where breastfeeding women may have been asked to leave. In the context of the Facebook debate, a 'virtual nurse-in' was staged in which upwards of 80,000 women uploaded photographs of themselves breastfeeding in protest at the website's rules. The effects of this form of breastfeeding advocacy is yet to be extensively investigated, although a recent research by Boyer (2011) suggests that this form of direct action constitutes important efforts to expanding the spatial norms where breastfeeding can acceptably take place.

Breastfeeding and paid employment

The industrialised work environment is also a context that is frequently regarded as incompatible with breastfeeding. Mothers often feel they are faced with the choice of returning to work and introducing formula feeding/expressed milk feeding or breastfeeding and remaining in the home. For economic reasons, many mothers do not have free choice on this issue and consequently return to work and find that they cannot successfully incorporate breastfeeding/expressed milk feeding into their working lifestyle. This issue highlights the fact that it is not always a simple matter of a woman's choice to breast or formula feed but it is the social context and working conditions that forces infant feeding decisions. Therefore, it is argued that the broader issues surrounding the constraints on women and mothers need to be addressed to enable those who wish to breastfeed to do so without compromising their social equality (Blum 1993; Van Esterik 2009). In many Western countries legislation has been introduced to support working mothers in accordance with WHO recommendations (WHO 2003). These advise that women should have access to maternity leave, day-care facilities and paid breastfeeding breaks whilst in paid employment. In the UK the Workplace Regulations and Approved Code of Practice requires employers to provide suitable facilities for breastfeeding mothers. Nevertheless, the 2010 Infant Feeding Survey reported that nearly one in five mothers who were working by the time their infant was between eight and ten months old felt that their return to work had affected the way they fed their baby, with over half of these mothers saying it had caused them to stop or cut down breastfeeding (McAndrew *et al* 2012).

Impact of Western childbirth practices on breastfeeding

Advances in biomedical technology undoubtedly play an important role in preserving lives when there are complications in pregnancy and labour. Therefore, it is important not to idealise traditional birthing methods by ignoring the benefits that biomedical knowledge has afforded to maternal-infant health. However, it is argued that in Western, industrialised settings biomedical interventions have 'gone too far' and become embedded into the routine of normal, everyday childbirth without evidence of effectiveness (Helman 2001; Johanson *et al* 2002; Kitzinger 2012; Kitzinger *et al* 2006). As a result, many of the hospital practices believed to have a positive effect can actually have unintentional and often unrecognised detrimental

consequences for both mother and infant (Kitzinger 2012; Kitzinger *et al* 2006; Kroeger 2004). The following sections discuss various aspects of maternity care in relation to the impact on breastfeeding outcomes.

Standard procedures for hospital birth

During the course of the 20th century, hospitals replaced the home as the place and space in which women gave birth and recovered post-natally. For example, in the UK hospital birth rates increased to over 60% by the 1950s and by the 1990s 98% of women gave birth in NHS hospitals (Dykes 2006). This trend in childbirth was novel in human history and women were faced with dealing with an entirely new and unknown situation. At home the environment was secure, calm and unhurried. The midwife would already be well known to the woman as she would have had frequent contact during pregnancy and this support would continue beyond the baby's arrival. Hospitals were a stark contrast to the friendly and familiar environment that women were accustomed to (Kroeger 2004). They were sterile, clinical and centred around infection control, efficiency and routine standardised care. Old traditions were rejected and replaced with scientific reasoning. New technologies were constantly added to the birth routines whether they were required or not, leading to what has been described as a 'cascade of interventions' (*ibid*). Indeed there are many variations between obstetric practices in Western contexts, some procedures have been removed, replaced or new techniques added (Davis-Floyd 2003). However, the following description depicts a scenario that many women presenting to the hospital in early labour would come to expect during the mid 20th century, some aspects of which have remained in contemporary practice. On arrival the woman would firstly be 'prepped' for the birth. This would require her to put on a hospital gown, having her pubic hair shaved, have a vaginal examination (which would then be performed again periodically) and given an enema. During the hours of labour food and drink would be denied and she would most likely be asked to breathe in nitrous gas or ether. Intravenous drugs would be offered instead of emotional support in an attempt to mask the pain and fear of the labour (Davis-Floyd 2003; Kroeger 2004). These included meperidine (an opioid commercially known as Demerol or Pethidine) or, popular among American physicians in the 1940s, 50s and 60s, a combination of morphine (a narcotic) and scopolamine (an amnesiac) to induce a state known

as 'twilight sleep' (*ibid*). If the woman's labour had been induced or the strength and frequency of her contractions speeded up using Pitocin (a synthetic form of oxytocin), often an epidural/spinal block would be administered to enable her to cope with the intensified pain (Righard 2001). Uterine waters would be broken, instantly producing a much higher pressure on the baby's head and a routine episiotomy would be given. Forceps or vacuum extraction would frequently be used, particularly in cases of induction or when epidural/spinal blocks were administered, as a woman is unlikely to be able to bear down herself (Kroeger 2004; Righard 2001). If these techniques failed a caesarean section would be performed. The baby would be born whilst the mother was flat on her back in the lithotomy position regularly with the use of leg stirrups or arm restraints (Davis-Floyd 2003; Kroeger 2004). Immediately after birth the mother would most likely be given an additional dose of Pitocin to hasten the delivery of the placenta and the cord would be cut, adding further stress to the newborn by prematurely shutting off its oxygen and nutrient supply (Righard 2001). The infant would then be promptly whisked away to undergo admission procedures and washed and dressed before being reunited with its mother on the post-natal ward. If the infant was detained in the nursery for an 'observation' period by staff this delay could be anything from several hours to several days. Irrespective of whether or not the mother wanted to breastfeed, the baby's first feed in hospital would typically be given by staff to allow the mother to 'rest' and this would be either a bottle of formula milk or glucose water (Kroeger 2004).

Feeding and sleeping during the remainder of the hospital stay were strictly controlled by nursing staff and noisy, unruly babies were frequently removed to the nursery, particularly at night-time. Breastfeeding would commence at scheduled feeding times with the assistance of staff who would take breast and baby in hand to manually 'fix' baby on. Unsuccessful breastfeeding attempts would result in a 'need' for formula to be given. Throughout this entire process, with the exception of short post-natal visits, the woman would be left alone in the care of the hospital staff. Family and friends were seen as surplus to requirements and were banished from the delivery room on the principle of infection control. Conveniently, removal of all other parties during the birth also served to eliminate the possibility that a bystander would question inhumane treatment, thus reducing the woman's power to control the situation.

Finally, around ten days after birth both mother and baby would hopefully have overcome the ordeal of the delivery and leave the hospital fit and well (BBC 1997; Cassidy 2007; Dykes 2006).

Challenges to medicalised birth and post-natal ward care

Around the middle of the 20th century the tide was turning and people began to speak out against the dehumanised and inflexible mainstream childbirth and child rearing practices they were expected to follow. Dr. Grantly Dick-Read was a pivotal character in the rethinking of hospital birthing culture and is regarded as the unofficial founder of the 'natural childbirth movement'. As a British obstetrician practicing in the 1930s and 40s, he had attended many home births as well as hospital deliveries. He recognised that in the familiar home environment women gave birth more naturally, fearlessly and without the need for pain relief medication. In the hospital he observed that the alarm and pain of childbirth was exacerbated by the clinical environment. Birth attendants no longer paid attention to the emotional needs of the women in their care, instead chloroform and narcotics were the likely substitutes (Kroeger 2004). Certainly the association with fear and protracted labour was not a new observation. Accounts of childbirth dating back to the 17th century highlight that women attending a birth took great care not to induce panic or upset as the psychological effect on the woman was recognised as slowing down labour (Gélis 1991). Nevertheless, such lay knowledge appeared to have become lost during the process of industrialisation and medicalisation of birth and so Dick-Read's book, *Childbirth Without Fear: The Principles and Practice of Natural Childbirth*, served as a much needed reminder of the natural processes of the body. The 1944 publication became hugely popular and was read extensively by women in both Europe and America, provoking them to question and react against the imposed hospital birthing practices (Kroeger 2004).

Inspired by Dick-Read's publication, in 1957 a group of seven women from Chicago, US formed the support group La Leche League. This organisation was primarily designed to offer support and advice to mothers on breastfeeding, however, they also made the significant connection between problem/unsuccessful breastfeeding and the practices around hospital births. They argued that a natural delivery facilitated breastfeeding and stressed the importance of keeping mother and child together in the post-partum period (Kroeger 2004). Similarly in the UK,

Prunella Briance, also inspired by Dick-Read's work, formed what is now known as the National Childbirth Trust (NCT 2011). During the 1970s and early 80s, as these organisations became more broadly recognised, there was a steady rise in public interest in natural childbirth and homebirth practices. Prominent campaigners and authors such as Ina May Gaskin and Sheila Kitzinger also brought forth these issues into the mainstream and women progressively began to demand more control in the management of their deliveries (Kroeger 2004). These campaigns were strengthened by the accumulation of research evidence. This included psychological studies on attachment and maternal separation conducted by leading researchers such as Harlow and Zimmerman, Bowlby and Klaus and Kennell (Gross 1999). Furthermore, the work of T.B. Brazelton, a paediatrician in the US, began to reveal the negative effects of hospital routines and medication during labour had on breastfeeding (Kroeger 2004). Studies such as these provided undeniable evidence of the importance for the maintenance of the maternal-infant dyad and forced the medical discipline to reconsider routine procedures. Policies were relaxed to allow partners and family members to attend deliveries, women were allowed to have skin-to-skin contact and breastfeed their babies immediately after birth, and the benefits of rooming-in were officially recognised. This alteration in the attitudes and practices surrounding childbirth had a notable, positive effect on breastfeeding. It was recorded that in the US the percentage of women who ever breastfed rose from an all time low of 22% in 1972 to a peak of 56.3% in 1987, with similar patterns also being observed in Europe (*ibid*).

By the late 1980s and throughout the 90s the general trend toward natural birth began to reverse. Breastfeeding promotion became a health priority, however, in spite of the known correlation between birth interventions and suboptimal breastfeeding outcomes, a new wave of medicalisation of childbirth ensued. Women once again began increasingly accepting hospital routine procedures, promoted as 'safe' ways to handle birth and eliminate labour pain. Furthermore, the rising levels of induced labours and caesarean sections appeared to unquestionably become part of normal practice (Kroeger 2004). Moreover, in Britain, revisions to NHS maternity care meant that mothers were frequently dispatched home within a day of giving birth (Hardyment 2007). This change reflects the Western industrialised pre-occupation

with efficiency and profit that essentially frames birth as a production line process (Dykes 2006).

Implementing worldwide change

In an attempt to preserve breastfeeding in the early post-natal period the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) issued their joint statement in 1989 *Protecting, Promoting, and Supporting Breastfeeding: The Special Role of the Maternity Services* (WHO 1989). This document contained the statement entitled 'Ten Steps to Successful Breastfeeding' which recommends ways in which to care for the mother and baby in order to safeguard and support favourable breastfeeding outcomes (see table 2.1). In 1991 the 'Baby Friendly Hospital Initiative' (BFHI) campaign was launched in which hospitals were encouraged to adopt the 'Ten Steps' along with adherence to the 1981 *International Code of Marketing of Breast-Milk Substitutes* in order to be accredited as having 'Baby Friendly' status. In 2009 WHO/UNICEF issued a revised version of the BFHI guidelines and also reported that 156 countries have, at one time or another, assessed hospitals and designated at least one facility 'Baby-Friendly' (WHO/UNICEF 2009). In the UK, the hospital guidelines form a part of a wider community and educational programme, therefore, the campaign is referred to under the more general term of the 'Baby Friendly Initiative' (BFI).

Research to evaluate the outcomes of implementing BFHI guidelines has shown positive results (see Abolyan 2006; Merten *et al* 2005; Zakarija-Grkovic *et al* 2012). A particularly noteworthy large-scale, RCT conducted by Kramer *et al* (2001), reported a significant increase in breastfeeding duration and exclusivity and a decreased risk of gastrointestinal tract infection and atopic eczema in infants within the intervention group. Furthermore, a study by Declercq *et al* (2009) revealed that hospital practices conflicting with BFHI guidelines, including formula supplementation and pacifier use, were negatively correlated with women's likelihood of fulfilling their intention to exclusively breastfeed. In contrast, first time mothers who delivered in hospitals that practiced six or seven of the 'ten steps' were found to be six times more likely to achieve their intention to exclusively breastfeed. Recent progress reports also confirm that hospitals that successfully implemented and sustained the programme appeared to have much

better breastfeeding outcomes, although it is acknowledged that the success of the BFHI may be partly attributed to additional governmental and community efforts to support breastfeeding (Labbok 2012; Saadeh 2012). These findings are further supported by Beake *et al's* (2012) systematic review of structured (such as BFHI) compared with non-structured breastfeeding programmes aimed at supporting the initiation and duration of exclusive or any breastfeeding in acute and primary healthcare settings. The review included relevant quantitative and qualitative studies carried out between 1992 after the launch of BFHI and 2010. The findings showed that most studies demonstrated a statistically significant increase in breastfeeding uptake after the introduction of a structured programme and the duration of exclusive and any breastfeeding up to six months also appeared to be positively affected.

Table 2.1 Ten Steps to Successful Breastfeeding

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all healthcare staff.
2. Train all healthcare staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within half an hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.
7. Practice rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Source: *Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services*, a joint WHO/UNICEF statement published by the World Health Organization 1989.

Recent research evaluating post-natal ward care and breastfeeding support

In more recent years a body of research has accumulated to further support the principles outlined in the BFHI and demonstrates the impact of hospital practices on breastfeeding. The following sections provide a short overview of the relevant research in relation to technological

and medical interventions in birth, close mother-infant contact in the early post-natal period and breastfeeding support on the post-natal ward.

Use of technological and medical interventions in birth

Pain management

There is a vast body of literature discussing the affects of anaesthesia and analgesia in labour on maternal-infant well-being and birth outcomes that in turn have been identified as having a direct or indirect effect on breastfeeding (Kroeger 2004). A 2012 Cochrane Review by Jones *et al* draws together an extensive number of studies and although the primary examination was to determine effective and ineffective modes of pain management, there is discussion on the implications of each method. Women receiving inhaled anaesthesia were found to be more likely to experience nausea, vomiting and dizziness. Epidurals, when compared with placebo or opioids, resulted in more instrumental vaginal births and more caesarean sections due to foetal distress and women were more likely to experience hypotension, motor blockade, fever or urinary retention. Relaxation techniques, acupuncture, immersion in water, massage and local anesthetic nerve blocks or non-opiate drugs were all shown to improve management of labour pain and had few adverse effects, although local anaesthetic was linked to increased infant heart rate. Relaxation was linked with fewer assisted vaginal births as was acupuncture which was also related to fewer caesarean sections. Jones *et al* (2012) acknowledge that most of the articles within the review had failed to discuss the effects of the medication in terms of breastfeeding outcomes. However, the discussion emphasises the subsequent effects of pharmaceutical drugs in labour on the negative outcomes they have on women's sense of control in labour, breastfeeding, mother-infant interactions and infant health.

Opioid analgesia

Opioid analgesia in labour is known to have an effect on the infant due to the chemicals readily crossing the placenta and having a depressive effect on the infant's central nervous system. Numerous studies have highlighted the adverse effect of Pethedine on breastfeeding outcomes due to disruption of the infant's ability to orientate itself to the breast and perform successful suckling techniques (discussed further in the next section) (see Rajan 1994; Ransjö-Arvidson

2001; Righard and Alade 1990). A review of commonly used systemic opioid analgesia by Anderson (2001) draws attention to the extensive use of such medications to control labour pain but highlights the fact that they actually only provide low to moderate pain relief. It is suggested that it is the sedative nature of the medication that masks the weak analgesic properties by producing a generalised quieting effect on the mother, resulting in apathetic or suppressed response to labour pains. Anderson discusses the implications of administering opioids, particularly in later stages of labour. Effects on the mother include respiratory depression, nausea/vomiting, dizziness, altered mental status, and euphoria, all of which may impair her ability to engage with decision making during the labour and birth. Moreover, some opioid drugs are associated with slowed labour, increasing the additional use of oxytocin augmentation. Foetal effects include a temporary decrease in foetal heart rate that may result in the additional intervention of a continuous electronic foetal heart monitor. In the newborn there may be signs of respiratory depression and subtle neurobehavioural changes strongly associated with disruption of successful breastfeeding both immediately after delivery and in the first few days post-partum. Furthermore, there is also a potential danger of the drug being ingested by the infant via breast-milk (depending on the mother's ability to metabolise the chemicals). This can have further detrimental effects on the newborn.

Epidural analgesia

Research on the effects of epidural anaesthesia also suggests an association with depression of the newborn's nervous system affecting breastfeeding ability. The cause of this association is potentially due to direct effects of the medication in the infant's system or an indirect consequence of the delivery process (cascade of interventions) affecting post-natal mother-infant interactions (Baumgarder *et al* 2003). This may include instrumental vaginal births and caesarean sections due to foetal distress which have been shown to be correlated with epidural usage (Anim-Somuah *et al* 2005). Such interventions can increase the prevalence of maternal health problems including; extreme tiredness, backache, bowel problems, perineal pain, urinary incontinence/problems, excessive bleeding and mastitis (Thompson *et al* 2002). All of these influence the willingness and ability of the mother to successfully initiate and continue to breastfeed. A study by Wiklund *et al* (2009) examined breastfeeding behaviours in newborns

whose mothers had and had not received epidural analgesia during an uncomplicated delivery. The findings showed that significantly fewer babies from the epidural group suckled within the first four hours after birth. Furthermore, these infants were more frequently given formula milk during the post-natal ward stay and were less likely to be exclusively breastfed at discharge. Delayed breastfeeding initiation was also associated with prolonged first and second stage labour and with the administration of oxytocin augmentation.

General anaesthesia

The effects of general anaesthesia (GA) have also been linked with negative breastfeeding outcomes. Bick *et al* (1998) found that women who had a GA during or immediately after delivery were less likely to initiate breastfeeding. In the majority of cases the GA was administered in order to perform a caesarean section delivery. However, among those who had the procedure under regional anaesthesia, a greater proportion breastfed. Bick *et al* suggest that perhaps the sedation effect of the GA, rather than the physical discomfort of the surgery, was most relevant. They rightly acknowledge that the differing effects of emergency and elective caesarean sections, the former typically being performed using GA and the latter under regional anaesthesia, may contribute to breastfeeding outcomes. Similarly, Rajan (1994) found that breastfeeding was lower at six weeks in women who had been given a GA.

Foetal heart rate monitoring

As previously indicated, some medications and procedures may increase the likelihood that additional interventions will be employed. A recent Cochrane Review (Devane *et al* 2012) demonstrates that even a seemingly low level intervention can have dramatic effects on birth outcomes. The review compared the effects of admission cardiotocography (CTG) to record the foetal heart rate against intermittent monitoring using a hand-held stethoscope or ultrasound device. CTG is a commonly used test consisting of a short, usually 20 minute, recording of the foetal heart rate and uterine activity that is performed when the mother is admitted to the labour ward. The purpose of the test is to try and identify those infants who are at greatest risk of becoming compromised with a lack of oxygen during labour. The review looked at the evidence from four trials consisting of more than 13,000 low-risk, pregnant women and found

no evidence of any benefit of using CTG for low-risk women. Moreover, women allocated to receive CTG were found to be approximately 20% more likely to have a caesarean section and there was a significant increase in the use of continuous electronic foetal monitoring (with an electrode placed on the baby's scalp) and foetal blood sampling (a small blood sample taken from a baby's scalp) during labour.

Caesarean section delivery

Caesarean section delivery is a major surgical procedure typically accompanied by many other pharmaceutical and technological interventions. In some cases caesarean section is a life-saving intervention for both mother and child, however, the rising number of caesarean section deliveries, particularly when performed without medical need, is a growing concern. Caesarean section delivery is generally regarded as a safe procedure, however, it is argued that there is a lack of awareness, in both the biomedical profession and lay service users, of the risks involved (WHO 2010). Maternal risks include: wound infection, womb infection, thrombosis, excess bleeding and damage to the bladder or ureter requiring further surgery. Risks to the infant include: breathing difficulties, injury to nerves in neck and arms, bleeding inside the skull, cerebral palsy and potentially death (NHS 2012). Caesarean section deliveries in the past would typically only be performed due to an underlying medical issue, therefore there is a debate as to whether maternal-infant outcomes differ in caesarean sections that are performed electively without medical indication. The WHO Global Survey on Maternal and Perinatal Health 2004-2008 (Souza *et al* 2010) attempted to evaluate these risks and found an increased danger of short-term adverse outcomes for mothers who underwent the procedure for no medical reason suggesting an overall intrinsic risk associated with caesarean section operations. Additional concerns regarding the liberal use of the procedure for normal childbirth included the escalating funding costs on public sector services and the rise in antibiotic resistance due to routine use of post-operative antibiotics (WHO 2010). There is also concern over the rising levels of unscheduled caesarean sections being performed without indication of foetal distress. It is argued that both lay and biomedical misrecognition of the need for caesarean sections is driving this trend with many procedures being performed as a way of preventing potential complications or to move forward from 'prolonged' labour (Tully and Ball 2013).

Due to caesarean section delivery carrying such a wide range of concerns, evaluating the impact of the procedure on breastfeeding outcomes is complex. Nevertheless, numerous studies have associated caesarean section delivery with negative breastfeeding outcomes and have highlighted various pathways of causation. An important factor is believed to be mother-infant separation related to hospital protocols following the procedure. Studies have shown that few women held their newborn immediately after delivery, frequently leading to a delay in initiating breastfeeding. In some instances mother-infant contact is postponed for several hours increasing the likelihood of formula supplementation and/or breastfeeding cessation in the hospital. Furthermore, operative procedures are linked to adverse psychological consequences for mothers, including post-natal depression (Rowe-Murray and Fisher 2001, Zanardo *et al* 2010). There is also evidence that the caesarean section delivery delays the onset of milk production in the mother's body due to abnormal patterns of hormone release. This may be exacerbated by the levels of stress experienced, particularly when performed under emergency circumstances (Dewey *et al* 2003; Nissen *et al* 1996), which may be further worsened by decreased neurological responses in infants (particularly those delivered by emergency caesarean section) affecting alertness and rooting behaviour (Otamiri *et al* 1992). It is argued that hospital practices adhering to BFHI guidelines may considerably reduce the negative effects of caesarean section delivery on breastfeeding (and indeed this is also applicable to other interventions in birth) (Rowe-Murray and Fisher 2001; Zanardo *et al* 2010) although maternal confidence and commitment to breastfeeding has emerged as a crucial factor in successful breastfeeding, irrespective of birth mode (Janke 1988; Avery *et al* 2009).

Close mother-infant contact in the early post-natal period

Skin-to-skin contact

Righard and Alade (1990) examined the effect of delivery room routines on success of the first breastfeed. Infants were observed for two hours after birth and were classified into either the separation or contact group. In the separation group infants were delivered onto the mother's abdomen but removed after 20 minutes to be measured and dressed (approximately 20 minutes) before being returned to the mother. In the contact group skin-to-skin contact was

uninterrupted for at least one hour. After approximately 20 minutes of contact infants began to display crawling movements towards the breast and demonstrated rooting behaviour. By an average of 50 minutes most infants were sucking at the breast, however, more infants in the contact group showed effective sucking behaviour. Failure to suckle or ineffective technique was also correlated with the use of pethidine analgesia during delivery. Righard and Alade (1990) argue that the disruption of the first breastfeed resulting from delivery room procedures can have a prognostic value for the duration and success of breastfeeding. Therefore, mothers and infants should have uninterrupted contact until after the first breastfeed unless separation is unavoidable. Maternal analgesia should also be restricted to avoid a sedation effect on both the mother and infant. Additionally, Riordan *et al* (2000) speculate that ineffective suckling techniques may lead to nipple trauma, soreness and pain which may deter all but the most determined women from continuing breastfeeding.

Separation distress

In a similar study, Christensson *et al* (1995) used newborn crying as a means to evaluate the quality of hospital care immediately after delivery. Mother-infant dyads were randomly assigned to one of three conditions during the 90 minute observation period during which infants would either be kept in skin-to-skin contact with the mother, in a cot, or in a cot for the first 45 minutes followed by skin-to-skin contact. Their findings revealed that infants kept apart from the mother cried considerably more than the skin-to-skin contact group and the infants who were initially placed in a cot ceased to cry when placed in skin-to-skin contact with the mother. This suggests that human infants recognise physical separation from the mother and display an innate 'separation distress call' in an attempt to restore proximity. It was observed that infants wrapped and placed in the cot were restrained from exhibiting the typical rooting behaviour seen in infants placed skin-to-skin contact with the mother. Given that this behaviour is thought to be pre-programmed in the baby's brain, Christensson *et al* (1995) argue that prevention may cause distress.

Research by Morgan *et al* (2011) supports the suggestion that maternal-infant separation causes stress in the newborn. Their study measured physiological factors (autonomic nervous

system and heart rate) known to be associated with stress in two day old neonates on the post-natal ward. Infants were observed sleeping during one hour of maternal skin-to-skin contact followed by one hour in a cot as per normal hospital protocol. The results showed a 176% increase in autonomic activity and an 86% decrease in quiet sleep duration during maternal separation compared with skin-to-skin contact. This demonstrates that babies sleeping in cots only a short distance from the mother are in a stressed state of anxious arousal and were failing to establish a sleep cycle, both of which can have an adverse effect on their early brain development. Bergman *et al's* (2004) research echoes these findings and argues that conventional hospital care of placing low-weight newborns in incubators can lead to suboptimal outcomes for the infant. They argue that Kangaroo Mother Care (KMC) provides a safe and superior alternative due to the beneficial components it provides; continuous skin-to-skin contact facilitates exclusive breastfeeding and stabilises/supports physiological and psychological systems of development. Similarly, Gathwala *et al's* (2010) research concluded that KMC improves growth and breastfeeding outcomes. Furthermore, the practice of KMC was well accepted by both mothers and nursing staff within their study.

Winberg's (2005) review of the literature relating to physiological and behavioural effects of mother-infant contact corroborates the findings of these studies, as does a recent Cochrane Review (Moore *et al* 2012) that examined 34 randomised studies looking at the effect of skin-to-skin contact in newborns. This systematic review of the evidence concluded that routine hospital care, whereby newborns are typically swaddled or dressed before being handed to the mother, may significantly disrupt early mother-infant interactions and have harmful effects. Babies exposed to skin-to-skin contact interacted more with their mother, cried less and were more likely to be breastfed in the early months. Breastfeeding also tended to be longer in duration than among infants who did not receive skin-to-skin contact.

Post-natal ward cot type

The first study to examine the effects of side-car cribs on breastfeeding was a RCT conducted by Ball *et al* (2006) which formed the foundations for the NECOT Trial (Ball *et al* 2011). The 2006 study involved 64 newly delivered mothers and their babies being randomly assigned one of

three sleep conditions: baby in the mother's bed with protective side rail, side-car crib or stand-alone cot. All of the mothers were required to have a prenatal intention to breastfeed and those included in the study all had vaginal deliveries and had not used intramuscular or intravenous opiate analgesics in the preceding 24 hours. Following delivery, the mother-infant dyads were filmed during the first two post-natal nights using a camcorder attached to the foot of the mother's bed. Outcome measures were based on observed breastfeeding behaviours and assessment of infant safety in each of the groups. The results showed that the bed-sharing and side-car crib conditions produced the same behavioural outcomes. When compared to those participants in the stand-alone group, these two conditions clearly demonstrated considerably more breastfeeding effort both in attempting to feed and in feeding successfully. No infants were observed to experience any hazards, however bed-sharing infants were observed in more situations exhibiting potential risk than those in the side-car or stand-alone conditions. Ball *et al* (2006) therefore concluded that the use of side-car cribs in the context of the post-natal ward is an effective means of increasing breastfeeding success whilst preserving infant safety. Follow-up data from the participants also suggest that mothers who experienced unhindered access to their infants on the post-natal ward achieved notably longer breastfeeding durations. Of the mothers who initiated breastfeeding in the stand-alone condition 21% were still exclusively breastfeeding at 16 weeks compared with 53% who belonged to the side-car group. These findings were noteworthy when compared to the findings of the UK Infant Feeding Survey 2005 which revealed that national averages for exclusive breastfeeding at 13 weeks was 21% and at 17 weeks was 12% (Bolling *et al* 2007).

A later study by Tully and Ball (2012) (also see published PhD thesis Klingaman 2009) comparing the effects of side-car cribs and stand-alone bassinets following caesarean section delivery found that although the differences in breastfeeding frequency were not statistically significant, mothers had an overwhelming preference for the side-car crib. Most women reported that cot type affected their interactions with their baby. No unfavourable comments were made regarding the side-car cribs, whereas 75% of the mothers using the stand-alone cot made unfavourable comments. Side-car cribs were described by mothers as permitting visual and

physical contact with their infant, enabling emotional closeness, facilitating breastfeeding and minimizing the need to seek staff assistance. Mothers using the stand-alone cot commented that it was awkward to use and required more reliance on staff to help access their baby. The study also identified increased infant risks in the stand-alone bassinet group. Although none of the infants experienced an adverse event during the course of the study, potential hazards were observed. All mothers attempted to access their infant whilst reaching from a reclining or sitting position on the bed. Maternal movements were universally slow and frequently accompanied by grimaces. The height and the angle of the stand-alone cot in relation to the bed introduced several risks: infants were transferred in and out of the crib without support for their heads, cots were observed tipping when infants were returned to the cot, infants were dropped into the cot, and were more frequently placed in a prone sleeping position. Infants belonging to the stand-alone cot group were also more frequently placed onto a pillow when brought into the mother's bed which is identified as a risk as opposed to being placed on the mattress or on the mother's body.

Breastfeeding support and management of infant feeding on the post-natal ward

Support improves breastfeeding outcomes

Research has shown that emotional support from a lay or professional companion during labour is positively associated with better birth outcomes, leading to more favourable circumstances for the mother to initiate breastfeeding (Hoddnett 2001; Kroeger 2004). Continuing this support into the early post-partum period is vitally important to ensure that breastfeeding is effectively established and maintained. A Cochrane Review (Renfrew *et al* 2012) examining support for breastfeeding mothers identified that lay and professional support was effective in increasing breastfeeding duration. Face-to-face support was shown to more likely succeed, as was proactive rather than reactive support. Consequently, the authors advocate that all women should be offered trained support as standard within healthcare settings. Nevertheless, breastfeeding support is recognised as an interaction of many factors that can lead to uncertainty about which elements of care are effective or ineffective in a given

context. As a result tailoring support to the setting and needs of the population group is recommended.

Training staff to support breastfeeding

Many studies have focused attention on breastfeeding in the post-natal ward setting that has illuminated the positive and negative influences of various aspects of maternity care on breastfeeding. As stated in the Cochrane Review (Renfrew *et al* 2012), further research has shown that staff with theoretical and practical breastfeeding knowledge, up-to-date training, working in a hospital with a clear breastfeeding policy have a beneficial impact on breastfeeding. In this environment mothers are more likely to receive timely and adequate information and staff are less likely to schedule and control breastfeeding behaviour (Ekström *et al* 2005; Li *et al* 2013). Consistency of information, helping mothers to understand the 'mechanics' of breastfeeding, as well as adjustment of painful or ineffective positioning are all shown to be important elements of post-natal support. However, the attitudes of staff towards women in their care and their approach to supporting them are equally as important as the quality of the information they provide (Nygqvist *et al* 1994; Redshaw and Henderson 2012).

Practical, sensitive, individualised care

Tarkka *et al*'s (1998) research in a Finnish hospital found that mothers' experiences of breastfeeding on a post-natal ward and ability to cope with breastfeeding was highly significant; the more positive the hospital experience, the better the mother felt able to cope. Several predictors of breastfeeding success were identified. Successful breastfeeding was associated with situations in which women felt emotionally and practically supported by staff and partner/family members whilst on the ward (although the meaning of 'successful' was not clearly defined in the paper). Timing of breastfeeding initiation was important, since the longer the delay, the greater the risk of unsuccessful breastfeeding (postponement often correlated with caesarean section delivery). Mothers who stated they felt healthy and happy were found to cope with breastfeeding better. Significantly, reports of feeling upset or becoming upset by comments of staff or a partner/family member whilst on the post-natal ward were associated with negative breastfeeding experiences and reduced self-reported levels of coping.

Consequently, the authors suggest that specific attention needs to be given to caregiver-mother interactions, particularly with first time mothers, due to the sensitivity and vulnerability that women may feel following delivery. Positive nursing care and support was seen as an important method of imparting breastfeeding confidence, and for providing security for the mother and her family that breastfeeding can be successfully managed after discharge.

A more recent study by Thomson and Dykes (2011) exploring UK maternity practices, upholds the value of effective post-natal breastfeeding support. Mothers described feeling uncertain about infant feeding practices due to inconsistent advice from various health professionals that was confounded by conflicting socio-cultural influences. A 'one size fits all' approach to providing breastfeeding information had limited effects and mothers identified the benefits of having adequate time to discuss their individual needs with staff. The strategy of some staff to withhold infant feeding information that related to potential problems in order to 'protect' mothers from distress was regarded as patronising, inappropriate and potentially prevented women from responding effectively to challenging situations. The ability of women to manage breastfeeding was influenced by several factors. Difficult or traumatic birth experiences involving interventions/complications, absence of skin-to-skin contact and unfavourable effects of analgesic medication were negatively associated with coping with breastfeeding. Breastfeeding confidence was also diminished when women felt 'manhandled' by staff that took a hands-on approach to breastfeeding support that left women feeling embarrassed, invaded and upset. Women also identified that the limitations on the ability of staff to provide sufficient breastfeeding support in a busy environment contributed to breastfeeding cessation. This was particularly important in women with restrictions due to birth complications or who did not have access to adequate professional/lay support following discharge.

Burns *et al's* (2010) meta-ethnographic synthesis of women's experiences of breastfeeding and Nelson's (2006) metasynthesis of breastfeeding studies concur with many of the elements identified by Tarkka *et al* (1998) and Thomson and Dykes' (2011) research; need for health professionals to dedicate sufficient time, individualised patient care, consistency, informational/technical/emotional guidance, and sensitive respect of women's body

boundaries. Furthermore, encouragement or advice from staff to introduce formula milk or fluids other than breast-milk was another important theme to emerge from both papers. Instances included formula being given without the mother's permission or the mother being pressured until permission was granted (Raisler 2000). These practices frequently coincided with the persistent and out-dated practice of separating infants from their mothers at night-time (Whelan and Lupton 1998; Beeken and Waterston 1992). Justification from staff for such actions included: to see if baby could suckle, the mother needed to rest, the mother had a caesarean section delivery, the infant's intake needed to be monitored, and that baby would not settle (Beeken and Waterston 1992; Raisler 2000). Encouragement of formula feeding by community midwives and health visitors also occurs and may be directly or indirectly presented to mothers. This may include concerns raised over, for example, the baby's weight, adequacy of the mother's diet, frequency of crying/feeding and mother's breastfeeding technique, all of which cast doubt over the mother's ability to provide exclusive nutrition for her child (Dykes and Williams 1999). Conversely, some mothers described feeling enormous pressure to breastfeed on the post-natal ward but not being given any support to do so, provoking feelings of isolation, stress, fear and neglect. Many women encountering difficulties with breastfeeding described being made to feel inadequate by the condescending and insensitive attitudes of some staff, contributing to feelings of guilt, failure and incompetence (Redshaw and Henderson 2012).

Barriers to change

'Culture lag'

Research evidence and changes associated with the BFHI are clearly a positive step forward in improving breastfeeding rates, however, there are many establishments worldwide that continue to resist change. This phenomenon has been described as a 'culture lag' within the biomedical system whereby patterns of behaviour continue to be practiced long after the major reasons for doing so have disappeared (Kroeger 2004). A prime example of a procedure that is affected by 'culture lag' is episiotomy, the surgical incision of the perineum to enlarge the vaginal outlet at the time of delivery. In the early 20th century it became routinely performed

during hospital births without consent from the woman and often without informing her that it would be carried out (*ibid*). The biomedical rationale for episiotomy was prevention of maternal and infant morbidity, infant mortality and potential perineal trauma, none of which were based on scientific evidence, only medical opinion. Nevertheless, the practice continued unchallenged until the late 1970s when Kitzinger and other campaigners began to dispute the need for the procedure during normal birth (Kroeger 2004; NCT 2003). A comprehensive review of the evidence surrounding episiotomy reported that there was no clearly defined evidence for its efficacy, particularly for routine use. Additionally, the evidence suggested that post-partum pain and discomfort were accentuated by the procedure and serious complications, including maternal death, were a possible risk (Thacker and Banta 1983). Accounts of women's experiences and further clinical evidence also revealed the traumatic aspect of the procedure and showed that many women suffered from long-term perineal pain, associated with physical, psychological and sexual dysfunction (NCT 2003). Moreover, episiotomy pain has been suggested as having a potential effect on early breastfeeding success. Discomfort, accompanied by tension and anxiety, is known to inhibit the release of the hormone oxytocin required for successful breastfeeding (Kroeger 2004).

As a result of the evidence, the rates of episiotomy have drastically declined. By 1995/1996 the levels in England and Wales had fallen to 27%. However, statistics reveal that rates may vary between hospital units and it is argued that liberal and unwarranted use of the procedure still continues in spite of indisputable evidence against it (Kroeger 2004; NCT 2003). A large US epidemiological study conducted by Webb and Culhane (2002) supports this statement. The results showed enormous differences in hospital episiotomy rates ranging from 20% to 73%; the WHO (2009) states that the rate should not exceed 10-15%. Moreover, the study revealed that women receiving an episiotomy were five times more likely to suffer third and fourth degree perineal lacerations. Those hospitals with higher rates were also associated with the highest number of vacuum/forceps use, caesarean section deliveries, labour augmentation and inductions. Consequently, this study suggests that scientific evidence alone is not always sufficient to change the culture of some hospital practices. Therefore, organisational culture needs to be examined with the same principles as any other cultural system; possessing a

shared set of (implicit or explicit) values, ideas, concepts and rules of behaviour all of which enable a social group to function and perpetuate itself (Hudelson 2004). A clearer insight of these underlying factors will inevitably help to address the issue of 'culture lag' within the biomedical system.

Organisational culture

Understanding organisational culture and effectively managing it is a fundamental aspect of healthcare reform alongside structural and procedural changes in the healthcare system (Scott *et al* 2003). However, implementing such changes on ground level practice can be a significant challenge and typically results in a reactionary process. This process has been described as having four stages: initial denial, resistance, gradual exploration, and eventual commitment. Resistance is a normal response to change because it often involves going from the known to the unknown. Consequently, opposition serves as a defence mechanism to avoid anxiety caused by change that may occur unconsciously within the individual (Bovey and Hede 2001). Resistance can manifest within sub-culture groups or individuals within a system, both of which have the potential to seriously obstruct the progress of organisational change. Tackling resistance, therefore, requires careful consideration of the underlying factors. For example, disruption may occur when the critical mass of employees fail to 'buy into' changes, or members of the team feel a sense of loss as a result of the alteration. Personal attitudes and beliefs can also impede change and may be influenced by ethnicity, gender, class and religion, as well as from the training and education related to their profession (Scott *et al* 2003). Furthermore, if change challenges practices that have become deeply institutionalised and appear logical and legitimate to those involved, mobilising change may not be straight-forward. In reality competing logics may co-mingle for an extended period of time, rather than simply replacing one another, until practices and beliefs associated with the previous dominant logic are gradually displaced (Swan *et al* 2010). Other factors associated with staff resistance to change include beliefs that change is not needed or the current system is adequate; a perception that change does more harm than good; lack of respect for the person/organisation involved in instigating the change; existing negative attitudes towards the organisation/workplace before the change; no input into the proposed change; the belief that

change requires more effort or leads to confusion in the workplace and a desire to challenge authority if notification of change is provided by second-hand source (Kirkpatrick 1985).

Context of NHS maternity services

In some contexts the difficulties associated with implementing change at the grass roots level are underpinned by the conditions in which those involved must operate. Ethnographic research conducted within NHS maternity services provides illuminating insights into the often oppressive and overburdened role of hospital midwives. Kirkham (1999) identified the culture of midwifery as essentially a female profession orientated around values of caring, commitment and self-sacrifice, the foundations of which stem from traditional midwifery of women working with women to achieve birth in the home. In the context of the hospital, such values must operate within a hierarchical structure whereby midwifery is identified as having a low-level position within a system that has been created from contrasting, male-centred values (*ibid*). This observation is supported by employment data which also draws attention to gender equality issues. Reports have shown that the nursing profession (including midwives) is the single largest group of health professionals in the UK NHS. However, despite the fact that over 90% of nursing staff are female, there are a disproportionately high number of men (30-40%) occupying the senior management positions (Helman 2001). Hierarchical, Western institutions such as these are argued to have shaped and been shaped by the basic gender divisions of the wider cultural context. Moreover, relationships between nurses, doctors and their patients are argued to still mirror the gender divisions of the Victorian family: doctor is father, nurse is mother, and patient is child (Gamarnikow 1978, cited in Helman 2001: 113). This then creates a considerable challenge for nurses when trying to maintain a client-centred service. For instance, nursing employees may wish to connect physically and emotionally with patients whilst delivering care (mothering role) but are constrained by busy clinical routines that emphasise the importance of time efficiency and objective measurement for the assessment of the patient's condition (Helman 2001).

Within the existing strained environment, it is therefore a challenge to operationalise change. Even when change is agreed in principle, it is often regarded by staff as simply increasing the

already considerable pressures placed upon them (Dykes 2004; Hughes *et al* 2002; Kirkham 1999). Conflicting workplace ideologies do not only have an impact on capacity to change but can also have a significant emotional impact on staff which in turn has a negative knock-on effect on the patients in their care (Dykes 2004; Hunter 2004). In some instances this may even result in individuals leaving the profession due to the frustration of not being able to fulfil their role, as well as fears of becoming under attack when services fail to provide adequate maternal-infant care (Edwards *et al* 2011). It is therefore argued that in order for midwifery staff to engage with policies designed to improve maternal birth and post-natal experiences, the biomedical system must in turn provide adequate working conditions for change to occur and offer support and up-to-date training to facilitate the integration process of new practices (Cox 2009; Dykes 2004; Edwards *et al* 2011; Hughes *et al* 2002; Kirkham 1999).

Limitations of the Baby Friendly Hospital Initiative

Although research has indicated that implementation of the BFHI is associated with improved breastfeeding outcomes (see pg 42-43), more recently there has been growing criticism of the 'ten steps' framework and research has emerged regarding the challenges of implementing a global strategy at a local level (see Dykes and Moran (eds.) 2009). Bilson and Dykes (2009) argued that the BFHI instead of repairing the damage caused by an overly-medicalised response to maternity care and infant feeding, the very nature of the BFHI as a top-down intervention actually continues to reinforce a medicalised, procedural approach to healthcare. In doing so, the concept of breastfeeding as primarily having a nutritional function persists and associated difficulties are reduced to individual, physiological problems. Bilson and Dykes (*ibid*) state that a structured breastfeeding programme, such as the BFHI, is potentially just a replacement of a 'one size fits all' policy with another set of rigid, authoritative rules that lack consideration for the cultural context. As presented throughout this thesis, anthropologists recognise that breastfeeding must be considered from a bio-social perspective taking into consideration the micro and macro influences and cultural variations in meanings and practices related to infant feeding. It is argued that in order for the BFHI to work the programme must be implemented in a culturally sensitive, flexible, emotional engaging manner with a central focus on improving relationships at an organisational, family and parent-staff level. In doing so it is

believed that attitudes towards breastfeeding will change and the pressure on individual parents will diminish, resulting in benefits for the baby (Bilson and Dykes 2009; Dykes and Flacking 2010). However, it is acknowledged that in the context of maternity services that restructuring of hospital organisational culture, improvements in hospital design, better allocation of resources and adequate support for maternity staff are considerable challenges to adopting a relational approach (Dykes and Flacking 2010). Moreover, the paradox of adopting a more flexible, non-medicalised approach to implementing a global healthcare policy is a major challenge and one that requires further research on the actual process in which this may be achieved (Bilson and Dykes 2009).

Chapter summary

The evolutionary process has shaped the way in which pregnancy, birth and infant care giving is experienced and has created an inextricable link between mother and infant. Breastfeeding positively mediates this relationship beyond the point of parturition and has short and long-term beneficial consequences for both parties. Cross-cultural studies have illuminated the variation in breastfeeding and infant feeding behaviours around the world. However, when human biology and culture are mismatched health consequences can occur.

In Western, industrialised contexts many different and interwoven factors have been identified as having a significant impact upon infant feeding practices. The medicalisation of childbirth and motherhood is a major catalyst for altering infant care practices leading to negative effect on breastfeeding along with other socio-cultural factors. Over time healthcare practices have been challenged and resulted in the UNICEF/WHO BFHI campaign which has shown to have had positive effects on breastfeeding. However, implementing organisational change in the context of maternity services remains a challenge. Consequently, ongoing research is needed to bring cultural patterns of health services in-line with evolutionary expected behaviours and to determine the most effective ways in which change can be implemented into existing patterns of care.

Chapter 3 discusses the contribution that qualitative research can offer to healthcare research. In this chapter I discuss the rationale for using a semi-structured interview technique to gather

data for this study. I provide a detailed account of the ethical, legal and practical considerations that were taken into account when planning the research. I also describe how the data were recorded and analysed.

Chapter 3: Methodology

Healthcare research

Historically, the approach in healthcare research was almost exclusively in the quantitative or positivist tradition. This was based on the imperative for large-scale, objective and unbiased research to inform evidence-based healthcare, policy and practices. The RCT design of the NECOT Trial is regarded as the 'gold standard' of research as the design ensures that the differences between the control and intervention groups are the consequence of chance and not of systematic bias. This approach also has the advantage of being replicable in different contexts. Nevertheless, the rigidity of the design also places limitations on the depth of the information gathered (Bernard 2002; Bryman 1984; Sarantakos 2005). Qualitative research tends to be directed at a deeper understanding of what is happening within small sized samples and has a greater range of design flexibility (Doyle *et al* 2009). Research of this kind involves studying things in their natural settings and attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them. This is known as a constructivist view and can be described as a personal reality generated through an individual's social experiences in everyday life, which are relative to their particular social, cultural and historical context. Consequently, a detailed picture can be built up about why people act in certain ways and how they feel about their actions that can open up new themes and research areas not initially considered (Bernard 2002; Sarantakos 2005).

Recognition of the advantages of synergising qualitative and quantitative research methods is reflected in the growing number of studies employing a mixed method approach. The introduction of qualitative methods alongside RCTs may be of particular value due to the contribution they can offer in the evaluation of the effects of complex health and social care interventions or behavioural processes that are difficult to explore using quantitative methods alone (Lewin *et al* 2009). This rationale forms the basis of the purpose of my PhD research. This thesis is an in-depth, qualitative component of the NECOT Trial which seeks to explain, complement and contextualise the research findings.

Research method: semi-structured interviews

Interviews are just one of the many research methods available to anthropologists. However, interviews are frequently favoured for qualitative enquiry as they provide an ideal opportunity for researchers to observe and record an individual's unique perspective or experience as it relates to a particular issue (Silverman 2001). This research tool may be used in triangulation with other methods or may be used as the primary means of enquiry (Arksey and Knight 1999). Interviews may take a variety of different formats which fall somewhere along a continuum of formality (Bell 1993). At one extreme is the formal interview where questions are highly prescribed, and at the other extreme, interviews are non-directive and unstructured. Choosing an appropriate interview structure for a study is dependent on what type of data are required and is influenced by the researcher's epistemological position (Arksey and Knight 1999). Structured interviews are typically used by researchers seeking quantitative data which can be subject to statistical analysis. In this type of interview the researcher is more interested in identifying general trends within the sample rather than data from individual participants (*Ibid*). Unstructured interviews are favoured by researchers who want to gather qualitative data. The data produced using this technique are characteristically more difficult to analyse than the data yielded from structured interviews. Nonetheless, the unstructured interview, focusing on meanings, generates a much deeper insight into people's understanding of their social world (*Ibid*). The semi-structured interview falls between the structured and unstructured formats as it is open ended but follows a general script and covers a list of topics (Bernard 2002).

For the purpose of my PhD research I selected a semi-structured interview format as the most appropriate method. This method is suited to situations where the researcher will only have one opportunity to interview someone and enables comparison and commonalities to be gauged between participants (Bernard 2002). The relaxed format of the semi-structured interviews enables the researcher to seek both clarification and elaboration on the answers given. To do this the researcher can use a range of probing techniques that are designed to encourage the interviewee to continue talking and expand on their responses. On the other hand, there is the possibility that the participant will talk too much and drift away from the interview topic. In these instances the researcher needs to intervene tactfully to get the

interview back on course (Bernard 2002). When conducting interviews there is always the danger of bias, therefore, being aware of the various ways in which bias can creep into a study is important as it enables the researcher to take potential hazards into consideration when planning the research (Arksey and Knight 1999; Bell 1993). A researcher should strive to remain objective by taking care not to 'lead' the interview through a particular line of questioning and attention should be given to the phrasing of questions and the tone of voice in which they are asked. This also applies to the researcher's response to the answers given, as the way in which the researcher reacts to the participant's feelings and opinions can alter subsequent responses (*Ibid*).

Accurately recording what is said during interviews is imperative. There are a variety of ways in which this can be done: video recording, audio recording, taking hand written notes during the interview, or waiting until after the interview to record important points (Rubin and Rubin 1995). Selecting a particular method depends on the degree of detail needed and the comfort of the researcher and the interviewee with the chosen technique. Each technique has advantages and disadvantages and the researcher must assess the appropriateness of using any given method in the specific research situation (*ibid*). For the purpose of this research I decided to audio record all interviews to ensure that no data were lost. This allowed me to offer my full attention to the participant without the distraction of note taking. For practical reasons audio recording was selected over video recording and it also has the advantage of enabling both face-to-face and telephone conversations to be recorded.

Ethical considerations

An essential component of any type of research that pervades every stage of the investigation from the design to the write-up, is the ethical, legal and political implications of the study. Over the years, the significance and notions of ethical research have changed and all major scholarly societies have published their own codes of ethics, most of which broadly cover the same issues (Bernard 2002). The Association of Social Anthropologists (ASA) of the UK and the Commonwealth's *Ethical Guidelines for Good Research Practice* (2006) provides anthropological scholars with guiding principles. These help to steer the researcher into considering the

consequences of their research for the individuals and groups who participate in the study, fellow researchers, and the anthropological discipline.

As the research was sponsored by the Foundation Trust of which the hospital is part, in addition to consulting and abiding by the ASA guidelines, research ethics approval was obtained from County Durham and Tees Valley 2 Research Ethics Committee. This was in addition to the existing NHS ethical approval of the NECOT Trial. I also held an honorary research contract at the hospital and received clearance from the hospital's occupational health department and the Criminal Records Bureau prior to my involvement with the NECOT Trial.

Steps taken to ensure ethical conduct of the research included:

Informed consent and withdrawal

Written information about the study was provided to participants. Participants were given the opportunity to discuss the research with the researcher over the phone or face-to-face prior to consent being given. Participants were informed that they could leave the study at anytime without providing a reason (see Appendix A-D).

Confidentiality

The preservation of the confidentiality procedure of the NECOT Trial was extended into the handling of the follow-up data. Participant information was anonymised and only identifiable by the participant's NECOT identification (ID) number. Audio recordings of interviews and written documents wherever possible were anonymised using the NECOT ID number. All documents were stored securely in a locked cabinet within the NECOT Trial office at Durham University and monitored by building security patrol officers. Computerised data files including digital audio recordings of interviews were stored on a password protected secure server at Durham University. Written reports and oral presentations do not contain information that will enable participants or their infants to be identified individually in any way and all names contained in quotes used within publications will be replaced with pseudonyms. The primary supervisor, Professor H.L. Ball is registered under the Data Protection Act for Durham University.

Safety and indemnity

The participants' safety was not compromised in any way by taking part in the study. A protocol to preserve my own safety when conducting face-to-face interviews was devised with reference to NHS Lone Working Policy (2007). The study was covered by both NHS liability insurance and Durham University research liability insurance with UMAL, a company specialising in financial risk of higher and further education.

Funding

I was awarded 1+3 MRC/ESRC Studentship Award Scheme funding to carry out the study as part of a PhD qualification. This enabled me to provide a small £5 gratuity to participants in the form of a Love2shop gift voucher on completion of the interview. For the mothers who enrolled in the NECOT Trial this compensation was provided in addition to the £10 gift voucher provided in recognition for the time and effort spent providing information for the research.

Sampling, recruitment and conducting interviews

A purposive sampling technique was employed to select both maternal and staff participants. This was used to generate an interview sample reflecting a diversity of backgrounds and to maximise the potential range of views captured. This technique is often used when the research design dictates the type of informants required to identify and describe a social or cultural phenomenon of interest. Therefore, the sample is intentionally biased to obtain answers to questions of importance (Bernard 2002).

Maternal sampling and recruitment

My primary concern was to interview an approximately equal number of participants from the side-car and stand-alone cot groups. This was achieved to a satisfactory level with the small discrepancy in numbers mainly caused by seven mothers revealing within the interview that instead of receiving the assigned side-car crib they were actually given a stand-alone cot on the post-natal ward. As the recruitment did not commence until the later stages of the NECOT Trial the pool of available participants was finite and therefore it was not possible to balance the numbers in the concluding stages of recruitment. This restriction was underpinned by the

requirement that participants were interviewed as close as possible to their completion of the NECOT Trial at six months post-partum, thus participants with completion dates beyond seven months post-partum could not be contacted. This condition was imposed to achieve continuity from the main trial into the follow-up project and also to facilitate accurate recall of experiences (Bernard 2002).

Secondly, I wanted the sample to include both first time mothers and women with older children who had experienced vaginal and caesarean section deliveries. Achieving even numbers in each of these categories was not a priority but I felt it was essential to include a representation of each of these groups. The target number of participants to be recruited into the study was a minimum of 48, once this was achieved recruitment continued until the pool of available participants was exhausted. Table 3.1 describes the 64 women who were successfully recruited and interviewed. The lower numbers of caesarean section deliveries in each condition are reflective of the larger NECOT Trial participants and is to be expected in relation to the proportion of caesarean sections deliveries overall in England (22%) (NHS 2007).

Table 3.1 Outline of maternal research participants

Randomised condition	Side-car Crib (29)		Stand-alone Cot (35)	
	<i>Parity = 0</i>	<i>Parity =1+</i>	<i>Parity = 0</i>	<i>Parity =1+</i>
Vaginal Delivery	15	8	10	15
Caesarean section Delivery	2	4	6	4

The process of recruitment was limited to participants who had provided consent on their original NECOT Trial enrolment form to be considered for future research (total of 843 participants). Any participant who was withdrawn from the NECOT Trial was excluded. In order to be eligible to take part in the interview participants were also required to have provided

sufficient weekly call data to be included in the NECOT Trial analysis. Once available participants were identified an information letter was posted out inviting women to take part in the follow-up study. This letter also included a consent form and a pre-paid envelope for its return. Letters were posted on different weeks in batches of 10 to allow enough time to manage responses and conduct interviews. One week after letters were posted women were contacted by telephone (occasionally by email if contact could not be made) to discuss the project and to ascertain if they wished to take part in the follow-up project. For those who agreed, a suitable interview date and time was arranged and they were instructed to return the consent form prior to the arranged appointment. All recruitment and interviews took place within a four month period between November 2009 and March 2010. In total 100 invitation letters were posted, of which 17 women were then found to be uncontactable via telephone or email and there were 19 women with whom I was able to make contact with that either declined to take part or failed on more than one occasion to answer the call at the pre-arranged interview time.

Conducting maternal interviews

The vast majority of interviews were conducted over the telephone despite the original intention to conduct mainly face-to-face interviews within the participants' homes. The primary reason for this change was that women, when presented with the option, often preferred to speak over the telephone. Many women also wanted to arrange the interviews for a time when there was another caregiver available to look after their infant in order to avoid distraction. This was typically the woman's partner, most of whom were at work during the daytime and due to my own family commitments I was unable to travel in the evenings to their homes. As a result, 18 of the interviews were arranged to take place between 5.30-8pm and the rest were carried out during the daytime, mainly avoiding school drop off and collection times for those women with older children. When comparing the initial six interviews that were conducted face-to-face with the telephone interviews there was no difference in quality of the information gathered, therefore this change in strategy was given approval by my primary supervisor. This alteration did not affect ethical approval as telephone interviews were

already written into the ethics application. Practically this option worked well as it enabled me greater flexibility to arrange a convenient time with the mothers and I was able to complete more interviews in the time I had available. Telephone interviews also had an unforeseen advantage in that if the conversation was disrupted by visitors or the mother needed to tend to her infant, something which regularly occurred, I was able to either hold the line or as occurred in four instances, the call was terminated and continued at a later time or day. Furthermore, there were 15 occasions when I telephoned participants at the pre-arranged interview time and they were either not at home, unavailable to speak or there was no answer. Fortunately, most of these interviews I was able to rearrange for another day/time and it was of little inconvenience to my schedule. However, had these interviews been arranged for a face-to-face meeting then a considerable amount of time and travel costs would have been wasted as the majority of participants lived at least 35 miles away from my home. None of the interviews exceeded the maximum of one hour specified in the participant information sheet and duration ranged between approximately 10-50 minutes, the average length being around 25 minutes. A semi-structured interview schedule (Appendix E) was used to ensure that all the necessary topics and questions were covered. These broadly fell into the following categories, which in most interviews were usually discussed in the same sequence: prenatal intentions/feelings on infant feeding and sleeping arrangements, hospital and birth experiences, infant feeding and sleeping arrangements at home, and experiences of participating in the NECOT Trial. Some information was already available from the NECOT Trial data and therefore was not included in the schedule.

Throughout the interviews I felt I was able to build a good rapport with the mothers enabling me to elicit a vast amount of information, much of which was of a highly personal nature, within a relatively short amount of time. With this in mind I consciously ensured that I interacted with the women sensitively and refrained from passing judgement on their opinions and behaviours. Overall, I feel that the information I was able to gather exceeded my expectations of what I hoped to achieve within the scope of this study.

Staff sampling and recruitment

The goal was to interview between 15 and 20 members of staff for the follow-up project, which represented a range of employment grades on the post-natal ward. All staff members that played a role in implementing the NECOT Trial on the post-natal ward were eligible to take part. Timing of interviews was planned to take place once all of the NECOT Trial participants had passed through the post-natal ward and therefore were conducted during May 2010. A main priority was to conduct an interview with the ward manager who oversaw the running of the research and to weight the majority of the interviews with qualified midwifery staff who were most involved in women's hospital care. Table 3.2 describes the 19 members of staff who were successfully recruited and interviewed, all of which were women, a characteristic of the post-natal ward staff in general.

Table 3.2 Outline of staff research participants

Employment Grade	Number of participants interviews
Midwife	10
Support Worker	5
Nursery Nurse	3
Ward Manager	1

As recruitment and face-to-face interviews were to be carried out within the hospital I worked with the ward manager to arrange two suitable days for me to attend when a private room could be reserved for conversations to take place. Identifying and establishing a relationship with a gatekeeper(s) is recognised as a vital part of gaining access to a research site or participants when contact or permission is restricted (Burgess 1984). In the days prior to my arrival the ward manager further facilitated the project by distributing some of the research information letters to members of staff during meetings and in the staff room. I also circulated

information on the days I attended to ensure all potential participants were reached. Those who agreed to take part were asked to complete a consent form prior to the interview.

Conducting staff interviews

All interviews were conducted face-to-face and followed a semi-structured interview schedule (Appendix F) to ensure that all the research themes were covered. These were: understanding of the purpose of the trial and staff responsibilities for implementing the intervention on the post-natal ward, acceptability and perceived impact of the side-car crib intervention, difficulties and benefits encountered, the role of staff in breastfeeding support and potential for change in procedures on the post-natal wards that may facilitate breastfeeding. It was recognised in the planning stages that each interview would be limited to approximately 10 to 15 minutes due to working time constraints (time restriction was also a difficulty encountered by Dykes 2006), although this was deemed to be sufficient enough time to gather all the information required. Actual interview duration ranged from 11-17 minutes with the average being 15 minutes long.

Throughout the interviews I endeavoured to make the conversation as relaxed as possible although as discussions were carried out during work time and within the hospital setting I was faced with some uncontrollable factors. Many of the staff (particularly the midwives) appeared to be conscious that they needed to get back to work and on occasions the dialogue was interrupted by call buzzers or by other members of staff with enquiries. As a result some responses appeared a little rushed at times and it was much harder to build up a strong rapport in comparison to the maternal interviews. Furthermore, I also felt aware that several of the staff seemed somewhat suspicious of me and on occasions were defensive in some of their responses to the questions. I attributed this to the fact that the trial had not been implemented as successfully as expected on the post-natal ward and thus staff may have believed the purpose of the interviews was to uncover who might be held accountable. All of these factors had implications for the level of depth that could be gained from the staff interviews although overall I feel I was able to successfully gain a sufficient amount of information for the purpose of the study.

Interview analysis

Due to the vast amount of information collected I decided to use the computer software package NVivo 8 to assist with the analysis. This was done in two phases. Firstly I dealt with the maternal interviews and once that was completed I moved on to the staff interviews. One of the major advantages of NVivo 8 was that it allowed me to import the audio files and transcribe (I chose to only partially transcribe to omit irrelevant conversation) directly into the programme. All transcriptions were completed before analysis began which helped me to build up extensive knowledge of the data and facilitate recognition of major themes. In order to ensure that the process of analysis was robust I then coded every section of every conversation into separate sections which mirrored the sub-headings within the interview schedule. In the case of the maternal interviews, this meant that information was firstly coded into one of the following four major categories; (1) home experiences, (2) post-natal ward and birth experiences, (3) previous/prenatal experiences and intentions, and (4) RCT info and side-car crib information. Each section was then coded again, typically down to another two levels of sub-categories creating an extensive coding framework (see appendix G(a)). This rigorous coding enabled me to draw out all of the relevant data from the many hours of conversations and gave me confidence that no important data were missed. As the staff interviews were fewer in quantity and shorter in duration only one level of coding was required for analysis (see appendix G(b)). An added advantage of embedding the audio files into NVivo 8 was that at any point during the analysis I was quickly and easily able to locate and re-listen to any section of conversation. This was invaluable in maintaining a connection with the women's voices and allowed me to clarify tone and context of comments that occasionally became lost in the transcription or coding process.

Once the coding was completed another valuable aspect of the NVivo 8 software was that it allowed me to input personal characteristics of each participant that could then be compared with other variables or coded themes. This was mainly used to compare and contrast the experience of the mothers due to the wide range of variation in experiences. This involved adding information from the interviews and from the NECOT Trial enrolment forms pertaining to: mode of delivery, parity, birth analgesics, previously breastfed, self reported breastfeeding

and infant sleep behaviour. As a result, I could rapidly group together and identify women with similar or different experiences enabling me to formulate overall conclusions. This facility was complemented by many other tools within the programme, including word frequency analysis and text search feature.

Chapter summary

Historically, the approach in healthcare research was almost exclusively in the quantitative or positivist tradition. More recently there has been growing recognition of the advantages of synergising qualitative and quantitative research methods which is reflected in the growing number of studies employing a mixed method approach. In particular, the introduction of qualitative methods alongside RCTs may contribute to the evaluation of the effects of complex health and social care interventions or behavioural processes that are difficult to explore using quantitative methods alone (Lewin *et al* 2009). This rationale forms the basis of the purpose of my PhD research, an in-depth, qualitative component of the NECOT Trial which seeks to explain, complement and contextualise the research findings through the use of semi-structured interviews.

Chapter 4 presents the results pertaining to maternal perspectives on post-natal ward cot type and maternal views on their participation in the NECOT Trial. This includes detailed accounts of the mothers' responses to their allocated cot type on the post-natal ward and the impact of the weekly follow-up calls on at-home infant care practices.

Chapter 4: Maternal Perspectives on Post-natal Ward Cot Type and Participation in the NECOT Trial

Maternal experiences of post-natal ward cot type

Mothers were asked, during the interview, to comment on the type of cot they used on the post-natal ward. Their responses were mixed with both positive and negative responses being made by participants in both cot groups regarding both types of cot. Mothers were also asked if they thought that their allocated cot type had impacted upon their post-natal breastfeeding or if having a different type of cot would have made a positive or negative difference to their overall hospital experiences.

Detailed accounts of mothers' responses: stand-alone cot group

Positive comments

Just under a third of the women made satisfactory comments regarding their experiences using the stand-alone cot type on the post-natal ward. None of the women were particularly enthusiastic about the cot with the majority of comments being it was 'OK' or 'fine'. However, given that this cot is the familiar and expected type found on post-natal wards then this underwhelming reaction is not unexpected. Amongst those women who overall were satisfied with the stand-alone cot, some said that they did not think the side-car crib would have made a difference to their breastfeeding outcomes or experiences on the post-natal ward. Reasons included a short duration of stay on the post-natal ward, being physically mobile after delivery, and method of feeding had already been decided upon regardless of cot type. Nevertheless, several of the women still discussed potential advantages of using the side-car cribs including providing better access to baby particularly for women after complicated or caesarean section deliveries, to provide closer interactions between mother and baby, to assist with breastfeeding, and useful for women staying longer on the post-natal ward. These enthusiastic responses towards the side-car cribs were similar to the responses of mothers who took part in Tully and Ball's (2012) research looking at breastfeeding on the post-natal ward after a caesarean section.

This mother reflects on how having the side-car crib may have altered her breastfeeding experiences with her first child which she struggled with during the post-natal period, describing it as a “frightening” experience.

It might have made a difference if I'd had it [side-car crib] with Charlie but I'm not sure by the time I got to James nothing much was going to change the way that I fed [combined formula and breastfeeding]...but it might have been that if I'd had it with Charlie, particularly as I was in hospital a week, it could have made all the difference, you never know and it might have made it so that we managed to get the breastfeeding established in a way that we didn't really, you just can't know can you (ID: 1919).

The above quote suggests that women have a tendency to form patterns of behaviours from their experiences with their first child that they carry through into the care of subsequent children. This is reflected in the Infant feeding Survey (McAndrew *et al* 2012) which found that first time mothers were more likely to start breastfeeding than mothers of second or later babies. Moreover, mothers who had previously breastfed for at least six weeks were more likely to start breastfeeding their latest child than those who had breastfed a previous infant for less than six weeks or not at all. These findings were also consistent with the patterns found in previous surveys. This issue highlights the importance of successfully establishing breastfeeding in first time mothers as negative experiences may make them reluctant to attempt breastfeeding with another child. Furthermore, as this mother suggested, the use of side-car cribs on the post-natal ward may help to facilitate breastfeeding success.

Negative comments

Roughly two thirds of the women made some negative comments regarding stand-alone cot use. The overwhelming majority of women raised issues over difficulties accessing their baby, particularly at night, stating that they would have preferred to have been assigned a side-car crib. Unsurprisingly, all ten of the women who had a caesarean section delivery expressed dissatisfaction with the stand-alone cot and many of the other negative comments were made by women who had spinal/epidural anaesthesia and/or difficulties resulting in pain or soreness after birth. In order to access their babies women described how they had to either get out of the bed or had to sit up and/or manoeuvre themselves into a different position in order to do so. Some women described how the height of the stand-alone cot stand and the depth of the

cot itself meant that they had to awkwardly reach up and over the cot side in order to lift/lower baby in/out. These comments are consistent with the responses of mothers in Klingaman's (2009) research.

I could barely move [had epidural and stitches] so getting up and walking was a task in itself (ID: 2170).

It [side-car crib] would have been a lot easier, in every aspect, even just picking her out of the cot to try to breastfeed, and I tried that myself through the night, I just couldn't do it, it was too painful...so I think if she'd had been in that [side-car crib] it would have been a lot easier to just manoeuvre myself onto my side and just try it from there (ID: 1943).

Given the characteristically high frequency of breastfeeding required during the early post-natal period, compounded by tiredness and any other problems following delivery, having a barrier to infant access produced a considerable challenge for the women. Once more, those women with significant mobility issues after delivery had to alert a member of staff for baby to be brought to them or to request assistance for moving around. Inevitably this results in a time lapse between baby's cue for attention and mother's ability to respond. In order to overcome the problem of access many women described how during the daytime they would keep their baby in their arms (or a partner/family member would hold the baby) or they would have the baby in the post-natal ward bed with them but remain awake. Furthermore, some women commented that they preferred to be in close physical contact with the baby rather than using the cot in order to reassure the baby that they were close by and for assurance that the baby was safe and well.

I just wanted to keep an eye on her 'cos I couldn't really see her when she was in the cot [stand-alone] and I couldn't see if she was breathing and stuff (ID: 2156).

It certainly would have made being able to hold Adam easier and even helped me to get a little bit of rest. To have him so close to me, 'cos sometimes when a baby cries they just want a bit of contact, to know that you're there, so just being able to put your hand in and touch him, that's all they want. Whereas with the other ones [stand-alone cots] even having them up next to the bed, 'cos of the cupboard thing that they are on...there's still a good half foot between you...and they're quite high up as well, they're not the most practical of things (ID: 2194).

Night-time cot use

All of the women who remained on the post-natal ward overnight used the stand-alone cots at night-time. However, three women who after getting in and out of bed several times during the night, opted to keep baby in the parental bed but reported that they did not fall asleep. One of these women commented that having the side-car crib would also have been a safer option rather than having baby in the post-natal ward bed. Nevertheless, there were four different women who reported that they had fallen asleep with their baby in the bed at some point during their time on the post-natal ward. Reasons given were that baby was feeding frequently, baby would not settle in the cot, and the mother had fallen asleep unintentionally whilst holding her baby. In previous studies (Ball *et al* 2006; Tully and Ball 2012) video footage showed that women typically held their babies for a large proportion of the observation period. This inevitably led to bed-sharing incidences in women from both allocated cot types.

Non-receipt of side-car crib

Within the stand-alone cot group there were seven women who were randomly assigned to have the side-car crib but were actually given the stand-alone cot on the post-natal ward. Crucially, all of these women had been recorded by the staff as receiving the side-car crib and it was only when contacted regarding participation in the follow-up study that it was revealed this was not the case. Furthermore, follow-up questionnaires and data collection telephone calls associated with the main NECOT Trial also exposed further instances of incorrect recording of side-car crib receipt. All of these cases were amended in the NECOT Trial database to maintain accuracy of the data analysis. However, given that direct feedback was not gained from every participant a proportion may have remained undetected. Reasons explained by the women for non-receipt of the side-car crib included that staff had wrongly informed participant that she could only have the side-car crib if she was staying on the post-natal ward overnight, staff brought the side-car crib and placed it under the participant's bed but never actually attached it, staff decided that the side-car crib was not appropriate for health reasons, and participant was using a bed type with side barriers so the side-car crib was unable to be attached (these types of beds were no longer supposed to be in use on the post-natal ward). Two of these women were particularly upset about the failure of staff to provide the correct cot type:

I was quite annoyed actually 'cos I was quite excited at the fact that I had been chosen for a different one [side-car crib] 'cos I don't really like those kind of goldfish bowl ones [stand-alone cot], they are quite awkward and stuff (ID: 1949).

For the second woman who delivered via caesarean section not being given the assigned cot type was just one of the many negative comments she made regarding the care she received on the post-natal ward:

Eventually a midwife came round and I said 'I'm supposed to be in the cot trial' and she said 'I don't think we've got any left'...she went away and came back and said, 'oh no, actually we've decided that because of your health you're not supposed to have one'... but then a woman across the way from me actually had one [side-car crib] and she said, 'you know, with your drains and stuff', she said, 'it would have been excellent for you rather than a higher one that you actually have to stretch over'...so I don't actually think that was the real reason [not getting a side-car crib], although they came back with that reason, it was just another neglectful area (ID: 2177).

Comments on the use of side-car cribs

Overall, almost every woman within the stand-alone cot group made some positive comments regarding the use of side-car cribs and around three quarters of the women stated that they would be happy to see the introduction of the side-car cribs as standard on post-natal wards. The few women who did not endorse the introduction of side-car cribs understandably did so because they felt they could not comment when they had not used a side-car crib. The only exception was a woman who felt the side-car cribs were unnecessary and less useful than the mobile stand-alone cots. Another woman also expressed concern over the stability and safety of the side-car crib's attachment to the post-natal ward bed. If they were to be used in future, she felt that some reassurance of their safety would be needed. All of these comments are supported by Tully and Ball's (2012) research.

Detailed accounts of mothers' responses: side-car crib group

Positive comments

Consistent with Tully and Ball's (2012) findings, the overwhelming majority of women who used the side-car cribs on the post-natal ward expressed positive and enthusiastic responses and would be happy to see the introduction of side-car cribs on the post-natal ward as standard.

The main advantage of the side-car crib given by the women was the ability to access baby and the preservation of close contact. For a large proportion of the women it was evident from their reactions that the side-car crib had made a considerable difference to their post-natal ward experiences.

I had her at 11 o'clock at night and it was about two o'clock in the morning when I got onto the ward so with it being late at night it was a lot easier having her where I didn't have to like reach over to get her out, she was right next to me (ID: 1928).

I was more relaxed, more comfortable, I could reach out and like hold his hand and you can't do that with the others, they're like fish tanks aren't they [laughs] (ID: 1956).

It made it closer...I just spent half of the time just touching her (ID: 2086).

Absolutely fantastic...I missed it when I came home (ID: 1948).

For those women who had experienced caesarean section deliveries and/or had mobility issues after delivery the advantages of the side-car crib were considerably more pronounced:

Having your baby within arm reach and without having to sort of haul yourself out of bed was just tremendous (ID: 1994).

I couldn't physically get to him in the first 12 hours, I had to even call the midwife to come and change his nappy 'cos I couldn't actually sit up, erm, so the side-car was the first time I could sort of lean over and just touch him so that to me was absolutely brilliant, I was so glad that I got that...it's actually amazing to be able to lean over and touch your baby rather than being flat on the bed afterwards (ID: 1952).

Was really good because I ended up with a drip and a catheter so I couldn't really get out of bed so it was really handy to have the cot just there, it made the baby really accessible, if I'd have had the other cot I think I'd have really struggled, so it was great having that (ID: 1986).

Similar to the stand-alone cot group's responses and as demonstrated by the above quotes, there was a strong emphasis on close physical contact and access to baby as being the primary benefit of the side-car cribs. There were also a small number of women who discussed the enjoyment of being on a face-to-face level with their baby whilst lying down in the post-natal ward bed which was also reported in Tully and Ball's (2012) findings. Having an intensified

emotional and physical connection between mother and infant may be beneficial for bonding and enabling the mother to learn and interpret her baby's feeding cues more effectively.

Similar to Tully and Ball's (2012) research, several women directly stated that the side-car cribs helped them with breastfeeding their baby whilst on the post-natal ward. The following quote highlights the importance of this issue for women with significant mobility issues following delivery. When faced with being reliant on staff for breastfeeding assistance, particularly at night-time, women may feel that this creates an additional obstacle to breastfeeding. Potentially, this may become a contributing factor leading to the introduction of formula milk.

When she was crying I had to ask somebody if she was OK and to help me because I had a completely numb leg and I couldn't move, so I think it would have been much more difficult for feeding and things through the night...so if every time I'd have wanted to feed her if I'd have had to ring for somebody I think that would have made it much more difficult...I was really pleased I got the side-car cot and I think it was very beneficial in terms of encouraging breastfeeding and I think if I'd have felt less positive about it (breastfeeding) then I'd have been put off having to ask for help every time (ID: 2215).

Tully and Ball (2013) situate breastfeeding decisions within a conceptual model based on evolutionary principles of parent-offspring conflict. They argue that mothers' decisions can be examined using a cost-benefit assessment, meaning that the investment cost of breastfeeding to the mother should not outweigh the perceived benefits of breastfeeding for the infant. For, example, influential factors may include: mother-infant physical and mental condition, maternal pain and tiredness, perceptions that the infant is unsatisfied with breastfeeding, and the post-partum environment. This model was devised with mothers experiencing a caesarean section delivery in mind but I feel it is applicable to breastfeeding decisions in general. Based on the benefits of side-car crib use on the post-natal ward cited by the mothers in both this study and Tully and Ball's (2012) research, it is fair to conclude that the intervention may help to reduce the cost to the mother when breastfeeding her newborn infant in hospital.

Negative comments

Despite the overall positive responses to the side-car cribs, around half of the women reported some difficulty or issue that arose when using them. The most frequent problem was that the side-car crib was positioned too far down towards the middle of the bed which was also

mentioned by mothers in Tully and Ball's (2012) research. This was an impediment that the research team was aware of but unfortunately the electronic tilting mechanism on the post-natal ward beds, for obvious safety reasons, made it impossible to position the cots elsewhere. Some women were able to overcome this hindrance by shuffling further down the bed so that they were in-line with their baby and others reported that they needed to sit up and reach over to access their baby. One woman, due to having a caesarean section delivery, had to ring for staff assistance for help with access. However, she was later re-admitted to hospital and was provided with a stand-alone cot. She commented that despite the position of the side-car crib on the post-natal ward bed, it remained a better option than the stand-alone cot type. Other negative comments concerning side-car crib use were regarding the immobility of side-car crib, the issue that there are no storage facilities beneath this type of cot, and the observation that it made it difficult for staff to treat mother/assist with breastfeeding.

There were only three women who used the side-car crib who expressed overall dissatisfaction. The first felt that the side-car crib was a useful concept but was worried about safety and unhappy about the positioning on the bed. The second woman had a caesarean section delivery and experienced difficulties accessing baby from the side-car crib and felt the side-car crib was unstable. She stated that she would have preferred to have the stand-alone cot so that she could have had the baby in-line with her vision at the top end of the bed. The third woman was anxious that she might roll onto her baby whilst in the side-car crib or that her blankets might have covered baby and therefore requested to switch to a stand-alone cot after four hours of use. Most of these issues were also raised by mothers participating in Tully and Ball's (2012) research.

Night-time cot use

Correspondingly with the stand-alone cot group, all the women chose to place their baby in the crib at night-time with one exception. This woman's baby was diagnosed as having a low body temperature and a member of staff suggested keeping the baby in close contact to rectify the problem. There were, however, a greater number of incidences, a total of nine women, reporting that they had fallen asleep at some point whilst baby was in the post-natal ward bed.

Excluding the woman discussed above and another woman who purposely bed-shared whilst waiting to be assigned a side-car crib, all the incidences were unintentional. Similar to the stand-alone cot group, most bed-sharing occurred during breastfeeding and two took place whilst mother was holding baby. From these data it is not possible to draw any conclusions relating to the increase in bed-sharing within the side-car crib group. Nevertheless, a speculative suggestion may be that the closer proximity between mother and baby, afforded by the side-car crib, leads to increased frequency of breastfeeding/interactions equating to increased opportunities for bed-sharing to occur. Although, as already indicated by the video footage from Ball *et al* (2006) and Tully and Ball (2012), women's tendency to hold onto their babies rather than placing them into the cot, predictably increases the chances of bed-sharing incidences.

Timing of receipt of side-car crib

During the interviews issues emerged regarding the timing of receipt of the side-car crib. Almost half of the women experienced a delay in receiving the side-car crib which ranged between half an hour and three hours, with the exception of three women who waited between seven and 12 hours. Given that for NECOT Trial participants the average length of stay on the post-natal ward was approximately 37 hours and establishing breastfeeding as soon as possible after delivery is known to be crucial (Ball and Klingaman 2008), even a short delay could have had an impact on the effectiveness of the side-car cribs. Reasons discussed by the women for delay in receiving the side-car crib were that they were waiting to be moved into a bed suitable for side-car crib attachment, staff had problems attaching the side-car crib, and that staff didn't initially realise participation in the trial. In some cases the delay was accurately recorded by staff (confirmed by the mother) but more often than not there were discrepancies between the mothers' accounts and the written records, all of which were an underestimation or failure to record any time delay. Clearly the mothers' accounts are a subjective recall of events but the women were very specific about the time of their birth and the timing of moving to the post-natal ward and other events that occurred. Therefore, the team favoured maternal accounts over the staff records. This action seemed reasonable when taking into account that some of the records stated that the mother was given the side-car crib immediately and on

speaking to the mother she revealed that she had not received the side-car crib at any point during her hospital stay. The updated data were incorporated into the main NECOT Trial database, however, it is likely that undetected errors remained.

Maternal perceptions of staff attitudes towards the side-car cribs

The interviews also revealed staff reaction to the side-car cribs as observed by the women on the post-natal ward. Around a third of the women commented on their perceptions of the attitudes of the staff towards the side-car cribs, half of which were negative and half were positive. Women who observed positive staff reactions discussed how staff quickly reacted to the knowledge that they were participating in the trial and happily attached the side-car crib. For those who experienced negative reactions these were generally due to difficulties attaching the side-car crib and complaints that the cribs cause problems when making up the linen on the beds. Fortunately, the negative reactions displayed by staff appeared to have had no personal effect on the women overall. However, there was one exception, this mother discussed the reaction of staff when she asked for a side-car crib to be given to her:

A bit of a tut actually, they don't like them, the impression I got... 'cos they had to find someone to get it, it was a bit of a fanny on to be honest and then they didn't really know how to attach it to the bed. I can understand their point of view but it was a little bit, erm, it made me feel uncomfortable, especially when you're feeling vulnerable in that situation, I did feel a bit uncomfortable but I'm glad I said no, I really do want one (ID: 1956).

Impact of the weekly follow-up calls

The women were asked if being part of the trial and providing weekly follow-up data for 26 weeks had any impact on the way they acted or thought about feeding their baby or where baby slept at night-time on returning home.

Calls had no perceived impact

The majority of all the women in both groups discussed whether or not the weekly follow-up calls had any impact on their thoughts or actions regarding the care they provided for their baby. Over half (approximately 60%) of the women stated that the calls had no influence on their ideas or behaviours. Within this group just under two thirds of the women had already

had children previously and the remaining third were first time mothers. Several of the women indicated that they already had a plan of what they were going to do before the baby was born and were not influenced in any way by being part of the trial.

I would just say exactly what I had done, it definitely wouldn't have had any impact on what I had done, no (ID: 1918).

No, I knew what I wanted to do (ID: 1979).

Answering the weekly questions didn't influence...I knew what I had to do and I knew what I was comfortable with (ID: 1987).

Calls had a perceived impact

Only five women indicated that the weekly follow-up calls had a direct impact upon the care they provided for their baby, one of which was a first time mother. Three of the women provided accounts revealing how the calls may have prompted a longer duration of breastfeeding or delayed introduction of formula milk:

I don't know whether initially that was kind of more why I was wanting to do the breastfeeding and not introduce formula milk, I don't know whether that might have played just a small part in it but it didn't really affect it in the end anyway 'cos we just did what we had to do (ID: 1928).

Well I did think that when I was kinda typing in my numbers that, you know, and as the weeks went on I thought God I'm still feeding her!...I'd always presumed that I would stop at around the four to five month mark when I started weaning her and I didn't, and I found myself, ooh I wonder [laughs] ... you do feel a bit like I'll just get to the six months and just keep typing it in...gave me a bit of an aim to get to the six months...subconsciously I was thinking, gotta look like the good parent [laughs] and keep going (ID: 1949).

I don't think I'd have had him in the bed anyway but for the breastfeeding, I just tried to do it with everything else that was going on but, yeah, it does make you think yeah, I've gotta keep at it when you're getting phone calls every few weeks, you do try to do your best and when you're left to your own devices, sometimes you think oh I'm knackered, I'm giving up you know [laughs], but if there is someone on at you all the time you think, oh, I'll keep trying, I'll keep trying (ID: 1978).

Two women discussed how the calls had had an impact on decisions regarding where baby should sleep at night-time. In both instances the questions concerning sleep location, although neutrally poised, seem to have initiated or reinforced pre-existing beliefs that bed-sharing is a negative behaviour:

I put her on my bed sometimes but after I used your cot [side-car crib] and you called every week I was thinking it's best to put her in the cot so I never put her in my bed, not even for one hour, I didn't put her in my bed (ID: 2085).

Yeah, 'cos you know the first few questions, does your baby sleep in the bed, yeah, 'cos it happened less and less after that 'cos I felt a bit guilty (ID: 2170).

Although only a small number of women indicated that the calls had altered their actions, one quarter of women indicated that they had made a difference to their thought patterns regarding how they cared for their baby. Noteworthy, the vast majority of women in this group were first time mothers. The women's accounts varied but the overarching theme that emerged was that calls made women more aware of their day-to-day actions regarding feeding and their baby's sleep location. For some women the calls provided a useful and reassuring reminder of their baby's progress which helped them to gauge their achievement of goals, for instance, baby still exclusively breastfeeding at six months as planned, in alignment with biomedical advice. For others it made them think more about their actions in relation to health and safety messages that in some cases caused feelings of guilt or made them feel that their actions were being judged in a negative way. Some women also felt that the weekly calls made them question their own decisions and cast doubt over whether they had made right choices:

It probably did I think, if I'm honest...because we were told that they should stay in the bedroom for six months and we moved him out early, at the time I sort of felt a bit guilty that we had kicked him out and I suppose every week having to record, *on paper*, that somebody could see that, oh my goodness there's a bad parent out there who put their baby in their own room before six months type of thing, so I suppose that made me think, oh gosh, have we done the right thing 'cos it was a reminder every week...if you are doing something that is not text book, then you always do think ooh gosh and similarly with don't feed them before six months and I started weaning him at five months, there's always that ooh, yes he's having food actually and he shouldn't be for another month, I wasn't really going to tell anyone but it's actually recorded on the system [laughs] (ID: 1952).

It certainly gave you the chance to kind of sit there and think well am I doing the right thing, am I doing what's good for the baby, by having to do that each week... 'cos i'm now bottle feeding, have I made the right choice for my baby, should I have persevered and tried to breastfeed a bit longer, or sought a bit more help and things like that (ID: 2194).

I just felt so guilty about stopping ever since, so I think, like every week, having to say no, I'm not breastfeeding anymore, when I first started to say no, I think that made me feel a bit sad (ID: 2084).

It probably didn't change what I did or what I was gonna do I don't think but it did make me think about it more, so when I was answering the questions I was thinking ooh, is it a bad thing that on the odd night he slept an hour in our bed and I was thinking whether that was a good thing or not (ID: 2215).

Even though these women only stated that their thoughts were affected by participating in the trial, there is the possibility that these thoughts may have unconsciously altered the care they provided for their baby. It is evident that throughout most of the interviews there was a strong belief or awareness that breastfeeding is socially and medically associated with the 'right' thing to do and bed-sharing is a 'wrong' or risky activity. The strength of these feelings was often blatantly apparent during the interviews. For example, women who had ceased breastfeeding typically provided detailed accounts of how they had struggled with breastfeeding or provided other reasons to explain why they had no other choice but to introduce formula milk. Similarly, women who had bed-shared, frequently provided justification for their actions as if to avoid negative judgement. Having a weekly reminder and being asked to report feeding and sleeping behaviour each week cannot fail to bring these issues to the forefront of women's minds. Therefore, it would not be unreasonable to suggest that behaviours were inadvertently influenced by participating in the follow-up calls. If this were the case then this may go some way to explain why women's breastfeeding rates within both conditions exceeded those of the local and UK national data (McAndrew *et al* 2012; Newcastle JSNA 2009) and frequency of bed-sharing was not significantly different between the two arms of the trial. Another possible explanation could also be that the women, even though protected by an anonymous identification number, may have misreported their actions on the database in order to conform to a desirable 'good' parent image. Given that the data gathered during the interviews

corresponded with the data the women had previously entered into the automated system this former explanation appears to be more likely.

Hawthorne effect

The Hawthorne effect was first identified following a large research programme investigating methods of increased productivity in the Western Electrical Company's Hawthorne Works in Chicago, US, in the 1920s and 30s. The findings of this study discovered that no matter what changes were introduced to working conditions, they all resulted in increased productivity. The psychological explanation for this occurrence was that the stimulus of being singled out and/or being made to feel important had the effect of escalating production (McCarney *et al* 2007). The definition of the Hawthorne effect has since been extended and it is recognised that the phenomenon may not just impact upon productivity but is also applicable to treatment responses. As a result, it may have implications for clinical research and the general applicability of results to routine practice (*ibid*).

In the context of the NECOT Trial, the increased breastfeeding rates within both cot conditions, supported by the interview evidence, suggests that potentially a Hawthorne effect may have occurred. This effect is most likely to have been produced by the frequent follow-up calls made by all participants irrespective of cot type. McCarney *et al's* (2007) research supports this suggestion as their trial of Ginkgo biloba for treating mild-moderate dementia resulted in a better outcome (measured by their cognitive functioning) in participants who were more intensively followed-up in contrast to those who were subject to minimal follow-up.

Chapter summary

In spite of the results of the main NECOT Trial showing that the side-car cribs did not significantly impact upon breastfeeding duration or exclusivity, the findings of the interviews revealed that they have the potential to enhance women's overall experiences on the post-natal ward. Dissatisfaction with the stand-alone cots was associated with physical and visual separation between mother and infant and difficulties when accessing infants creating an increased reliance on staff for assistance and a barrier to breastfeeding. For women who had experienced a caesarean section delivery, had mobility issues or were experiencing post-

partum pain, these problems were more pronounced. Women using the side-car cribs reported to have felt more emotionally connected to their child and valued being able to access their infant independently without the delay of waiting for staff to attend to their needs which in turn facilitates breastfeeding. Some issues were raised about difficulties associated with using the side-car cribs. However, the overall consensus among mothers from both cot type groups was that the side-car cribs offered more advantages than the stand-alone cots. Consequently, the majority of mothers stated that they would like to see the side-car cribs introduced into standard, everyday practice for all women on the post-natal ward.

The results relating to the follow-up calls showed that a notable proportion of women felt that reporting the weekly data had an impact on how they thought about caring for their infant, with a small number reporting that the calls had directly caused behavioural changes. This is an important finding when examined in conjunction to the NECOT Trial results which reported that women's breastfeeding rates within both cot groups exceeded those of the local and UK national data and frequency of bed-sharing was not significantly different between the two arms of the trial. The women's accounts suggested that frequently reporting feeding and sleeping behaviour raised important issues in the minds of the mothers relating to the health and safety of the infant. As a result, there is a potential that the NECOT Trial participants were affected by a Hawthorne effect that impacted upon the research findings. Consequently, the potential that a Hawthorne effect may occur should be considered by both researchers and policy makers as it may be the frequency of contact that makes a difference to behaviour as opposed to the intervention itself.

Chapter 5 presents the results pertaining to the impact of hospital practices on breastfeeding and post-natal ward experiences. This includes detailed accounts of the mothers' birth experiences and their experiences of skin-to-skin contact and breastfeeding initiation immediately after delivery. This is followed by a discussion of mothers' experiences of breastfeeding on the post-natal ward, occurrences of mother-infant separation and formula use, and general perceptions of the post-natal ward environment.

Chapter 5: Impact of Hospital Practices on Breastfeeding and Post-natal Ward Experiences

Birth experiences

All of the women provided information about their labour and birth experiences, many of which were described in great detail indicating that it was an extremely important episode in the women's lives. They were also asked to comment on whether the events had gone better or as expected or whether they felt the birthing process was worse than they had anticipated. The purpose of gathering this information was to assess if women's birth experiences had any consequential effect on breastfeeding outcomes.

Worse than expected

Half the women reported that the birth was worse than they had expected which was predictably made up of almost three quarters of first time mothers. Most of these first time mothers had interventions that they had not anticipated such as induction, forceps, episiotomy and unscheduled caesarean section deliveries. Many also discussed not being prepared for the pain they experienced or the duration of the labour and several of them talked about how they felt stressed and anxious and painted a traumatic picture of events:

It was more complicated, I was two weeks late...they took me in to be induced...and nothing happened at all for the first 24 hours and I had three sets of pessaries I think...so still nothing had happened on the Saturday morning, erm, so the doctor came and said 'well I can't do anything else and there's no point trying anything more until tomorrow, so if you don't want to wait I'll do a caesarean section' and I kind of thought, oh, I hadn't really thought about that...actually labour then started normally so I had signed all the forms for the caesarean section but then didn't end up having one...but then I'm not sure I'd mentally prepared myself for the pain...and went for the epidural but then it was very bizzare, just a really bizzare experience...not feeling any pain whatsoever and being hooked up to machines... and so it was totally different, 'cos I was anticipating as natural as possible and maybe the birthing pool and nothing happened like I thought it would, then eventually at midnight I went into theatre for a forceps delivery 'cos nothing was happening...so I couldn't really have been prepared for that, I hadn't thought it would go like that...I was at my wits end and just went with whatever they said (ID: 1940).

It was absolutely terrible, I was in slow labour for approximately four days... I couldn't have a mobile birth 'cos I had to be monitored so I ended up on about five different machines, one was monitoring her [baby] heartbeat, my heartbeat, my blood pressure, I was getting

liquids and then I ended up on the epidural and at that point I was just so exhausted 'cos she was in the wrong position coming down the birth canal...and at that point they knew it wasn't going to happen...so they turned around and said 'you can go the way you are going and take a risk or we can do a caesarean section and just get her out now' so I said well just do a caesarean section [quiet, sad tone], it wasn't a very nice experience (ID: 1948).

These quotes also highlight biomedical compulsion to employ technologies when labour falls into what is considered to be outside of the 'normal' progress of events, which in these examples was typically 'prolonged' labour. Consequently, labour becomes 'abnormal' and therefore 'unhealthy' for which a solution must be found (Helman 2001). Jordan's cross-cultural comparisons demonstrate the different views surrounding what is considered 'normal' in childbirth. In low-technology settings there are no strict time pressures imposed around how long a labour should take and the emphasis is on allowing the natural flow of events to occur. In contrast, the Westernised, biomedical perspective assumes that disease and biological events are universal in form, progress in the same way and therefore standardised procedures can be employed to manage them. In this view the physical dimensions of the 'problem' are paramount and patient experiences are considered as largely irrelevant (Davis-Floyd 2003; Helman 2001; Jordan 1993). Furthermore, the above quote appears to suggest that women themselves are held accountable when their bodies 'fail' and are given risk fuelled ultimatums by staff to consent to interventions, leaving little room for free choice or control over their remaining birth experiences.

Kitzinger *et al* (2006) present a variety of arguments as to why women have largely accepted the unprecedented rise in medical interventions in childbirth which they argue as being employed without convincing evidence of improved maternal-infant outcomes. One of the explanations discussed, that appears to be particularly relevant to the above quotes, is that birth is being managed in a climate of fear, meaning that women will endure almost anything if they are told that their baby is potentially in danger. Furthermore, women do not want to be later faced with regret if they refused biomedical recommendations leading them to question 'what if' in cases when infant health becomes compromised. Kitzinger *et al* (2006), also discuss

how this notion of fear extends to the health professionals themselves who feel compelled to intervene 'just in case' to avoid potential hazards but inadvertently generate additional negative consequences. Another study by Green and Baston (2007) also examined women's willingness to accept birth interventions through the use of questionnaire data collected from women during pregnancy and post-partum between the years of 1987 and 2000. The results showed a significant trend towards a more positive attitude towards obstetric interventions antenatally. Furthermore, women who demonstrated a higher level of willingness to accept medical involvement had nearly a twofold increase in the odds of having an operative or instrumental birth compared to women who reported low willingness. This suggests that women's attitude may have played a part in driving the rising rates of caesarean section deliveries and birth interventions seen in recent years. Noteworthy, women's attitudes were also a predictor of epidural use indicating that growing acceptance of birth interventions is mediated by the acceptance of this mode of pain relief.

As expected or better

The other half of the women reported that the birth was as expected, or better; predictably two thirds were women who had already had previous birthing experiences. These women talked about being less stressed, more relaxed, better prepared, having more control and being less frightened and anxious about the delivery. None of the women made any notable negative reference to the pain of the labour. This suggests that perhaps for these experienced women pain had become an accepted part of the process or a previous birth had taught her that she was able to deal with it and was maybe less fearful. For these women the beneficial or improved emotional and psychological aspects of the delivery had the biggest impact on their experiences of a positive labour. Any references to pain were usually to state that it was less intense this time and one woman within this group remarked that she had experienced a virtually pain-free childbirth. This mother attributed this to the birth hypnosis preparation classes she had attended. In using the visualisation and relaxation techniques she learnt she was able to give birth to her baby as relaxed and as calmly as possible which had the effect of minimising pain levels, a technique aligned with the 'Lamaze method' (Kroeger 2004). Some women also described how the birth was made easier as they had experienced fewer medical

interventions than in previous births. For those who did experience interventions their distress was reduced when they were fully informed of what was going on, the environment was perceived to be calm, controlled and organised, and when they had trust and confidence in the staff's professional capabilities. For the first time mothers who felt the birth was as expected or better, nearly all had uncomplicated deliveries with few interventions.

Absolutely fantastic, you know, she [the midwife] was so laid back, erm, she was just saying you know, just do what your body is telling you, what you need to do, it was just great you know, she was absolutely brilliant (ID: 1933).

I thought it was more complicated than I thought it was gonna be but less stressful if that makes sense, like, lots of things happened, I had an emergency caesarean section and I had to be induced and it took two and a half hours once the baby was out for me to be sewn up and I needed a blood transfusion...every professional at the hospital, I just had faith in and I just thought they knew exactly what they were doing and I didn't doubt them, you know, sometimes you think ooh they're not filling me with confidence but every single one of them just came in and set my mind at ease straight away, it was brilliant...you're so out of control and you're in these peoples' hands and you're just lying there, not being able to move and you're thinking what is going on and all you need is for someone to talk to you and say we're doing this now, we need to do this because of this, and you think, right, just do it, get on with it and that's what they did...it was absolutely fantastic, brilliant (ID: 2177).

It was fine, I've been induced with both of them but I thought the first one, 'cos I didn't really know what was happening, was a bit more frightening...it's just 'cos nobody tells you anything, I think they don't want to frighten you, you know, so nobody says anything to you and you don't know what to expect until it happens...but it was fine with the second I knew what to expect and I had a natural delivery and everything (ID: 1978).

Some of these accounts clearly indicate that it was the positive support by staff during labour which significantly enhanced women's experiences. This draws attention to the issue that although the general biomedical view has a tendency to ignore the patient and focus on specific elements of the body, this model should not be homogeneously applied to all healthcare professionals. Helman (2001) argues that when assessing interactions between staff and patients consideration must be given to which and what type of professional is involved (i.e. nurses may behave differently than doctors) as there may be enormous variation within the roles and also cultural differences in how Western medicine is practiced. This point was also

illustrated in Jordan's (1993) cross-cultural comparisons of birth and in Davis-Floyd and Davis' (1997) research on midwives who practiced home deliveries.

Another point that emerges from these quotes is that birth preparation appears to be designed around presenting women an idealised model of birth. Given that birth interventions are commonplace in Western hospital births and frequently led to a cascade of interventions, then it would seem more realistic to offer women some information about how events may progress if interventions are employed. It may be argued that providing this information may make women feel frightened about the birth. However, based on the interview data I observed, birth experiences were viewed more positively when women had an understanding of what was about to take place. This issue is also raised by Lally *et al* (2008) who demonstrate that women's idealistic expectations and hopes with respect to pain relief, control and decision making during birth, are often significantly different to their actual experiences. They argue that antenatal education needs to ensure that women are more appropriately prepared for possible events to reduce the mismatch between expectations and reality. Potentially this may support greater satisfaction with childbirth experiences and help to better prepare women to cope and deal with difficult situations.

Emotional and psychological effects of birth interventions

Through examination of the women's birth accounts it is clear that emotional and psychological support during labour and birth are just as important as the physical care that women receive in the hospital. This appears to be even more crucial when women are subjected to forms of medical intervention. It is commonplace during hospital births that women receive some form of medical intervention that inevitably has a psychological impact. Within the follow-up sample only six women received no analgesic or obstetric intervention, therefore, the overwhelming majority experienced some type of medical involvement. These interventions ranged from using moderate analgesic such as entonox through to major procedures such as caesarean section performed under a GA. The severity of interventions clearly has an impact on the consequential emotional effect, however, as already noted, the potential negative effects can be counterbalanced by positive elements of the birthing environment and the support of those

in attendance. In some instances the negative psychological effects of birth interventions or the birth not living up to the woman's expectations have long lasting effects.

I've actually been diagnosed with post-natal depression because of how I had this picture in my head of how I wanted the birth to go and it didn't go according to plan, 'cos I had pre-eclampsia and was in hospital for a week before and I was induced and it didn't progress so I had to have an emergency caesarean section [under GA] and so I sort of missed out on the birth...he was about four hours old before I met him...I was disappointed, really disappointed 'cos I didn't get that here's your baby kind of thing and when I did first meet him I wasn't really with it anyway you know, it's sort of like he could have been anybody's baby you know...I said to the midwife, I felt like I'd had a baby but I didn't know what it feels like to give birth, it's a really strange feeling (ID: 2110).

Kitzinger (2012) argues that although women are grateful for the care they received, they may feel like they have missed out on something precious and perhaps blame themselves for the way events progressed. This may then lead to a long-lasting sense of failure that can have an effect on the mother's personality, on mother-infant relationships and on relationships between couples. Moreover, Kitzinger (2012) discusses the mounting evidence that suggests that distress after birth, often attributed to post-natal depression, is in fact post-traumatic stress disorder resulting from a medicalised birth in which mothers felt disempowered, helpless or perhaps even violated by the very people who had 'given' them their baby.

The mother who provided the above quote also stated that she attributed the birth experience and the time delay in initiating breastfeeding to the fact that she ceased breastfeeding within the first week after delivery. Similarly, amongst women who stated that the birth was worse than anticipated, a greater proportion stopped breastfeeding within the first week and an increased proportion of breastfeeding drop off was shown in the first four weeks after delivery and a smaller proportion were still breastfeeding at 20 weeks. This may be further exacerbated by the association of stress during labour and physiologically delayed onset of lactation (Grajeda and Perez-Escamilla 2002). Noteworthy, there were three women within the study that did not attempt to breastfeed. All three women stated that experiencing a difficult labour and delivery was the primary factor in their decision.

In terms of dealing with traumatic childbirth experiences there is an NHS Birth Reflections counselling service available at the hospital. This service may be helpful for women to understand and deal with what they had experienced which will also be beneficial for reducing distress in future pregnancies. Indeed, one of the women discussed the benefits of this service after the complicated birth of her previous child:

I had a birth review 'cos I was getting quite uneasy about the whole thing during this pregnancy, 'cos of my previous experiences they reviewed my birth with Katie which was great, it really help to put my mind at rest about the whole thing, so I was really relaxed and looking forward to it...my friend's had it done as well actually and she was the one who mentioned it to me, she had complications in her birth and ended up with a caesarean section and started getting nightmares after the baby was born....it's brilliant 'cos it can completely change your future birth...I think a lot of people don't realise what a big deal it is, being a new mum and the whole pregnancy and birth thing (ID: 1960).

The fact that this type of service exists within the hospital suggests that psychological therapy has a level of status within the biomedical system of maternal-infant health. Nevertheless, this service acts as a treatment for trauma experienced in birth and from examining the evidence from the interviews, for the majority of mothers, little attention is given to preventing psychological distress during the birth in the first instance. This indicates a clinical compulsion to 'fix' the 'problem' at hand without consideration of the potentially negative consequences or the socio-cultural meaning and values associated with childbirth. Helman (2001) argues that medical treatment should never solely deal with physical symptoms. All dimensions, such as, emotional, social and cultural aspects should be taken into account and where necessary should be shared with others, both lay and professional. Moreover, Kitzinger (2012) asserts that woman-to-woman support needs to be rediscovered and birth as a social process needs to once again be celebrated in order to redress the power balance within the medical model of birth.

The above quote also draws attention to enormous impact that pregnancy and birth, even in the absence of complications, have on women's lives. Davis-Floyd's (2003) publication *Birth as an American Rite of Passage* employs the work of van Gennep and Turner to describe the life

changing transition that takes place over one year of a woman's life during which her social status alters from 'woman' to 'mother'. A rite of passage is defined as a series of rituals designed to conduct an individual (or a group) from one social state or status to another, resulting in a transformation in the society's perception of individual and in turn the individual's perception of her/himself. This process is divided into three phases: separation, transition and reincorporation. In the context of female reproduction, Davis-Floyd (2003) describes separation occurring during the early stages of pregnancy when the woman's social identity alters. This is followed by transition, a liminal and lengthy phase during which both significant physiological and socio-cultural changes take place, preparing the woman for motherhood. Birth marks the final phase of transition and leads into the integration stage which extends into the first few months post-partum during which the mother readjusts to her transformed role and identity. This theory of pregnancy and birth as a rite of passage is applicable worldwide. However, the rituals and symbolic messages differ depending on the shared values and beliefs of a given culture, resulting in vastly different reproductive experiences.

Cross-cultural insight on birth experiences

The focus of this study was not to gather information regarding cultural variation of birth. However, within the sample there was a European mother who had delivered her previous two children in France and she was able to provide a fascinating, contrasting view of different birthing systems. She described how her first two pregnancies and births were extremely medicalised and how every expectant mother in France must attend appointments with an obstetrician who also delivers the baby irrespective of the pregnancy being 'normal' or the mode of delivery. For this woman having her third baby in the UK had been a refreshing experience, she valued the fact that birth was managed and attended by midwives and that obstetric involvement was only introduced if and when problems developed. She described how everyone had to follow the same procedure in France which involved lying on the delivery bed with legs in stirrups and only pushing to deliver the baby when being told to do so. This mother's account concurs with Odent's (2003; 2011) critical description of the highly medicalised management of birth in France and is comparable to Jordan's (1993) and Davis-Floyd's (2003) description of birth in the US. This mother's experience in the UK, from her point

of view, was that it was more 'natural' and gave her the freedom to move around and get into positions that felt beneficial and comfortable for her. She went on to say:

The birth belongs to the doctors and not to the mum, the mum is there and she has to do what she is told to do...In France you can't even choose the position you give birth...it's very strange...it's more natural [in the UK], giving birth is natural if everything goes well, if there is a problem things become medical which is logical but in France it is medical anyway (ID: 2123).

This mother also recalled the treatment she received immediately following the birth of her first two children that was very different to her experiences in the UK. During this birth her baby was delivered directly onto her abdomen and remained there for around an hour and began to breastfeed. During this period the staff also allowed her and her husband to enjoy some precious, quiet time alone before being taken to the post-natal ward.

In France when the baby is born, they, I say *they* because I don't even know who, the nurse or the midwife or whoever, take your baby and they go with the dad and they give the baby a bath and they put the baby in some kind of warm bed or incubator, I don't know, for two hours or so, which is very frustrating (ID: 2123).

Odent (2003) is critical of the lack of privacy that is offered to the mother and her companions during birth, stating that privacy is an essential part of giving birth. He argues that all mammals seek to hide and isolate themselves and consequently so too do humans. However, Odent (2003) asserts that this perspective is largely rejected in France due to a lack of belief that mammalian roots have any relevance to current biomedical practices.

Skin-to-skin contact

Out of all the women in my study only two thirds stated that they had skin-to-skin contact in the early stages after giving birth. Reasons given for not having skin-to-skin contact were mainly associated with caesarean section or complicated deliveries or that mother and/or baby required immediate treatment after delivery. Although this appeared to be disappointing for some mothers, it seemed to be accepted that some medical procedures should automatically

preclude the opportunity for skin-to-skin contact to take place and therefore was not questioned.

Of those women who were able to have skin-to-skin contact most were able to successfully breastfeed at that time or within approximately one hour after delivery. It was evident in several accounts where skin-to-skin contact had taken place that staff members were proactive in encouraging breastfeeding during this time. For some women the support and reassurance from the staff was a vitally important step in their breastfeeding commencement. Furthermore, there were some accounts that suggested that women felt the need for reassurance or to ask permission from staff to begin breastfeeding their baby.

I did it myself [initiate breastfeeding during skin-to-skin contact] but I asked if I could [laughs] looking back it feels totally stupid but I said 'it is OK if I feed him' and the midwife said 'yes, he's yours, you can do what you want' [laughs]...they had been so in control of my labour...so it was like I had sorta handed over all responsibility and control to them for the getting the baby out part and it was erm, I suppose it was like taking it back (ID: 2198).

I had to ask 'cos I didn't know [initiate breastfeeding during skin-to-skin contact], I don't know why, I just didn't want to do it myself, but I thought I'd better ask [laughs], it was like I was in school [laughs] (ID: 1977).

There were a number of women who did not have skin-to-skin contact but reported that they were still able to successfully breastfeed within a short time after birth. There were however a small proportion of women, irrespective of having skin-to-skin contact or not, who attempted breastfeeding within the first hour but reported that this feed was unsuccessful. The main explanation for this was that baby was sleepy or not interested in feeding. Other reasons given included mothers were exhausted after delivery, or had problems latching baby to the breast. Only one of these women had experienced a caesarean section delivery, however, all but one had received analgesic medication, most commonly an epidural or spinal block. This form of analgesic was also frequently used by the women who experienced a successful breastfeed, although proportionately this number was lower. More often women were recorded as only having used entonox (commonly known as gas and air), the effects of which rapidly wear-off

after administration. It was notable that amongst the women who reported to have successfully breastfed within an hour of delivery, two thirds were still breastfeeding at 20 weeks and of those who experienced problems initiating breastfeeding most ceased within the first week after birth.

Delayed breastfeeding initiation

Within both groups there were a small number of women who described a significant delay in breastfeeding initiation ranging from approximately three hours to 24 hours. For women who had not had skin-to-skin contact, the prolonged delays in initiating breastfeeding were associated with difficulties during or following delivery whereby mother and/or baby required treatment afterwards. For those who had received skin-to-skin contact but still had a significant delay in initiating breastfeeding, the reasons given were that the baby was too sleepy, the mother too weak to breastfeed, the baby required treatment, and the baby was given a formula feed immediately after delivery. With regards to breastfeeding duration for these women, the delay itself did not appear to equate to breastfeeding cessation in the early weeks following delivery, although it was noteworthy that only a third of these women were still breastfeeding at 20 weeks.

Mother-infant separation

It is standard practice in the UK to keep mother and baby together in the same room following delivery, a practice that was verified as taking place in within this hospital by the mothers' accounts with the exception of medical emergencies. Typically, mother and baby are moved onto the post-natal ward together and any separation during the remainder of the stay should only occur for medical purposes. Three quarters of all the mothers provided data regarding whether or not they had been separated from their babies after being transferred to the post-natal ward. The vast majority of women said they had been kept together at all times, however, there were nine women who revealed that there had been occasions where staff had taken their baby away for a period during the night. The purpose of the separation in most instances was to enable the mother to get some rest and only two cases of separation appeared to be for medical reasons whereby the mother was not well enough to care for the

baby at that time. Dealing with maternal fatigue after birth was a theme explored within Heinig's (2010) research. This study showed that altering staff attitudes regarding the need for intervention to combat this 'problem' (in this instance it was formula supplementation) was difficult to change and conflicted with breastfeeding promotion on the post-natal ward.

The previous tradition of routinely removing all babies from their mothers at night-time has long since been proven to have a detrimental effect on breastfeeding and the physical and emotional well-being of both mother and baby (Bergman *et al* 2004; Morgan *et al* 2011; Winberg 2005). Consequently, it is no longer an acceptable part of UK post-natal practice. Nevertheless, given the number of women who revealed that night-time separation had occurred, it is realistic to suggest that this practice was not an unusual occurrence at this hospital. From the women's accounts it seems that the suggestion of separation was introduced by the staff and in most instances the women seemed to welcome the opportunity for some time apart for their baby. There was, however, one mother who provided an example of how this practice can lead to serious detrimental outcomes.

I feel really quite cross now when I look back on it 'cos I was trying to breastfeed and the first night I had him I wanted him next to my bed but everybody else on the ward had their babies out with the midwives at the station, presumably so mums could get a bit of kip, and I wanted Tom, you know, to be with me and the next night they came in and said 'look, you know, we'd like to take him away, all the other babies are going to be taken away so that you and the other women on the ward can get some sleep' and that made me feel sort of pressured but I was so flipping knackered and I thought well I've had a hard day trying to breastfeed so actually a bit of kip wouldn't go amiss, and they took him away and I found out actually afterwards that they gave him a bottle and they *didn't* tell me about it (ID: 1988).

This mother went on to describe how the baby was taken away again on the third night of her stay and once again unbeknown to her the baby was given two bottles of formula milk. By day four she had become increasingly worried about baby not latching onto the breast and not showing any interest in breastfeeding so she consulted with a midwife. On checking her notes the midwife was able to reveal that staff had provided formula feeds on both nights.

It sounds ridiculous 'cos I'm not a woman who cries but I just started to weep and, you know, I wanted very much to breastfeed and I couldn't get him to latch on and all the rest of it and in the meantime, after the caesarean section my stomach muscle had just gone completely, I mean I was peeing standing up so you're not feeling very dignified and your feeling just knackered and just had this enormous change and all the rest of it and you're feeling quite sore, and on top of this, I had this huge anxiety that he was starving, 'cos they'd been stuffing him full of, in my mind, at that stage, was basically like giving him McDonalds...that to me *really* undermined what I was trying to do (ID: 1988).

This type of disturbing behaviour was also uncovered in Furber and Thomson's (2006) study in which midwives discussed how they knowingly engaged in 'breaking the rules' regarding the BFI breastfeeding policy. During interviews it was revealed that secretly giving formula milk to infants at night was a common practice and was regarded by staff as being responsible care and not deviant behaviour. Similarly to Heinig's (2010) research, this was justified as being for the benefit of the mothers who were experiencing fatigue or difficulties following delivery and in some instances it was actually regarded as essential to keep mothers who were struggling with breastfeeding motivated.

In the case of the mother in this research, the discovery of her infant being given formula milk without her consent resulted in a request to be transferred to a midwifery led unit (MLU) nearby where she reported to have received an enormous amount of breastfeeding support. However, she discussed how her baby continued to refuse the breast leading to his weight drastically plummeting. By this point she stated that the baby would only take milk effectively from a bottle and so she switched to formula feeding entirely with the exception of a small amount of expressed breast-milk up to the age of nine weeks. The mother gave the following response to the question of whether or not she thought the incident at the hospital had contributed to her breastfeeding cessation. Although, it must be stressed that she did not attribute blame for this incident on any one individual member of staff, she attributed the cause of the incident to staff being overworked leading to mistakes and miscommunication.

Before I had him I was confident that breastfeeding would be no problem, it is damn tricky and I may not have had, in fact I'm almost certain I wouldn't have had the easy ride that in my mind I was gonna have with it, but equally I have no doubt at all that my experiences at the hospital really made it a lot harder, you know the hospital was

fantastic in terms of looking after us before he was born but afterwards, Jesus, you just gotta get out of there (ID: 1988).

This quote reflects the findings of several researches that indicate a negative post-natal ward experience and a lack of breastfeeding support on the post-natal ward are correlated with unfulfilled breastfeeding intentions (Burns *et al* 2010; Nelson 2006; Renfrew *et al* 2012; Tarkka *et al* 1998; Thomson and Dykes 2011).

Unrealistic breastfeeding expectations

As highlighted in the above quote, there are some mothers who discover that their expectations of breastfeeding are different to their actual experiences. Several women within the interview sample stated that despite being confident and having antenatal information they felt unprepared for the 'reality' of breastfeeding. Moreover, as breastfeeding is generally considered to be natural it is often also assumed to be simple and straightforward. Therefore, when problems arise it can seem surprising and concerning for women. The emergence of this theme in several other studies suggests that it is a common experience for many mothers (Dykes 2006; Dykes and Williams 1999; Hoddinott *et al* 2012; Pain *et al* 2001; Redshaw and Henderson 2012).

[Referring to the antenatal classes and standard issue literature] they kind of stress the lifestyle aspects of breastfeeding and they didn't really give you any information about what to do if you have [problems], and that's something I've noticed with other people as well, when I've been talking to other mums, that they do have a bit of a shock 'cos breastfeeding is promoted as being very *natural* and I think that people presume natural means *easy*, I think that's actually, really, that isn't a good way...I do think that's quite misleading and they do get a real shock, 'cos they're not really prepared for just how hard it is to feed a baby every three to four hours plus night feeds particularly if you've got a difficult baby and I think that probably doesn't help people to continue (ID: 2120).

The following quote also draws attention to the physical challenges of breastfeeding that comes as a surprise to many women. This was also as demonstrated by Kelleher's (2006) research in which women discussed being aware during pregnancy that they may encounter 'sore nipples' but were completely unprepared for the pain, discomfort and other physical

sensations such as uterine contractions, leakage and engorgement associated with breastfeeding.

I did think the challenges of breastfeeding were rather underplayed in the effort to sell it, for example, I don't remember being told not only does it hurt but it carries on hurting and also that lots of women get infections and that *really* hurts...I did get a lot of support around breastfeeding but I wonder whether sometimes the things that are difficult about breastfeeding are underplayed, particularly before the birth, so you don't actually realise, you know the birth's gonna be painful and challenging but you don't know that breastfeeding is as well, and I think if I'd have been more prepared for it being hard then I probably would have been better at it, if you are expecting a challenge you then sort of rise to it don't you, whereas if you're not then it's much more difficult, especially when you've just had a baby, it's not the best moment to realise that this is something quite difficult that you're trying to do (ID: 1919).

These quotes share similarities with women's discussions of their birth experiences. Preparation for both breastfeeding and birth appears to be presented as an idealistic scenario of what to expect to avoid raising women's concerns. It is clear from the interviews that women wanted to know about potential difficulties and how to deal with them should they arise. Furthermore, if women do not have a realistic expectation of birth and breastfeeding they are more likely to interpret their experiences as problematic or abnormal. For example, mothers considering frequent feeding both day and night to be a sign of insufficient milk, instead of recognising that this is an evolutionary expected behaviour (Ball 2007). Furthermore, as illustrated in Dykes' (2006) research women who did not achieve what they considered to be a natural birth induced feelings of failure.

Breastfeeding experiences on the post-natal ward

For many mothers breastfeeding is a learning process and can be challenging for both novices and for those with previous experience. During the early hours and days after delivery, breastfeeding support on the post-natal ward can be a pivotal stage in helping women to establish the foundations of successful breastfeeding. Furthermore, particularly for those women who are recovering from difficult deliveries, the general care received on the ward can contribute to the mother's ability to access her baby in order to breastfeed.

The majority of women who took part in the interviews were able to provide comments on their experiences of breastfeeding on the post-natal ward, breastfeeding support they received and/or the general care and environment of the post-natal ward. Nearly two thirds of comments regarding the care and support received from the staff whilst on the post-natal ward were negative and just over a third were positive. Both positive and negative comments were made by roughly an even number of first time breastfeeding women and those with previous experiences. Positive remarks included that support increased confidence and was reassuring, they had benefitted from one-to-one guidance, and staff had helped to overcome difficulties accessing baby following birthing difficulties. The following quotes shared similarities with Bäckström *et al's* (2010) research that found that individualised, sensitive breastfeeding support increased confidence and satisfaction of post-natal care in hospital.

I found it [breastfeeding] a bit strange 'cos I couldn't really tell if the baby was getting the food [breast-milk], I found that hard 'cos you don't really know if the baby is taking it but at the hospital the midwives were really good and they'd come round and help you, see if the baby was latched on properly and things like that (ID: 1986).

I think there was a midwife who came round once who asked did I want them to watch me breastfeeding and I said yes, so I done it and she said 'yes, that was absolutely perfect' and that gave us a little bit more confidence (ID: 1918).

Undoubtedly, different women require varying levels of care and support and for those who had positive experiences the level of interaction with staff was adequate and valuable. Nevertheless, this was certainly not true for the majority of women as the negative comments regarding the care and support on the post-natal ward were overwhelmingly associated with staff being too busy to offer sufficient breastfeeding support. Several women also commented that there was a vital need for a member of staff to be solely dedicated to breastfeeding guidance due to the perceived excessive workload of the existing post-natal ward staff.

I couldn't get her to feed at all in the hospital...I didn't actually feed her until I got home...she [the midwife] came and more or less just said 'here's these nipple shields they might help' and they didn't, to be honest they were really busy and in the end I just said I wanted to go home...I felt really stressed by the fact that I hadn't fed her...I felt really

pressured to breastfeed on the ward but not given any help to do it... they were just really, really busy (ID: 2091).

I had to wait a while for someone to come 'cos they were always really busy you know, so I'm that kind of person who doesn't like to bother people you know so I just waited to catch somebody and it was sorta later on in the day and someone came, and I'd been trying myself before then, and I said I just can't get him to latch on...and she did help me to get it started and I did manage to feed him but then after that I couldn't get him to do it again (ID: 2110).

The above quote shared similarities to the experiences of mothers in Dykes' (2006) research who felt that their needs were insignificant in the context of other aspects of the midwives' work. Consequently, calling a member of staff for breastfeeding support was perceived as an unwarranted diversion from more important or urgent tasks. Furthermore, when assistance with breastfeeding was delivered in a rushed manner with women being told what to do as opposed to being guided through difficulties, it was perceived as being counterproductive or of little benefit to helping women to sustain breastfeeding.

Many accounts provided by non-first time mothers described that they felt that the post-natal ward staff made an assumption that they did not require breastfeeding support. Some mothers who had successfully breastfed in the past did not always require support although they still stated they would have liked to be asked if they needed assistance. Some also discussed that it would be beneficial to receive some reassurance that they were managing breastfeeding well. Others suggested that consultation with a member of staff would have boosted their confidence and helped to refresh their memory on correct techniques and what to expect in the first few days and weeks of breastfeeding. Although most of the experienced mothers had breastfed before, several of them had not been as successful with breastfeeding as they would have wished. Therefore, in many ways, they required as much help as a first time mother but were frequently reluctant to ask for the assistance they needed. The following accounts corresponded with experiences of mothers in Dykes' (2006) research who complained that staff rarely 'touched base' with them except only to carry out routine checks which were experienced as emotionally disconnected encounters.

I think the staff on the ward could do a lot more, 'cos even though I'd breastfed before, I know like it comes back to you but not straight away it doesn't, and like when you're getting frustrated 'cos like your baby's wanting fed constantly and there is nobody there, you just want somebody to like sit down and say, yeah, it's alright, you know, it's normal (ID: 2170).

They were fantastic the midwives that were on the ward but I also felt that were they thinking she's a second time mam, she knows what she's doing...well, actually it was four years ago and I'm still scared and I still need support and I knew I had forgot a lot about what I did...I did just feel [that staff thought], oh well, she's a second time mam, she knows what she's doing, I might be wrong but that's how they made me feel (ID: 1987).

I found my experiences this time with Ella was my worst in hospital really, I don't know whether it was just because it was on my notes that this was my fourth time but I was in for two days and I was very rarely approached by *anybody*, I was kind of just left to get on with it you know...in fact I actually feel like I was forgotten about (ID: 2014).

Overall, both the positive and negative factors identified in this research are aligned with the themes identified in Schmied *et al's* (2011a) metasynthesis of women's perceptions and experiences of breastfeeding support. This indicates that the data provided in this research regarding professional breastfeeding support offered in hospital may be used, to an extent, to generalise experiences of other mothers in similar settings.

Post-natal ward environment

Another key theme that emerged was that various aspects of the post-natal ward environment had a negative impact on women's hospital experiences. These factors often disrupted the mothers' breastfeeding behaviour and/or had an emotional impact upon how they felt about breastfeeding on the post-natal ward. Quotes referring to the negative aspects of the post-natal ward were that the busy and noisy environment made it difficult to sleep/rest, being roomed-in with non-breastfeeding mothers felt intimidating, the post-natal ward lacked privacy, and some staff displayed a de-sensitised attitudes towards breastfeeding. The following excerpt summarises many women's breastfeeding experiences on the post-natal ward.

I've had three babies at this hospital and you tend to be in a room with three other people and I've *always*, with *all* of them, been the only one breastfeeding and actually

that is probably the time when I have felt most conscious of the breastfeeding, 'cos you're suddenly made aware that it's not that normal to breastfeed, whereas in the rest of my life it is quite [normal], you know all my friends breastfeed and my family breastfeed but in hospital it's not that normal to breastfeed, and obviously you have this tiny baby they're learning to latch on and you're learning about your baby and erm, I'd have the curtains around me the whole time 'cos I'd have the baby on and off [the breast] and you've got people's husbands sitting opposite to you holding bottles in their baby's mouth and they think you're a freak for breastfeeding, I think it would probably be much easier to breastfeed if you are in a room with people who felt positively about breastfeeding (ID: 1945).

This woman continued to discuss the crucial importance of having breastfeeding support, particularly for first time mothers stating “‘cos if you don't breastfeed then, you're never gonna breastfeed”. In the following passage she provides an illuminating account of how women's feeling and emotions become lost among the routine, medicalised care that they are given.

Everyone can hear *everything* that is said and you've got a midwife saying turn your nipple this way and that way, that's not something I would want somebody's husband or partner to hear. I remember being in and one of the midwives said 'right we need some fresh air' and drew open all the curtains...but then you think, oh, is it alright to draw my curtains again so I can feed my baby, I'm a nurse myself and you get used to things, and you kind of get de-sensitised, obviously the midwives are very de-sensitised, the whole fact that [pause] you've just had a baby and if it's your first baby then it's probably the biggest thing that has happened in your *entire life* and everything is just so new and everything, I can imagine that if you've been a midwife for years and years you just forget about that...and getting your boobs out and stuff is so, erm, it's not a normal thing...when it's your first baby it really is, erm, you just feel so self conscious about it (ID: 1945).

The issue of staff becoming de-sensitised to breastfeeding was also a theme in Taylor and Hutchings' (2012) qualitative research with midwives. When reflecting on practice, many midwives admitted that they had become so preoccupied in everyday practice, that they had actually lost sight of what breastfeeding women actually feel and need. Moreover, this was even the case with midwives who had experienced breastfeeding themselves. Dykes (2006) describes a similar scenario experienced by the women in her research. She discusses how the post-natal ward magnifies dilemmas associated with dualistic discourses around culture and nature, public and private, maternal and sexual causing women to monitor their breastfeeding behaviour and to resist the gaze of others (particularly male onlookers) by closing their curtains around themselves. Moreover, the issue of breastfeeding mothers being placed on a ward

occupied by only formula feeding mothers was also deemed to be a contributory factor in early curtailment of breastfeeding.

During the interviews some women went on to provide a contrasting viewpoint of how their breastfeeding experiences were improved once they were discharged from the hospital. Most women went home or to another familiar environment where they felt more relaxed, in control, and had the support of the community midwife/health visitor along with family and friends. Others were transferred to a nearby MLU where they experienced a much calmer and supportive environment. Nevertheless, McInnes *et al's* (2013) study found that women's urgency to leave the post-natal ward often resulted in the introduction of formula milk due to lack of support in the hospital to get breastfeeding established followed by insufficient support in the home.

I kind of feel a bit towards the hospital that you're kind of a number to them and I know it's 'cos they're really busy but it's quite, erm, but at the MLU I got given one-to-one care 'cos it's very quiet there so there's a lot of support for breastfeeding there...at this hospital I just don't feel that they've got the time to dedicate, because they are so busy...if there was somebody specific there, you know, to go around and speak to new mums, somebody there to help out....there was someone there with me showing me what to do [at the MLU]...I don't think I'd have got my first one to feed by myself and then I may well have not have continued on with the other ones (ID: 1949).

Overall few women had anything positive to say about the post-natal ward environment. Therefore, based on the general opinions provided in the interviews, I feel that the following statement concisely summarises most women's impressions of the hospital maternity care they received at the hospital:

Let's face it, when you go in (to hospital) to have a baby any dignity you have gets left at the door and you pick it up on your way out (ID: 2194).

Introduction of formula milk on the post-natal ward

Another important factor that can interfere with breastfeeding, particularly in the early post-natal period, is the introduction of formula milk. Excluding the three women who did not attempt to breastfeed, a third of all the mothers in the follow-up indicated that their babies were given formula milk whilst on the post-natal ward. This trend is consistent with the

findings of the 2010 Infant Feeding Survey (McAndrew *et al* 2012) that revealed that three in ten (31%) breastfed babies had received additional feeds in the form of formula, water or glucose on the post-natal ward. In approximately 14% of cases, additional feeds had been given on the advice of health professionals and in 10% of cases, it was reported to be the mother's choice. The remaining seven percent said that neither of these reasons applied. Notably, supplementation was associated with an increased likelihood of stopping breastfeeding in the early weeks compared with mothers who exclusively breastfed in hospital. During the interviews roughly half of the women who reported to have introduced formula in hospital revealed that they had initiated this action themselves. Reasons given were that they had previously planned to combine formula feeding with breastfeeding, they encountered problems with breastfeeding, and that they had given formula as a 'top-up' supplementary feed in order to settle their baby. Other mothers' accounts suggested that they gave formula due to the frequency of baby's demands to feed, sore nipples and their perception that their milk had not yet 'come-in' and therefore baby required an alternative source of nutrition.

It was just the first one, like the morning one, yeah, it was actually my mam that give her it, you know, when they're first born...it's just like a little top-up isn't it that they have (ID: 2219).

Well I suppose it was a bit of a challenge both times around...by the second day she was just sucking, sucking, sucking and nothing was coming and if she came off [the breast] she would just scream and I was getting sore, so she did end up on night two having a formula top-up in the hospital (ID: 1994).

Palmer (1993) argues that the assumption that breast-milk cannot exclusively provide their infant with all of its nutritional requirements is uncommon in non-Western societies. In such contexts women are confident that they can breastfeed rather than just hope that they can. In Western, medicalised contexts a distrust of breast-milk and colostrum appears to lead to formula supplementation becoming the default 'solution' to various 'problems' encountered with breastfeeding. The resulting disruption of lactation then drives perceptions of insufficient milk, justifying further use of formula as if it were a self fulfilling prophecy (Baumslag and

Michels 1995; Palmer 1993). This was a theme that emerged in Dykes' (2006) study in which women were described as conceptualising their breasts as faulty machines. Moreover, the reliability of breast-milk production was gauged against formula feeding which was considered more trustworthy due to the visual certainty of their infant's consumption.

Noteworthy, in the majority of incidents of 'top-up' feeding, these were given at night-time and were also associated with trying to stop the baby from crying and/or in an attempt to get baby to go to sleep. As cots were reportedly used by the vast majority of the mothers during the night then the infant's behaviour appears to be associated with 'separation distress call' for the mother to resume close proximity and a cue for her to breastfeed (Christensson *et al* 1995). Responding to infant crying through the use of supplementary formula feeding indicates a lack of understanding (by both mothers and health professionals) of the mutually reinforcing physiological and behavioural process that has evolved between mothers and newborns (Christensson *et al* 1995; Winberg 2005). The inability for a mother to control her baby's crying behaviour can be extremely upsetting and is exacerbated by medical discouragement of bed-sharing preventing instinctive behaviour being played out. The following quote is from a mother who had concerns that her baby's crying was going to disturb the other mothers and babies on the ward and that she was going to fall asleep with baby in her bed when breastfeeding at night. She also reported, significantly, that she may not have asked the staff for formula if she had been assigned a side-car crib:

I only done it [asked for formula milk] because I was frightened that I was gonna squash him or something (ID: 1987).

In some incidents it was unclear who instigated the introduction of formula milk on the post-natal ward but over a third of the women clearly discussed how the staff had prompted for it to be given. Most of the mothers did not appear to dispute this suggestion or even seemed to think giving some formula milk was standard practice. In some instances questionable reasons were given by staff for the need for formula milk indicating either a lack of understanding of the

physiological and behaviour aspects of breastfeeding or that 'top-up' feeding was being used to not only treat 'problems' but as a preventative measure.

As well as trying straight away to get the milk flow established they said she would need formula [due to mother having a blood transfusion] they said it would take a few days [for the milk to come-in] so you know, we'd have to do mix feeding (ID: 1943).

Obviously she did get one or two when we were in hospital, just top-up feeds to make sure she was getting enough milk [confirmed that this was introduced by the staff] (ID: 1948).

They said that because of how big she was, it would be better to top her up with formula because she was so big (ID: 2131).

There were, however, a few women who indicated that they felt under pressure to comply. The following excerpt shares similarities with some of the women's birth accounts whereby fear-fuelled, emotional persuasion was used to convince or overcome resistance from mothers who contested biomedical advice.

We tried quite a few times to feed him but he was not interested at all and it got to like almost 24 hours, or more than that, and they said they were getting concerned and they basically said you've got a choice of giving a formula bottle or we're gonna tube feed him...it actually got to the point where I actually felt quite pressured to formula feed, so in the end they sent a nursery nurse down to try to persuade me to let them give him some formula, so I buckled [laughs], I buckled after a while and gave in...I was disappointed because I thought they'd be saying right OK if we're gonna breastfeed then let's crack it and get him sorted, and get him on the breast but actually it didn't, I was quite surprised that it went sort of the other way, right OK now he needs to have some food so rather than persisting and we will get him [breast]feeding, it was more like he's got to have some food, lets give him the bottle...some midwives were absolutely great [supporting her to continue breastfeeding] but some *clearly*, I could tell, they weren't allowed to say it but I could tell they were just [thinking] give him a bottle, it will solve all your problems, just give him a bottle [laughs]...they're not going to say it 'cos obviously they're not allowed to say it but I got that impression (ID: 1952).

This passage also highlights the confusion women experience when breastfeeding on the post-natal ward. Throughout their pregnancy women are actively encouraged by medical professionals to consider breastfeeding but the management of infant feeding in the hospital

seems to contradict those messages. This conclusion concurs with Beeken and Waterston's (1992) research that criticises maternity services for failing to practice what they preached.

Following the introduction of formula milk on the post-natal ward around a third of these women ceased breastfeeding in the first week after birth. However, in contrast, one third were still breastfeeding at 20 weeks. For those who gave up in the first week there appears to have been multiple factors that may have contributed to the introduction of formula and the cessation of breastfeeding. These included experiencing a difficult delivery, the administration of a GA or a spinal/epidural anaesthetic, delivering via caesarean section, absence of skin-to-skin contact, a delay in initiating breastfeeding, and encountering breastfeeding problems. Furthermore, all of these women had no previous experiences of breastfeeding with all but one being a first time mother. For those who were still breastfeeding at 20 weeks, most already had one child that they had successfully breastfed and there was a theme of commitment and determination to overcome various obstacles to breastfeeding.

It did [effect breastfeeding] 'cos my wound was obviously uncomfortable [infected caesarean section incision], erm, but by that time I was determined that I was gonna carry on [breastfeeding] (ID: 2101).

This was a theme explored in-depth within Avery *et al*'s (2009) qualitative research. The study identified that pregnant women who displayed a 'confident commitment' (a concept related to self-efficacy) to breastfeeding were more likely to achieve breastfeeding goals. This was defined as women being confident in the process of breastfeeding, their own ability to breastfeed and as having a commitment to making breastfeeding work, despite challenges and lack of support. Similarly, confidence and determination were primary factors exhibited in the attitudes and experiences of mothers who exclusively breastfed for six months in Brown and Lee's research (2011). Avery *et al* (2009) argues that prenatal education can play a vital role in enhancing women's 'confident commitment' by reconceptualising breastfeeding as a learned process for both mother and baby. Consequently, setbacks encountered are perceived to be normal rather than as evidence that there is something fundamentally wrong which is often the

case when women hold the view that breastfeeding is a natural (and therefore considered easy) skill.

Chapter summary

These findings highlight the significant impact that hospital practices can have on women's experiences of childbirth, breastfeeding and general post-natal ward experiences. The interviews demonstrated an association between birth interventions and negative birth experiences, absence of skin-to-skin contact, delayed breastfeeding initiation, maternal post-partum physical difficulties and infant alertness. Most of the women reported that following intervention they were affected by more than one of these issues in what appears to be a cascade of implications that contributed to breastfeeding problems and/or the introduction of formula whilst in hospital. This is a noteworthy finding as one of the main differences between Ball *et al*'s 2006 study and the NECOT Trial (Ball *et al* 2011) was that the latter included both caesarean section and vaginal deliveries and women who used opioid analgesics during labour. This suggests that birth interventions and their consequential effects may have offset the beneficial effects of the side-car crib intervention observed in the earlier research.

In some instances women reported that the negative impact of interventions could be somewhat compensated for by the positive effects of emotional support and reassurance provided by staff during delivery and by the care and breastfeeding support they were given on the post-natal ward. For women who were able to have skin-to-skin contact and/or initiated breastfeeding within one hour of delivery, there was a distinct association with breastfeeding success and duration. This suggests that for those women experiencing interventions, where possible, skin-to-skin contact and breastfeeding initiation should be made a priority. Moreover, the interviews emphasised the role that staff played in encouraging women to interact with their infants in the immediate post-partum period, therefore, making staff aware of the importance of promoting these behaviours would be beneficial to improving patient care.

Although most women reported that they remained together with their baby on the post-natal ward at all times with the exception of when mother and/or baby required medical treatment. The outdated practice of removing babies from the ward at night-time remains an issue and as

demonstrated by the account of one participant, may lead to formula milk being given without consent from the mother. Consequently, ingrained practices such as these and the frequent use of formula milk 'top-up' feeding remain a barrier to the successful establishment of breastfeeding. Many of the women, particularly first time mothers, identified that the 'reality' of breastfeeding differed somewhat from their expectations and from the information they had received prenatally. The issue of lack of support from staff was a major problem and almost certainly led to many women unfulfilling their breastfeeding goals. Therefore, increasing the time that staff have available to dedicate to breastfeeding support should be considered a top priority. Moreover, the post-natal ward environment was identified as a problem for some mothers indicating the creation of a more restful atmosphere would be more conducive to breastfeeding success.

Chapter 6 discusses issues relating to mothers' experiences of night-time infant feeding and infant sleep location after returning home and wider issues that effected breastfeeding. This includes a discussion of mothers' prenatal intentions which often contrasted with actual behaviours. The following factors are considered in detail: bed-sharing behaviour, maternal sleep disruption, bedtime routines, and changes in infant sleep location and infant feeding behaviours within the wider socio-cultural context.

Chapter 6: Night-time Infant Feeding and Sleep Location in the Home and Wider Issues Affecting Breastfeeding

Planned infant sleep location

The majority of women who took part in the follow-up interviews provided information on their planned night-time sleep location for their baby once returning home from the hospital. All the women, with the exception of three, said they had planned to share the same room but baby would sleep in a separate cot or crib. The other three women each gave a different answer, one had not prenatally planned a sleep location, one planned to bed-share, and the other planned to place baby in a separate room at night-time. For those mothers who were intending on rooming-in, the most frequently cited reason for this choice was due to information they had received prenatally, mainly from health professionals, which suggested that this was the most appropriate sleeping arrangement. Several women also added that they intended on rooming-in for the first six months, a time period which was, again, based on health professionals' recommendations and some women specifically mentioned that these were guidelines related to SIDS risk reduction. Other reasons for rooming-in were that the mothers liked to remain close to baby and found it reassuring, they were repeating patterns of behaviour from previous children, and it was a more practical/convenient option than having baby in a different room. A number of women added that they had been discouraged from bringing baby into bed by health professionals and several women stated that they had no intention or preferred not to bed-share with their baby. Only three women reported that they had been given information on safety considerations whilst bed-sharing.

Bed-sharing behaviour

Using the weekly information gathered from the main NECOT Trial it was possible to establish the frequency of bed-sharing (mother-infant sleeping together) within the interview group. Overall, approximately two thirds of the mothers indicated that they bed-shared at some time during the 26 week period of data collection, thus, just under one third of the women reported to have never bed-shared. As expected, most of the women who bed-shared reported that this was infrequent and amounted to a proportionately low number of weeks during the 26 week

period. However, there were eight women who reported that they had bed-shared on 20 or more weeks out of the 26 week period and interestingly seven of these women were also still breastfeeding at 20 weeks. This finding is supported by longitudinal data that showed a strong association between bed-sharing and breastfeeding, suggesting that the close mother-infant proximity helps to prolong breastfeeding duration (Ball 2003; Blair and Ball 2009). Moreover, analysis of the main NECOT Trial data also showed that bed-sharing in the first 13 weeks was a significant predictor of both any and exclusive breastfeeding as well as any breastfeeding after supplementation (Howel and Ball 2013).

Reasons for bed-sharing and bringing baby into parental bed

During the follow-up interviews it was possible to explore the reasons that may have led to mothers bringing their infant into the parental bed (mother remaining awake) or bed-sharing (mother-infant sleeping together). Nearly all the women provided information about occasions when they had brought their infant into their bed, suggesting this is a common practice for many mothers. The main reason provided for bringing baby into bed was for the purpose of night-time and early morning breastfeeding. Other reasons included to settle or to get baby off to sleep, when baby woke up early in the morning before mother was ready to rise, and some mothers chose to on occasions when baby was unwell. Each of these factors were also cited as motives to bed-share by mothers within Ball's (2002) study. In most cases the women reported that they endeavoured to remain awake and to place baby back into their crib once they had settled, fallen asleep or finished feeding. The main reasons for not wanting to bed-share were fear of harming the baby and contrary advice from health professionals. Other reasons given were to avoid baby from getting into a habit of sleeping with mother, to encourage separation and independent sleeping and that the mother was not able to sleep well with baby in the parental bed.

As much as it's lovely to have them lying in the bed with you, there's always that, in the back of your mind, well what if I roll over...it was just that thought, I'd just have that in me head (ID: 2194).

I don't believe in them being in the bed anyway, you know, if I can get away with it...in the morning she comes in for half an hour but that's just more like a play in the bed not

for a sleep... with all of them the only time they've ever really slept with us is if they've been really poorly and they want their mam, that sort of thing but not when they are little...you just get so tired sometimes and I think what if I just roll, you know, that would be it, I'm not a lightweight, I'd just squish her and that would be it...it just doesn't bear thinking about (ID: 2219).

I have a couple of times, a few times, not a lot...not a full night...about five or six o'clock he wakes up and I go through [to baby's room] and he feels cold, like his nose and hands... so I'd bring him in but I really try to avoid that (ID: 1978).

Moreover, as the following quote demonstrates, there may be a sense among some mothers that certain behaviours are an infringement on personal space:

None of them have ever slept with us...you've got them all day and I do think you need a little bit of space, somewhere that's yours, if that makes sense, it's *my* bed sort of thing (ID: 2219).

This perception of a breach of spatial boundaries was also evident in Dykes' (2006) research when women expressed discord at their infant using their breasts as comforters or 'dummies' in the absence of a 'need' to feed. This notion clearly has its roots in historical patterns of physical and emotional separation between parent and child and the reductionist medical perspective of breastfeeding serving only a nutritional function (Hardyment 2007; Maher 1992; Stone 1977). Moreover, as highlighted in Schmied and Luptons' (2001) research, the inclination in Western culture to favour autonomy can make the demands that breastfeeding places upon women feel restrictive. This may then cause them to feel resentful when breastfeeding restricts activities leading to a sense of 'loss of self'.

Unintentional bed-sharing

In some incidences, particularly when mothers were breastfeeding, bringing baby into bed led to unintentional bed-sharing or fear that they may have unintentionally fallen asleep with baby still in the bed.

I would have, like, nightmares at certain points and wake up going 'oh my God, oh my God' thinking that I'd left her in the bed...you'd never forgive yourself [if rolled on baby] (ID: 2122).

I'd [breast]feed then move her but what started to happen was, she'd feed then I'd fall asleep and she'd fall asleep and I'd wake up half an hour later and go 'oh, no' and put her back in her cotbed...[I asked if she was comfortable continuing to bed-share on these occasions] not really 'cos Simon didn't know she was there and he might roll over or if I rolled over or if the duvet went over her head or something like that (ID: 2156).

Some mothers also discussed how they employed different strategies to try to avoid unintentionally bed-sharing whilst breastfeeding during the night. However, in some cases, similar to the findings of Kendall-Tackett *et al's* research (2010), the modified arrangements did not always successfully prevent the mother from falling asleep as anticipated. Therefore, new unforeseen or unrecognised potential risks to the baby's safety were created. This was particularly concerning when women described moving onto a settee or they reported to have sat upright on the edge of the bed or on a chair to breastfeed.

No I've not done that [brought baby into bed] apart from when I've been sitting up, I've got a breastfeeding cushion so he lies on that and feeds and then I think in the early weeks I would find, you know when you're up every two hours or whatever, I would find that I'd nodded off with him on the cushion and him on my boob but I was always sitting up I wasn't lying down (ID: 1979).

I had a V-shaped pillow so I'd try my best to sit up and feeding with him lying on another V-shaped pillow but there were times where I'd wake up and think have I fed you? where are you? and the panic sets in, so there were times when I'd fallen asleep and she'd have come off the breast and been asleep on the V-shaped pillow...I did try on a couple of occasions to feed lying down but I didn't feel particularly comfortable and there was always the concern that I'd fall asleep and roll on her or my partner would roll on her, it's that typical thing that they say that, oh well, bed-sharing helps breastfeeding but, you know, the guidelines are saying well you shouldn't really bed-share...the other thing is as well, if anything did happen you would never forgive yourself... I was determined that I was gonna sit up and be awake and alert but it didn't happen (ID: 2101).

I would just come downstairs with me cushion...it was just in case, 'cos I was frightened that I fell asleep with her you know and it's easier sitting up, well, for me I thought if I'm on the settee and sitting rather than me lying in me bed with her you know [I asked if she thought that moving downstairs would keep her awake] that's it [laughs] well I *thought* I would [stay awake][laughs] [I asked if she ever fell asleep with baby downstairs] no, I was alright, I mean my eyes were going but I was OK, if I'd have been lying down the chances are I'd have went [to sleep], you know (ID: 2219).

These excerpts clearly illustrate the disconnected nature of health messages relating to breastfeeding and SIDS risk-reduction that has led to criticism regarding the blanket, fear-fuelled discouragement of bed-sharing advocated by the biomedical profession (Ball 2003; Ball and Volpe 2013; Blair *et al* 2009; McKenna and McDade 2002; Volpe *et al* 2013).

Revised night-time strategies

As already discussed, nearly every mother stated that they prenatally intended on rooming-in with baby, thus suggesting that bed-sharing was not an intended habitual behaviour. Nevertheless, it appears that once the baby was born some mothers accepted and incorporated some degree of bringing baby into bed as part of a revised night-time care strategy. This finding supports other research (Ball 2002; Blair and Ball 2004; Blair *et al* 2010) that showed a significantly greater proportion of breastfed babies sharing the parental bed in comparison to formula fed infants. This may be indicative that expectations of night-time breastfeeding and infant care are mismatched with actual experiences or that emerging benefits of bed-sharing begins to outweigh the perceived negative aspects of the behaviour. The following accounts contextualise mothers' perceptions and also demonstrate a variety of comfort levels with their modified behaviour:

Me and my husband, we don't like doing it [bed-sharing] to be honest, we're not that comfortable with it but Jane is such a poor sleeper and my youngest one was as well and they're awake so much in the night, erm that, you know you got up that many times in the night that there comes a point where you just bring them into bed 'cos you all need some sleep (ID: 1956).

I'm still slightly anxious [about bed-sharing] but sometimes you're so tired and you just think you're at the point where you just can't lift them back in and out the cot again...in fact I think it was more safe [to bed-share] because I was getting so tired that lifting him in and out the cot sometimes, it was like, as if I was gonna, when you're sitting at the end of the bed, sometimes you're starting to fall asleep and you worry that you're gonna drop them before you have actually got them back in the cot, so it was easier [to bed-share] (ID: 2023).

When he was about five weeks old he did have an upper respiratory tract infection and on antibiotics and things and he wasn't really feeding too well and obviously while he was poorly he just wanted to be cuddled-in and things so he was in bed with me the best part of the time [I asked if she was comfortable bed-sharing] yeah, that was absolutely

fine...we've got a single bed upstairs and so me and the baby just slept in there 'cos me husband's quite a deep sleeper whereas I'm quite a light sleeper (ID: 1933).

I think before you have a baby you don't actually understand what it's going to be like and particularly when you are breastfeeding then you have this, or you can have, this absolutely starving baby for the entire night and to put them in a different [location] and to keep on getting in and out [of bed] for me it's not worked, I've actually had to have them right next to me [in bed] because they have wanted to feed, literally, the entire night (ID: 1945).

One mother also discussed how health professionals need to take into consideration that women do not or cannot always follow the guidelines regarding bed-sharing and breastfeeding and called for a more open, un-judgemental dialogue between mothers and professionals about the realities of infant care practices.

I think it's unrealistic for health professionals to say don't do it or do do it because if a mother wants to do it, if she feels that's what's best, she gonna do it... I think if midwives or health visitors come in and say don't do it [bed-share], they're just gonna lie, they're just gonna say 'oh no, I don't', whereas if you say it's better if you don't, however, if you do just make sure this is like that and this is like this and then the mother would feel more confident about talking to them and then if she has any issues she's more likely to discuss them than to hide them and I think that's the same with breastfeeding as well...I know they need to give advice, I understand that but also they need to listen and take on more of a role like just asking how it's been rather than preaching, 'cos nothing is wrong, 'cos how can it be if your baby is fine (ID: 2177).

This once again draws attention to the fact that mothers feel that the advice that medical professionals offer depicts an unrealistic, often unachievable, idealistic model that has no relevance to the mother-infant evolved expectations or the socio-cultural context (Ball and Klingaman 2008; Ball and Volpe 2013). For some women this causes confusion, distress and feelings of guilt when they cannot follow the conflicting night-time infant care guidelines related to breastfeeding and SIDS reduction (Ball 2007). This is exacerbated further by the issue that fear prevents them from raising the issue of bed-sharing with health professionals which may lead to unintentional risky practices (Kendall-Tackett *et al* 2010).

Maternal sleep disruption

During the interviews night-time waking and loss of maternal sleep was discussed and it became apparent that it was an important subject for most mothers. Frequent disturbances were perceived by mothers as problematic and those whose baby did not wake or only had a few episodes of waking, often regarded this as a positive achievement and described themselves as fortunate. In the early weeks and months after birth there appeared to be a greater degree of acceptance that baby would wake during the night to feed but as the baby grew older tolerance of night-time disturbances decreased. However, even in the early weeks after delivery frequent night waking, particularly for first time mothers, was a significant challenge. Some women also expressed that they had not anticipated the frequency of night-time breastfeeding before the birth of the baby, a commonly held misconception in Western societies (Ball and Klingaman 2008). For women with previous experiences or those who anticipated frequent night waking, sleep expectancy was as they had expected or better.

I felt I sort of did alright [amount of maternal sleep], I think probably in the first few months his sleeping patterns were fine, I find it more difficult now and I have tried to stop breastfeeding but he's having none of it so that's kind of a bit of a drama at the moment...I'll get rid of this night-time feed first if I can, this middle of the night is just an absolute killer...looking back I found it easier when he was a smaller baby with his feeding and his sleeping patterns and things (ID: 2101).

I think a bit less [sleep than expected] in the beginning, I didn't realise I'd be up every three hours (ID: 2122).

I think I got less sleep than I expected, certainly in the first few weeks with breastfeeding, it was so intense, I think I was averaging about three to four hours sleep and that was broken, I think if I could have had about four hours straight I think I'd have been a lot better than I was...and then by the time everybody else was up and about I was thinking we've gotta do this, we've gotta do that, we need to get out and about and people are coming to visit, it was just, there was the pressure to sort of do the normal things but you've had no sleep (ID: 2194).

Ball (2003; 2013) states that the common expectations that infant sleep should reflect adult sleep habits as early as possible is incompatible with the physiological characteristics of breastfed infants to wake and feed frequently throughout the day and night. Moreover, infants

are not born with a functioning circadian rhythm and so night waking is characteristic of infant sleep in the first year of life. Consequently, tension between parental expectations and the reality of infant sleeping and feeding behavior is created which has been shown to be a barrier to mothers continuing to breastfeed in Western, industrialised societies.

Bedtime routines

Through these discussions a strong theme regarding the establishment of night-time behavioural routines began to emerge. Nearly all of the mothers talked about whether or not they had introduced or attempted to introduce some type of sleeping regime for their infant. On returning home following the birth, all but four mothers stated that they had no initial fixed routine in place for night-time sleeping arrangements and baby did not have a separate bedtime than the mother. Nevertheless, within weeks of returning home many women began to create an earlier bedtime for baby than themselves and by six months only a small proportion of mothers had not yet imposed a separate bedtime for baby. Consequently, a bedtime routine was employed which was ultimately geared towards attempting to train infants into sleeping during the night and to decrease the frequency of night-time waking, a trend that is widespread in Western societies (Ball and Klingaman 2008). In most cases the imposition of bedtime routines also appeared to coincide with, or had a knock on effect on, changes in infant sleep location and/or feeding behaviour, an occurrence also identified in Ball's (2003) research.

The idea was that she would sleep with us, obviously to begin with, but then we'd get her into her own room as soon as we felt that we could to get into a routine where our sleep wasn't disrupted for work and 'cos I'm rubbish without sleep but I'm sure everyone is (ID: 1940).

We tried to put him down quite early on, we are quite routine people...but he just cried an awful lot on the first few months, especially in the evenings, so in the end I just ended up putting him in the pram down here and then taking him up when we went to bed...but then from 11 weeks something just happened...it's like a switch went at 11 weeks and he started going to sleep at seven o'clock...maybe it's just 'cos we had been in the routine for quite a bit and he finally got it at 11 weeks so the moment he started sleeping we put him upstairs, we always put him upstairs and we have like a bathtime routine and put him down to bed at seven in the evening (ID: 1952).

There were a couple of women who spoke about having a breastfeeding routine which was designed to fit in around existing day-to-day schedules or purposely timed in an attempt to make baby sleep longer at night-time. In both cases the mothers reported that their baby cluster fed in the evenings. There were also several other cases where women reported evening cluster feeding. This may be a typical behaviour as the baby grows older and requires greater quantities of milk. Conversely, it may be a compensatory response to the absence of night-time feeding or infrequent daytime feeding.

In the first, sort of perhaps, seven weeks, he went to bed when we went to bed and I kept him in the moses basket during the evening 'cos he fed, almost, he fed and fed and fed most of the evening, breastfed, erm and if I did that then I found that when I put him down to bed he would sleep quite well and when he was perhaps a couple of months, we established a bedtime for him, then I started getting him up at sort of 10 o'clock and feeding him and then if I did that usually he would sleep 'till in the morning and i'm still doing that now (ID: 1919).

The thing about [breast]feeding on a routine is that you know how it's gonna happen, that if you feed at 10 o'clock you've then got a couple of hours free until two o'clock and you can get on with something...with having an older child that was really very valuable 'cos I know I could fit in the second baby's feeds around my older son's mealtimes and generally arrange it so if I was feeding I could be reading to him...he really has been a very easy baby to feed apart from evenings, particularly when he was getting towards having solids, he would want lots of extra feeds in the evening which was quite hard work (ID: 2120).

Ultimately, this strong imperative to conform to a routine emerges from the imposition of linear, clock time in Western, industrialised countries. Helman (2001) describes that in this context time management is deemed essential to organising a productive society and therefore becomes imposed on every aspect of life, including the management of the body and its processes. Helman (2001) argues that this has led to different types of cultural pressure on people to conform to societal norms that consequently impact upon health and well-being.

Changes in infant sleep location

Over a third of the women discussed moving baby from the mother's bedroom into a different room at night-time, the majority of which occurred before the baby reached six month old. The justification for the change in location were distributed roughly evenly among the following reasons: baby was moved in order to establish a routine, baby was disturbing parent's sleep, parent's felt that they were disturbing baby's sleep, baby began sleeping through the night, and not enough space in parent's room/outgrew sleeping bassinette. One woman also stated it was her husband's choice to move the baby but she would have preferred to have continued to room-in.

We had her in a crib for the first week then she went in a cot in her own room after that...we're quite lucky 'cos she slept through the night straight away and she didn't really need feeding in the night after the first two or three weeks...[I asked what were the reasons for moving baby into own room] partly for space but the main reason was that she was sleeping through so I wasn't having to get up and down and be there anyway so, and it was just like the snuffly noises and I was kind of like waking up to see and she wasn't actually awake...that sounds a bit selfish doesn't it? (ID: 1928).

At about five and a half months I put him in [his own room]...I was going back to work and I thought if I could get him established into a routine and various things but it all went out the window 'cos it just didn't work [laughs] I'm just like the walking dead really [laughs] (ID: 1933).

Well, we started off for the first two weeks to have the moses basket downstairs and we'd put her to bed at seven o'clock and obviously she'd wake up about three hours later but we always tried to make seven o'clock bedtime but then after two weeks she started going off [to sleep] in her room by herself, like in our room until we came upstairs...I think it might have been six weeks or something [moved baby into own room], she's a really light sleeper so every time we were going to bed we were waking her up so we put her in the cot and the cot's really close to my room anyway so it didn't make much difference (ID: 1950).

These quotes imply that moving the infant into another room facilitates longer sleep duration which may or may not be true. For instance, the perception that a short distance would not prevent the mother from hearing her infant wake may have been misjudged. Therefore, when parents do not hear the baby waking it leads them to believe that waking did not occur, potentially resulting in missed feeding cues. However, there was some indication that even

when the infant was in the parent's room feeding cues were potentially being overlooked. 'Snuffly noises' or noises of the baby arousing from sleep were mentioned by a number of women but were not associated with a need to feed and therefore were not acted upon. Similarly in Ball *et al's* (2006) study, video footage showed instances in which women who were rooming-in on the post-natal ward failed to wake when their infant exhibited movements and noises indicating a need to suckle, even though they were only a short distance apart.

Those women who at the time of the interview had not yet introduced a routine, whose baby remained in the parent's room or still needed attention during the night, had mixed feelings on whether this was a positive or a negative issue.

[I asked if she keeps baby with her until she goes to bed herself] yeah, downstairs, [I asked if this has changed as baby got older] no, he's a really terrible sleeper but erm, I think that's partly to do with us as well 'cos Dillon [first baby] had meningitis at five and a half months...so it was only when Dillon was three years old that we started putting him up to bed by himself, we just used to carry him up so we could see him on a night-time, 'cos like we've been so panicky, so I'll be keeping Ashley in our room as long as possible (ID: 2170).

He's seven months now and his sleep seems to be worse 'cos he's still wanting to be fed during the night and I'm getting lots of advice like well, you know, you shouldn't really be feeding him and I say well I know all of that but the reality during the night when you're knackered and you think well if I feed you'll go back to sleep, it's just one of those things, that's one of my current battles (ID: 2101).

Now he goes to bed by himself [I asked is that in a separate room] no, he's still in with us and I know he shouldn't be but I find it a little bit tough to put him in his own room...he sleeps all the way through you know, so he really should be in his own room, he doesn't wake up once, but I just can't do it (ID: 2177).

These quotes imply that it is a common perception that babies should be sleeping through the night between three and six months and if the contrary behaviour persists it is believed that there is something wrong which potentially may result in breastfeeding being blamed for the 'problem'. Furthermore, in some accounts there was evidence of social pressure for the women to change their current behaviour which appeared to become more common as the

infant grew older. This again may cause women to alter their actions in order to conform to the culturally constructed perception of a 'good' mother.

Introduction of formula milk

On returning home from hospital most women began to introduce some formula milk and most ceased breastfeeding before baby was six months old. For example, out of the 64 women who took part in the interview study, by 20 weeks only 29 women were still breastfeeding, of which only 11 were breastfeeding exclusively. A range of different reasons were discussed regarding motivation for the changes in feeding behaviour. However, the overwhelming reason given was because breastfeeding was too demanding or too frequent, also commonly cited by mothers that took part in the Infant Feeding Survey in 2010 and in previous surveys (McAndrew *et al* 2012). Furthermore, a large proportion of mothers specifically mentioned that the changes were directly attributed to attempting to get baby to settle in the evenings and sleep at night-time, a strategy employed by some mothers in Ball's (2003) research. This was similar to Dykes' study (2006) in which women emphasised the importance of returning to 'normal' everyday life, a process that often involved 'progressing' from breastfeeding to formula feeding.

It was quite early on [introduced formula on the third week] and I was really reluctant to 'cos I always put a lot of pressure on myself and I wanted to be able to breastfeed her but erm, with her sleeping through the night, I think in the evening she was wanting a lot of milk and I couldn't keep up with that, I felt like I couldn't, wouldn't be able to produce enough at that time so that's why we introduced that (ID: 1928).

I gave up breastfeeding, erm, for the reason that she wasn't sleeping through, so I thought well if I bottle feed her, erm, then she'll sleep through 'cos my other daughter slept through at three months, so I stopped breastfeeding Sarah at five months old but it didn't work in terms of sleeping through (ID: 2117).

[Introduced formula on the second week] 'cos he hadn't slept, well none of us had slept, for the first, like, week he was just crying all the time 'cos obviously he was, like, hungry you know, and in the end, 'cos my mum was staying with me for the first two weeks, she said 'just give him a bottle, just to get him off tonight and see what happens', you know, and then that was it, I was really upset about it but I decided just to keep on with the bottle 'cos we were both unhappy, he was crying all the time and I was crying all the time and it just seemed less stressful for both of us, in the end and he went off to sleep on the bottle and that was it, I just physically couldn't do anything else (ID: 2110).

Some women in the follow-up discussed how there is a need for women to be given information to help them understand that what many women perceived to be problems relating to feeding and sleeping are in actual fact the typical and expected experiences of breastfeeding mothers. This first quote in particular highlights the value of orientating health information around anthropological, evolutionary based discussions. Moreover, it also demonstrates the importance of delivering this information prenatally so that women can be prepared to accommodate breastfeeding into their lifestyles.

I had imagined that it took half an hour and that was it but really they want to breastfeed constantly as far as I understand it and if they're not being breastfed then they cry, that has been my experience [I asked if that had been something she had anticipated] no I hadn't, no, I understood it much more when, after I'd had them, that it was explained that sort of with Aboriginal babies and things, they actually just attach them and they're there all day and I thought well that is how they want to be fed and it's not surprising 'cos they've just come out of the womb and that's how they were fed in the womb, they don't want to be away from you at all and they don't want that stream of milk to stop, erm, but that doesn't fit in very well with my life does it really [laughs] (ID: 1919).

Some information [is needed] on how long a baby feeds for the first, let's say week, just so they know they're on your breast all the time, 'cos I hear so many mums now saying, 'oh I breastfed for a week and my breasts weren't producing enough milk' and my understanding is that it's *so rare* that your breasts would ever not produce enough milk, it's just that the baby needs to be at the breast for a long time so just to open up women's eyes that they're gonna be on it constantly, perhaps there isn't that information 'cos they don't wanna put women off but something more about the possible difficulties, not necessarily the problems but that it does take three days for your milk, or however long it is, to come down so don't be surprised if erm, they're on your breast for twenty odd hours a day 'cos it gets easier and it's worth persevering, that kind of information...more information about the reality of breastfeeding 'cos my experiences after a month or six weeks it was great but I *really* had to persevere for six weeks but I'm so glad that I did, it was thanks to my mum really and the support she gave me (ID: 2117).

Another mother raised the issue that perceived behavioural problems, such as crying and not sleeping for long periods, might be mistakenly blamed on breastfeeding (which ultimately reflects on the mother's adequacy). Consequently formula becomes introduced as a solution to the difficulties that have the overriding effect of making baby fall asleep due to the

indigestibility of the cow's milk protein, thus wrongly reinforcing the belief that breastfeeding was the cause of the problem (Ball 2003; Baumslag and Michels 1995).

I think that breastfeeding is very natural but when things don't go very well with the baby, when he's crying, it's so easy to put it [blame] on the breastfeeding and I don't think that is true, I think some babies are difficult and some are easy and it's not because you breastfeed that he is difficult and I think the mum and the baby should learn to trust each other...I think that a lot of women will say 'oh my baby was breastfeeding and he was crying and he wasn't sleeping so I gave him a bottle and now he's sleeping' and yeah, I believe it's true but I'm not sure it's because of that, well, we [adults] do that as well when we don't feel very well it's so easy to have a cup of tea when we're not so thirsty and we feel better with food, so I can believe that a baby who has had a big bottle will be full, heavy and full, yeah he might go to sleep but I'm not sure that the baby was that hungry...some are bottle fed and they still wake up at six or seven months old maybe two times in the night anyway...there is a strong belief that the breast-milk is not as nourishing as the other food and I think that's why so many women stop early 'cos they think that their baby is hungry, it's really rare that women don't have milk enough, it's so rare...you often hear people saying 'well I had a really hungry baby so I had to give him a bottle' ...it's to do with what people believe about breastfeeding (ID: 2123).

The same mother also raised the issue of women being suspicious that their own body can be trusted to meet their infant's needs. The following excerpt presents an alternative perspective on the absence of control that women commonly cite as a negative issue when discussing breastfeeding.

I quite trust my baby to do what's good for them you know, I don't think that I should know [the quantity of milk baby is taking], it's like someone who tells you this is the amount of food you have to have for your day and you feel like that's too much for me or that's not enough for me, why can't I take just what I want! [laughs], it's the same for the baby, we should trust that they take what they need and not what we think they need, I think it's a bit odd to think that all babies will need exactly the same, that's why I think breastfeeding is great 'cos nobody can tell you it's too much or not enough, they take what they want and that's fine, I'm happy with that (ID: 2123).

Perceptions of insufficient milk

Few women in this study shared the trust and confidence displayed by the mother who provided the above quote. Instead the interviews revealed that for some women the inability

to gauge the quantity of breast-milk their baby was consuming was a source of anxiety. Moreover, frequency of breastfeeding was not interpreted as the baby regulating its own need for food but was believed by some mothers to be an indication that perhaps they were not producing enough milk or their milk was of poor nutritional quality. These reasons were cited by many women as a very significant factor in their choice to introduce formula milk and/or stop breastfeeding.

I just never quite felt confident 'cos I didn't know what she was getting and I think if there was some miracle way of measuring what she was getting then I'd have been a lot happier (ID: 1940).

You've just got to trust that they are getting enough but you just don't have any idea how much they're actually getting (ID: 1952).

It's always difficult to know 'cos obviously with breastfeeding you don't know how much they're getting, you are never sure if it's definitely the right thing for them (ID: 2175).

The emergence of these ideas clearly indicates that although women had chosen to breastfeed there remained a tendency to compare breastfeeding with formula feeding which for many women would have been a socialised cultural norm. Therefore, formula feeding may be perceived as a tried and tested, trustworthy method and breastfeeding regarded as an unknown and uncertain practice. These quotes echoed the findings of Dykes and Williams (1999) research which highlighted women's underlying ambivalence regarding competency of breastfeeding. As argued by Baumslag and Michels (1995) and Palmer (1993) these concerns are likely to have never existed prior to the creation of the commercial formula milk market.

In some instances there was evidence that the advice or remarks from health professionals may have prompted or reinforced women's fears that their breast-milk was inadequate for their baby, leading to the introduction of formula milk.

[Introduced formula milk at 10 weeks] that was on the advice of my health visitor 'cos it was just not, erm, filling him, whatsoever (ID: 1977).

I think it was about the first week and a half and then the baby got jaundice and the midwife who was coming to the house said that the best way to get rid of it was for him

to drink lots, for the milk to flush it out...and I don't know if that was the trigger for me to say, well I can't give him enough, like I can't work it out, then all of a sudden it started to become really difficult and he wouldn't latch on and I don't know if it was me, well I think it was me, 'cos he hadn't had any issues with it before...well I just thought I can't do it, I can't do it, I could actually see him drinking the bottle whereas I don't know how much he's drinking from me, erm, and just from there I think I just got too stressed about it (ID: 2177).

The above quote draws attention to the physiological effects that can be caused by stress. Two maternal reflexes involved in lactation are the milk-production and milk-ejection or milk 'let-down' reflex. Both involve hormones and are responsive to the driving force of lactation that is suckling. The 'let-down' reflex can also be triggered by visual, olfactory and auditory stimulus, particularly in the early days after birth. It can also become conditioned, for instance, a mother being close to her infant or thinking about her infant can trigger milk ejection. Conversely, the 'let-down' reflex can be temporarily inhibited by the effects of adrenaline caused by a sudden unpleasant psychological or physiological stimuli and minor or chronic stress has been shown to delay the release of milk when initiating a breastfeed. This issue is readily surmountable although the condition itself can cause additional stress to the mother perpetuating the problem. Unfortunately, in contexts where women are already unsure of their capacity to lactate, this temporary inhibition of milk ejection is frequently misinterpreted as a sign of 'insufficient milk' and the introduction of supplementary feeding makes the feared insufficiency a reality (Akre 1991).

Advantages of breastfeeding

Conversely, many women offered comments regarding the advantages they experienced of breastfeeding as opposed to formula feeding. These comments may have been motivational factors for some women to continue breastfeeding irrespective of any difficulties they encountered. The main theme that emerged was that breastfeeding was more convenient particularly when baby woke during the night. Furthermore, breastfeeding enabled mothers to respond immediately to their baby's feeding needs that in turn reduced infant's crying/distress and decreased the disruption of maternal sleep.

It was literally as soon as I heard him stir...I would lift him out straight away and just feed him whilst I was still in bed...I never ever sort of had to get up or sit up or anything, so it was probably the best thing ever actually 'cos I don't think you even fully wake up, whereas with bottles you lie there for an hour afterwards, thinking well I must do this tomorrow and [laughs] when you're [breast]feeding it's the nicest thing ever you don't even hardly open your eyes (ID: 1918).

The first six to eight weeks are so shattering and the thought of, erm, getting up, making sure everything is sterile and going through a process before feeding her was just, it wouldn't have even entered my mind 'cos when she did wake up it was instantaneously needing food...tiny babies, that's it, wake up and screaming (ID: 2098).

[Discussed that baby cried less than expected and in comparison to other babies which she attributed to breastfeeding] breastfeeding definitely, 'cos of the closeness I think that's there and erm, I never really let him [cry] I always picked him up, you're not supposed to are you really as soon as they make a noise, [you are] supposed to just leave them but, oh, I could never do that, I just picked him up and cuddled him, and I think he always knew that, well he got to know that he was always safe and I was always there, so no he didn't and doesn't cry as much as most, well all other babies that I know actually, which I'm quite pleased with (ID: 1956).

Some mothers also discussed the intimacy breastfeeding generated between mother and baby that may also have been a driving force in sustaining breastfeeding. This was identified as an important factor in Schmied and Lupton's (2001) research in which some women discussed how breastfeeding created a special and exclusive relationship with their infant. This enabled them to feel inextricably connected with their child, just as they had been in pregnancy, thus, blurring the boundaries between mother and infant.

Wider issues affecting breastfeeding

Throughout the interviews it became apparent that women's ability and willingness to continue breastfeeding once they returned home was a wide ranging and complex issue, often involving multiple factors. As already discussed the most common reason for the introduction of formula milk and/or ceasing breastfeeding was because mothers found that feeding was too frequent and demanding, particularly at night-time, which often coincided with perceptions of insufficient breast-milk quantity and/or quality. However, themes emerged naturally during conversations drawing attention to wider influences on infant feeding decisions. This area of

questioning was not a main focus of the interviews and therefore has not been fully explored within this study. Nevertheless, these findings appear to echo the overarching theme identified by Hoddinott *et al's* (2012) and McInnes *et al's* (2013) publications (both present evidence from the same qualitative research) of a clash between concepts of idealism and realism. This refers to the often competing values of ideal feeding guidelines based on research evidence and real-world scenarios in which infant feeding is contextualised. Consequently, differing environments, personal situations, the influence of significant others and personal or vicarious feeding history, all contribute to the infant feeding decisions and can accelerate or decelerate behaviour change.

Immediate family circumstances

Familial factors played a key role in many women's decision to introduce formula milk and/or stop breastfeeding. The most frequently cited reasons were to allow partner to have more involvement with feeding the baby, to allow the mother respite from feeding responsibility particularly in the evening/night-time, and to enable mother to spend more time with older children.

We tried giving him formula before bedtime, mainly because my husband wanted to be involved in feeding and I'm not very good at expressing (ID: 1956).

To be honest I thought it would be much better this time but I actually found it really difficult because I had another child, and it was just dreadful, I felt so guilty because there were some days I just felt that he was wanting to feed all the time...I would have my little one ready and she'd be sitting waiting for two hours and I'd be like, 'I know, hold on, I'll not be long' and I thought this isn't fair this to be honest, and I wasn't enjoying it at all, I just never felt I had a break from it...I was just getting stressed and I was tearful, it was just too much for us, I thought in an ideal world if I didn't have another child, I probably would have had the time, you know, to try even harder but it was just too much, erm, it really was...you have to take breastfeeding in context with everything else (ID: 1987).

The above quote shares similarities with the findings of Browner and Press' (1997) research. Their study of pregnant women demonstrated that women often found it difficult to incorporate biomedical advice into their lifestyles, perceiving the recommendations 'too costly' to other aspects of family life. Consequently, only recommendations that appeared realistic, practical and had what they perceived to have sufficient positive effects were adopted or

compromises were made to accommodate the behaviour. Browner and Press (1997) state that this course of action demonstrates the impact of women's intuitive knowledge and experience on behaviour, although, ultimately the biomedical model is still considered to be the desired standard.

In reference to the issue of introducing formula milk to allow partner involvement, Hoddinott *et al's* (2012) research provides a thought provoking explanation as to why infant interactions mediated by feeding is considered to have higher value over other aspects of care giving. They argue that the manner in which breastfeeding is promoted as a bonding activity between mother and child has inadvertently led to anxiety that partners, grandparents or older children will not bond with the infant unless they are actively involved. Consequently, the priority of exclusive breastfeeding becomes less important than the formation of kinship attachments and emotional well-being of the family as a whole.

Wider context of breastfeeding

Wider issues discussed by the mothers may have contributed to breastfeeding curtailment and/or introduction of formula. These included advice, pressure or disapproval from friends and family, concerns over breastfeeding in public and/or in the presence of others, mother and/or baby health problems, introduction of solid foods, and painful or infected breasts. The following quote presents a common argument used by those who advocate formula feeding:

She's quite old fashioned, she said 'a bottle never did you any harm'...so I felt like I didn't want to breastfeed in front of me mam, which was strange (ID: 1933).

Hoddinott *et al* (2012) describes how it can be difficult for some people to accept the causal relationship between breastfeeding and longer term health outcomes. This is due to the fact that the consequences of absence of exclusive breastfeeding for six months are not readily observable or tangible and often parents who were formula fed perceive themselves to be as healthy as others who were breastfed.

A small number of women's decision to introduce formula and/or stop breastfeeding was determined by preparing to return to work outside of the home. Potentially if more women

had continued to breastfeed up until nearer the time they planned on returning to work or maternity leave in the UK was shorter as it is in the US, then this factor may have played a more influential role in infant feeding decisions. The following excerpt is aligned with the results of the 2010 Infant Feeding Survey (McAndrew *et al* 2010) and Hoddinott *et al*'s (2012) research that revealed that for many women returning to work inevitably meant that all or some breastfeeding had to be replaced with formula milk in order to facilitate childcare arrangements. This mother stated that she was unhappy with this change although she did not discuss the option of expressing her milk which incidentally was not a common strategy discussed during the interviews overall. This potentially may be related to the reasons given in Hoddinotts *et al*'s (2012) research that expressing milk can be difficult, regarded as distasteful and can be as time consuming as breastfeeding. Consequently, this suggests despite the introduction of legislation to support working mothers in accordance with WHO recommendations (2003), breastfeeding is still perceived to be incompatible with returning to paid employment outside of the home.

I've only got very, very positive things to say about breastfeeding...when I knew I was gonna have to start weaning [introduce formula due to returning to work] I sort of erm, actually didn't like it to begin with at all 'cos all of a sudden somebody else can get involved with the feeding and I suppose it takes it a little bit away from you...it's lovely that it's the first thing to do on a morning and last thing to do at night...I've not been out with Samantha yet and not had someone make a comment about how content she is and how happy she is (ID: 2098).

This quote also reiterates that perceptions and function of breastfeeding for mothers extend beyond the biomedical focus on breastfeeding for infant nutritional purposes.

Positive influences on breastfeeding

Some social influences played an important positive role in offering useful breastfeeding information for many women. Those mothers who benefitted from ongoing social support from friends, family and/or professionals frequently expressed how this had enhanced their breastfeeding experiences and/or contributed to duration of breastfeeding.

I found it *incredibly* difficult and I only continued on 'cos I've got a very good friend who's a doctor who came around and she helped me latch him on, like, *really* a lot of support from her and just 'cos i'm pig headed, stubborn...I'm very conscious that all of my friends that wanted to breastfeed that stopped breastfeeding are all ones that found the first three to four weeks incredibly difficult and painful (ID: 1952).

I joined a local Sure Start, up close group [breastfeeding support group] when Kate was 10 days old...I got there, like at the end of me tether really, and I was like I dunno what I'm doing, I dunno what I'm doing wrong...and they explained it and put me mind at rest and made us realise that I wasn't actually mental [laughs]...me mam was a great help, me mam was just dead encouraging...and I have made some good friends, that I'm still friends with now from the up close group so that's really helped, it's really helpful to have someone who's feeling and going through the same thing at the same time as you (ID: 2198).

The following quote represents the thoughts of many of the women who emphasised the role of their own mothers in helping them to cope with breastfeeding and adjusting to life with a new baby. This was also a theme in Dykes' (1999) research in which women felt better equipped to 'juggle' everyday responsibilities with infant care when significant others, particularly mothers, were on hand to provide practical assistance, empathy and approval, enabling them to dedicate the required time and energy to breastfeeding.

It wasn't until my mum came up to stay...she gave me lots of support and just to look after my three year old daughter as well so then I could afford to breastfeed for, you know, half an hour or an hour at a time 'cos she was there to give me a rest and things like that, and that's when, you know, it suddenly got easier (ID: 2117).

Importance of breastfeeding

Reasons for initially deciding to breastfeed were discussed by nearly all the women during the interview that provided an insight into the value and importance placed on breastfeeding prenatally. Most women, irrespective of their breastfeeding outcomes, provided responses that indicated that breastfeeding was a worthwhile behaviour mainly from an infant health/physiological perspective but also from a psychological/social standpoint. Furthermore, around three quarters of those who responded stated that they were confident about breastfeeding prenatally. Given that these were reasons for wanting to breastfeed then it is

feasible to suggest that these factors may also have increased women's motivation to continue to breastfeed even when difficulties arose. Conversely, it is also an indication that for those mothers who ceased breastfeeding before they had planned, that other variables emerged after the birth of their baby that had the power to override their initial desire to breastfeed. The three main reasons for wanting to breastfeed were due to following recommended health guidelines, beliefs that it is the best form of feeding to provide the best start in life, and that breastfeeding felt like an instinctive or natural choice that was part of being a mum. These reasons were aligned with the responses of women in other studies who cited deciding to breastfeed because of the health benefits for the infant and because it was perceived to be the 'correct', selfless behaviour of a 'good' mother (Dykes 2006; Murphy 1999; Pain *et al* 2001). Similarly, most of the women talked about immunological and nutritional health benefits for baby during the interviews and only two mums referred specifically to the health benefits for the breastfeeding mother. None of the mums framed their answers in terms of the deficiencies of formula feeding but only as breastfeeding offers advantages over formula feeding. Other reasons provided for wanting to breastfeed were because it was convenient, it facilitated mother-infant bonding, they were financially better off when breastfeeding and they had breastfed previous children. If the mother was breastfed as a baby herself this often had an impact on her own choice to breastfeed as well as other social influences such as having friends or family who were positive breastfeeding role models.

It was just something I felt quite strongly about 'cos obviously breast-milk is the best start you can give a baby (ID: 1933).

It's just something we do in the family [breastfeed], it's what my mum did it's what my gran did and I knew it was the best thing for the baby. I couldn't say I found it terribly appealing before the baby was born, 'cos you don't really [laughs] presumably some people do but when it came to it it's just the benefits for the baby really, you can't really, erm, if you choose not to in a way you are putting your own interests before that of the baby, which you can't really do if you're a mother (ID: 2120).

The high value mothers placed on breastfeeding was also evident in accounts by women who had ceased breastfeeding earlier than planned. Several women spoke about feelings of guilt or failure that they had not managed to persevere or overcome difficulties with breastfeeding.

Emotions such as these are common responses to early curtailment of breastfeeding (Lee 2007; Mozingo *et al* 2000).

I think there was that much going on in the house and [pause] I did feel, to be quite honest, I did feel like quite a bit of a failure this time round, I think with us failing twice before and not being able to do it again, 'cos I was like I am gonna do it this time, I'm really, you know, this is gonna be it and I think I was just, like I say, physically and mentally worn out and getting myself weepy, really weepy and stuff (ID: 2219).

I was all tearful and felt so guilty but at the same time I just wasn't enjoying it [breastfeeding] at all, erm, I just felt miserable...I just had to say to myself, you know, it doesn't mean you're a bad mother, I was laughing saying it, it's stupid isn't it, and I was crying saying it and I don't know why I'm crying, you know, it's not the end of the world and I've done what I can (ID: 1987).

Hoddinott *et al* (2012) identify that women who persevere with exclusive breastfeeding are more likely to have personal qualities such as self confidence and determination and have adequate support available to them. These women are also more likely to be focused on the advantages that breastfeeding provides in terms of the infant's future health. Conversely, some women, although aware of the longer term health consequences of ceasing breastfeeding, are more focused on the current well-being of their baby and the negative effects that the present feeding regime is having on both the infant's, their own and their family's immediate welfare. Consequently, this may lead to the introduction of formula or the cessation of breastfeeding in order to restore the balance of family life.

Some women discussed how comments made by other people also had the effect of inducing or exacerbating feelings of guilt or inadequate parenting. This reinforces the notion that individual infant feeding choices are not just a personal issue but are subject to moral judgement by both health professionals and lay people. This makes women feel vulnerable when formula feeding outside of the home or among unfamiliar acquaintances, particularly other breastfeeding mothers (Lee 2007; Murphy 1999; Pain *et al* 2001).

There is *enormous* pressure afterwards to breastfeed...there was an occasion when I went to baby massage for example and you know, when wee one needed feeding, I gave him a bottle and as it happens it was a mixture of breast-milk and top-up formula and one of the younger mums said 'oh I don't know how you can do that it's like putting *poison* into them' and there was a health visitor in the room at the time who was pretty much agreeing with her and I was just thinking, well you know what, if I were a more impressionable or a more anxious person that would actually would have cut me to the core, you know I feel bad enough as it is...I think some of the health visitors could be better at just saying, look, OK, the very best thing you could do for your baby is to breastfeed but you know what, if you can't, it's not the end of the world (ID: 1988).

[Had begun to introduce some formula in the first week] then a friend of mine made a comment about lazy mums for bottle feeding so I went back and thought 'oh God, I'm gonna breastfeed' (ID: 2117).

Hoddinott *et al* (2012) argue that health promotion orientated around idealistic global policies, such as exclusive breastfeeding for six months, is unhelpful for women and contributes to mothers feeling guilty and distressed if unable to achieve these goals. Moreover, women described feeling pressured by the current health messages and indicated that the 'breast is best' message has been overdone. Instead, the authors advocate a family-centred narrative approach to infant feeding policies that encourage women to aim for more achievable, incremental goals that take into account family circumstances and the diverse meanings and emotions attached to infant feeding.

The challenges of breastfeeding in the presence of others

Although breastfeeding is equated with a 'good' maternal image, there is a perception that some people would prefer that breastfeeding was hidden from public view creating what may seem like a hostile environment (Stearns 1999). Consequently, some mothers feel pressured to avoid breastfeeding in public or feel forced to use toilet facilities deemed by many mothers as a vastly unsuitable location.

Breastfeeding in public is still a bit, erm, some of the facilities when you're out and about aren't the nicest and cleanest, they're trying to say that changing a baby and feeding a baby in a toilet is acceptable, you know [I asked would you feel comfortable breastfeeding in public and not using the breastfeeding facilities] I wouldn't no, I wouldn't have breastfed in public, I'd have went and found a mother and baby room to feed and that's not because of me, that's because of other people's attitudes you know [I asked if she had

encountered negativity from others when breastfeeding] yeah, yeah, I have, it's just, you know, it's like they look at you like you're a freak, you know, now breasts are sort of something that you see on page three but really they're for feeding a baby, they forget that (ID: 1933).

My mum has a real problem with it [breastfeeding], I don't think she minds in the house, erm, but has a real problem with it in public...she can never understand why on earth you would do something that she could see hurts, that makes you really tired and somebody else can't help you out doing...she just had no time for it and said 'for goodness sake just give him a bottle' and everything that was possibly wrong with him, it's breastfeeding, so if he wasn't sleeping 'well maybe he's hungry, maybe he's not getting enough milk' but had I given him the bottle she would never have said that (ID: 1952).

Furthermore, this quote illustrates the issues that many women face when breastfeeding in the home in the early days and weeks after delivery when visitors come to see the new baby. This issue was highlighted in Pain *et al's* (2001) research that described how the boundaries between public and private can become blurred within the home. This situation can feel awkward and confusing to women as the home is often regarded as the 'right' location for breastfeeding to take place. However, when others are present, regardless of location, it still seems to be the woman's responsibility to minimise the embarrassment of others (Dettwyler 1995; Murphy 1999; Pain *et al* 2001; Stearns 1999).

It's a big taboo subject in some families isn't it, and it's a bit like that with me dad... 'cos I was moving house and I had to stay with me dad for a while and it's really erm, not a subject that my dad wanted to know anything about if you know what I mean, so it just made it awkward so, I persevered and I kept going up with my little girl, upstairs, but it's impossible to watch a three year old whilst your'e trying you best with breastfeeding in different rooms you know, so that's why I had to give up (ID: 1978).

Alternatively, visitors may feel like they are intruding into the mother's private space and choose to leave the room when breastfeeding is taking place. On occasions this may be welcomed by the mother but on the other hand the mother may be left feeling ostracised. Similarly, Mahon-Daly and Andrews (2002) describe breastfeeding mothers as being in a liminal

state, neither belonging to their 'old world' nor to their 'new world'. This is tied into the issue that breastfeeding is often considered to be an embarrassing behaviour.

There was two days [on returning home from hospital] where he was on every 20 minutes and it was a nightmare 'cos it's the first few days where you get all your visitors and I was like 'oh God!' and all me husband's friend were coming and I was like 'yeah, I'm just gonna breastfeed now [joky voice]' and all of a sudden the room just empties and I said 'well I'm not shy, I'm just feeding me baby' [laughs] (ID: 2170).

Underpinning the challenges encountered by mothers when breastfeeding in the presence of others is undoubtedly the culturally constructed, sexualisation of breasts in Western societies (Dettwyler 1995; Wolf 2008). This has resulted in a 'cultural paradox' regarding the functions of breasts contributing to a general perception that breastfeeding, although advocated for health reasons, is an act that needs to be correctly managed and preferably hidden from the view of others. This is argued to have contributed to the decline of breastfeeding which is supported by the interview comments of women in this research (Dettwyler 1995; Rodriguez-Garcia and Frazier 1995; Wolf 2008).

Chapter summary

The majority of mothers reported that they had planned a sleeping arrangement for their infant once they returned home. For most this involved rooming-in for the first six months with baby sleeping in a separate cot or crib. Reasons cited were mainly to reduce the risk of SIDS but women also wanted to remain close to the infant for practical and emotional reasons. Additionally, a number of women stated that they had no intention of bed-sharing or bringing baby into bed citing personal preference or discouragement from medical professionals. Nevertheless, it appears that once the baby was born some mothers accepted and incorporated some degree of bringing their baby into bed or bed-sharing as part of a revised night-time care strategy. This suggests that the 'reality' of night-time infant care for many, particularly first time mothers, was mismatched with their expectations, particularly for breastfeeding mothers. Notably, those women who began to routinely bed-share also mostly reported to be still breastfeeding at 20 weeks suggesting a potential association between the behaviours.

The main reason for bringing the baby into the bed was for night-time or early morning breastfeeding. Due to safety fears most mothers endeavoured to remain awake, however, in some cases women reported to have unintentionally fallen asleep and others employed strategies to attempt to remain awake which in some instances created new, unforeseen potential risks to the child's safety. This draws attention to the issue that some mothers may feel that the advice that medical professionals offer depicts an unrealistic, often unachievable, idealistic model that has no relevance to mother-infant evolved expectations. This causes some women confusion, distress and feelings of guilt when they cannot follow the conflicting guidelines on breastfeeding and bed-sharing. Moreover, to avoid negative judgement many women are reluctant to disclose or discuss their behaviours with others. In light of these results it appears that mothers bringing their infant into bed with them is a common occurrence. Consequently, it seems logical that women should be provided with information on how to minimise risks associated with the practice instead of the current trend of only advising mothers against bed-sharing. Ignoring the fact that, either intentionally or unintentionally, bed-sharing is likely to occur at some point in a large proportion of cases is not only unhelpful but may lead to avoidance behaviours that pose a greater risk to the infant.

For many mothers returning home marked the beginning of attempts to get daily life back into a predictable pattern, with many discussing the introduction of feeding and sleeping routines during the first few weeks and months after delivery. Again, the expectations regarding maternal sleep, infant sleep and breastfeeding frequency seemed to be mismatched with the 'reality' that women experienced even though the behaviours described were typically aligned with evolved norms. Consequently, there was a tendency for mothers to alter intended feeding and sleeping patterns in a bid to reduce 'problem' behaviours and to attempt to make the infant conform to a routine. In doing so this often involved altering practices such as, moving the infant's sleep location, ceasing breastfeeding and/or introducing formula and creating a separate bedtime for the infant. Contributing to these issues was the underlying perception of insufficient milk that was felt by many mothers and wider social and familial issues that conflicted with breastfeeding. In order to tackle some of these issues it may be beneficial to incorporate an evolutionary perspective of infant development and infant care into the

information that health professionals offer mothers. This will provide more realistic information of what to expect and therefore reduce the likelihood of evolutionary expected behaviours becoming problematized. Tackling the wider socio-cultural context of breastfeeding is difficult to address, however, once evolutionary perspectives are incorporated into biomedical advice then ideas may diffuse into broader perceptions of appropriate infant care leading to greater support for breastfeeding mothers.

Chapter 7 presents staff perspectives on the NECOT Trial which is discussed alongside issues identified by the NECOT Trial team. This is followed by an exploration of staff attitudes towards side-car cribs and staff perspectives on their role in supporting breastfeeding on the post-natal ward.

Chapter 7: Staff Perspectives on the NECOT Trial and Breastfeeding on the Post-natal Ward

Overview of implementation strategy

The original proposal and planning of the NECOT Trial was devised by Professor Helen Ball and Dr Martin Ward-Platt in collaboration with the hospital's post-natal ward manager at that time and other relevant senior members of staff. Prior to the commencement of the trial a new ward manager was appointed who was fully informed about the study and played a significant role in devising the implementation strategy. The ward manager was also assigned the role of overseeing the running of the trial within the hospital.

Initially it was decided that the nursery nurses on the ward would be employed and paid for additional time on their shifts to check patient records daily and ensure that side-car cribs were attached to the correct beds. This role also involved accurately recording patient data regarding the admittance and discharge times and length of time they were exposed to the side-car crib. This plan was agreed with the full backing of the nursery nurses concerned and was approved by senior level staff within the hospital. At the point of planning no problems implementing the trial on the post-natal ward were anticipated. Once the trial start date approached and the study became underway, issues arose which disrupted the smooth running of the intervention and ultimately may have impacted upon the results of the study.

Problems identified by the NECOT Trial research team

Disruption in conveyance of initial trial information

In order to inform the post-natal staff about the NECOT Trial the research team had planned to have a pre-trial group meeting with all post-natal ward members of staff in order to provide them with information about the purpose of the study and how it would be implemented. Arrangements for the meeting to take place were postponed on several occasions due to conflicting schedules within the hospital. Consequently, due to constraints within the hospital, a presentation was delivered to only the core midwifery team who were asked to cascade the

information to other relevant members of staff. This information was supported by a staff newsletter for all staff produced by the NECOT Trial research team.

Initial side-car crib availability

At the start of the trial the side-car crib manufacturing company failed to deliver the side-car cribs to the hospital on time, despite the order being placed many months in advance. This resulted in only four side-car cribs being available at any one time on the post-natal ward for the first eight weeks. Consequently, some women were prevented from having their assigned side-car crib and were re-categorised into the stand-alone cot group. This problem was rectified once the side-car cribs were delivered which brought the total of available side-car cribs to 20 for the remainder of the trial. This was adequate to meet the trial demands.

Problems with nursery nurses

Approximately six months into the study it became apparent that the nursery nurses were failing to manage the implementation of the trial correctly as women were not receiving available side-car cribs and data were not being accurately recorded (no documented reason was given for this). As a result it was decided between the research team and the post-natal ward manager that the responsibility for implementing the intervention on the post-natal ward was to extend to all members of staff.

Communication with staff

Maintaining communication with staff emerged as a significant challenge throughout the trial. This was largely due to the constant changing shifts on the wards, the number of part-time staff employed and the fact that a large proportion of staff are rotational and therefore move around the different sections within the maternity department or entirely different departments within the hospital on a regular basis (approximately every two months). Furthermore, all the verbal information provided to the staff was reliant on senior staff members to ensure this was included in general meetings and in the discussions during each shift handover meeting. The research team also endeavoured to preserve staff engagement with the trial by employing a variety of strategies designed to maintain awareness. These included: regular staff newsletters, posters around the post-natal ward, NECOT Trial logo mugs

and refreshments (i.e. tea/coffee/biscuits) for the staff rooms, and brightly coloured stickers for patient notes to help staff easily identify women requiring a side-car crib.

Issues identified by staff

The following issues were discussed by members of staff during the interviews, several points of which concurred with the research team's observations.

Conveyance of initial trial information

As the research team were only able to deliver a pre-trial briefing to the core midwifery staff, most of the other staff reported that they only became aware of the NECOT Trial once participants began to appear on the post-natal ward. Interestingly, a number of the core midwifery team's responses indicated that they had not attended the pre-trial briefing. This may have been due to not being on duty at the time of the meeting or poor recollection of events. All staff demonstrated awareness that stickers on patients' notes indicated participation in the trial and provided information on the type of cot they had been allocated. However, as this task was initially assigned to the nursery nurses most staff members did not feel that they had a role in implementing the trial. Moreover, there were some members of staff who appeared to be vague regarding the actual purpose of the NECOT Trial. Most reported that they would have benefitted from receiving clearer information regarding the background of the research, how it was going to be implemented on the post-natal ward and expectations of staff during the study.

One day it just seemed to start, we didn't have a lot of background, so yeah, that possibly might have helped (ID: 081, core healthcare support worker).

I didn't get any input at all [about NECOT Trial] I think it was just presumed that we'd know what it was about because of it happening previously (Ball *et al* 2006; Tully and Ball 2012), so there wasn't, I didn't get much (information), other people might have if they happen to be on duty but because I'm part-time maybe I got missed (ID: 078, core midwife).

We might have been sent an email but didn't remember anyone sitting down and saying now this is the trial, I just don't remember anything like that, I don't remember a big discussion about what the cots would be doing (ID:077, core midwife).

I wasn't [given any information] just 'cos I'm rotational and I came onto the ward when it was already in full swing so we don't get to hear a lot of what's going on until we get here on the ward...we'd get told who was on the trial and who needed side cots...it was for a sleep study wasn't it? (ID:085, rotational midwife).

The ward manager also reported that on reflection, had all staff been able to attend a pre-trial presentation, a greater awareness may have helped to engage staff more effectively with the implementation of the side-car crib intervention on the post-natal ward.

We had identified that the nursery nurses would help and I think that was probably a mistake, and I think it should have been that it was [all] the staff's responsibility, so the staff said 'oh the nursery nurses will do it, I don't have to do it' and the the nursery nurses didn't do it or we didn't have a cot 'cos there wasn't any available so, [staff thought] 'oh it doesn't matter, we don't have to do it if we haven't got a cot' and I think that became ingrained into the culture and then when the nursery nurses stopped doing it, which was right, because it wasn't working, they [staff] just didn't know what to do...I think they saw it [the trial] as just an extra job to do and not, erm, I don't think they thought through the possible benefits [of the side-car cribs] to breastfeeding... most of them [staff] will say they're pro-breastfeeding but I don't think a lot of them had read the pilot study, I don't think they'd had access to them...I think if they had realised the phenomenal results the pilot had had and the potential to actually prove something maybe we would have got them behind the trial a bit better...I still feel in my heart of hearts that if every woman had had that [side-car] cot from the time she was admitted to the ward, I still think that the breastfeeding data and results might have been different (ID:076 ward manager).

These issues are consistent with factors associated with staff resistance to change that include: no input into proposed change, change requires more effort, change leads to confusion in the workplace, and notification of change is provided by second-hand source (Kirkpatrick 1985).

Maintaining communication

It was apparent from staff accounts of events that senior staff endeavoured to try to maintain engagement with the research during general meetings and shift handover briefings. However, it was clear that the constant changes in members of staff and the busy post-natal ward environment made it extremely problematic to ensure that all members of staff received up-to-date, accurate information. This issue was compounded when the post-natal ward manager was unavoidably absent for a significant period during the early stages of the trial due to ill

health. As a result, knowledge about the trial frequently began to be communicated between staff members on the ward and consequently important information became distorted. For example, when the nursery nurses no longer had the primary responsibility of attaching the side-car cribs, several staff members mistakenly believed that the trial had been stopped and therefore some women, for a period of several weeks, were not given their assigned side-car crib. When it became the role of all the staff to implement the intervention on the ward, senior staff reported that it was extremely hard to impress on staff under their management that this was not an optional task. It was not until some individual members of staff were directly confronted by the ward manager for their lack of co-operation that some improvement was seen.

So when the nursery nurses were stopped I was actually on leave and I came back...and everybody thought the trial had stopped so they didn't need to bother so we went through a lot where they [staff] just weren't bothering, the women would ask [for the side-car cribs] and [staff would say] 'oh no the trial's been stopped' and it wasn't, it was just Chinese whispers and then I think what happened was when you get so far down the line it didn't matter what I did, I was always fighting a losing battle and just physically trying to do it was really difficult...you know, trying everything...and in the end it was like talking to staff and saying this is your responsibility, you don't have an option, this is part of your job and it got better but it depended on which staff were on, so the staff that I'd had a positive impact on then changed but the ones I never got contact with never changed (ID:076 ward manager).

This account of events suggests that it was a significant challenge to get the critical mass of staff to 'buy in' to the trial and that like other organisational changes, staff acceptance of their role in the trial is a process that often takes an extended amount of time to take place. Obviously, this is a significant problem within the context of research when changes are required to take place with immediate effect (Bovey and Hede 2001; Scott *et al* 2003; Swan *et al* 2010).

Reasons given for delays or non-receipt of side-car cribs

Even when staff became more aware of their individual responsibility to implement the intervention on the post-natal ward there were still occasions when women did not receive their assigned side-car crib or a significant delay occurred. The main issue identified by the staff was that often they had other priorities or were too busy to attach the side-car crib at the time

of women's arrival from the delivery suite. This appeared to be a particular issue at night-time when staffing levels are lower. As a result there were delays in women getting the side-car crib or non-receipt due to women being discharged before receiving a side-car crib, failure of staff to return to ensure the side-car crib was attached or shifts ended and information was not communicated to incoming members of the team.

Some staff discussed how often women would arrive from the delivery suite without their medical notes and so they were not immediately identified as NECOT Trial participants unless on occasions the mother herself informed staff of her involvement. Once the notes had followed and participants were recognised as requiring a side-car crib, most women were already settled in a bed or in the case of caesarean section mothers, would always arrive onto the post-natal ward in a bed. Several staff reported that attachment of the side-car crib became much more difficult in these cases as the mattress needed to be lifted to slide the attachment mechanism underneath. Depending on the weight of the mother it was still possible to attach the side-car crib with her in situ, although in some instances staff reported that they preferred to wait until a later time when the mother was out of bed before doing so. In some instances this may have been a significant length of time after arrival on the post-natal ward particularly if the mother's mobility was compromised after delivery. Several staff members also reported that ideally the side-car cribs required two people for attachment due to its weight and bulk and possibly a third member of staff to support the mother. This may have resulted in some members of staff waiting until more staff members were available to assist with the attachment, again causing longer delays.

That was a nightmare [providing participants with side-car cribs], 'cos they were getting missed 'cos they would come from the delivery suite, and then depending on what shift you were on, it could be two days by the time the lady got her cot, 'cos they weren't always put on, I think 'cos in the initial stages there was myself and another nursery nurse allocated to do this and they thought oh it's the nursery nurses' job rather than all staff have to do it...so a lot of mums did get missed (ID:088, core nursery nurse).

Putting the [side-car] cots on was fine if the mum was out of bed so if we knew she was in the study before she arrived [on the post-natal ward from delivery suite] we could get the cot ready but then there were a few times where it was a caesarean section arrived on the ward, then we'd get the notes and see she was in the study, trying to fix the cots on

with the lady in the bed is difficult, it's a two man job, which it should be but you were fiddling and the poor mum was nearly getting tipped out the bed on the other side...we could do it but it was awkward 'cos sometimes you'd have a third standing on the far side supporting the mum before we'd roll her out of bed to get the cot on but it was no problem if there was no-one in the bed or sometimes if we were delayed in finding out she was in the trial, maybe when the mum was up and in the shower we could get the cot on easily (ID:084, core midwife).

Sometimes you're actually too busy to go back with the [side-car] cot...say if someone came in on the morning, [I'd think] oh get that cot and then someone would want something then, oh I'll get that that cot and it could be like six o'clock at night before they get the cot (ID:077, core midwife).

These quotes suggest that some staff were fully aware of the need to implement the trial. However, as already highlighted, factors such as the change requiring extra effort or caused some confusion in the workplace, had the ability to override and obstruct the study's progress (Kirkpatrick 1985).

Staff attitudes towards using side-car cribs

During the interviews most of the staff identified that the side-car cribs afforded women greater access to their babies. This was particularly helpful at night-time and for mothers who had experienced a caesarean section or suffered mobility issues after delivery. There was also some suggestion from one member of staff and the ward manager that the side-car cribs were safer than the stand-alone cots due to reducing bed-sharing (particularly in mothers who were medicated) and by eliminating the risk of potential harm associated with transferral of babies to and from the stand-alone cots. The comments from the ward manager were specifically made in relation to a previous Sleep Lab PhD study conducted by Dr. K. Tully (nee Klingaman) in which caesarean section mothers were filmed at night-time. Some mothers were shown to be struggling to lift and lower their babies to and from the cot from their bedside and in some cases there was a potential risk to the child (Tully and Ball 2012).

I would like them [side-car cribs] to be used [after the trial] and I think from a safety issue alone I think they should be used because, you know, with the videos that [Dr. K. Tully] showed and I think the midwives should see those videos of how the mothers are

handling these babies behind those curtains with those [stand-alone] cots (ID:076, ward manager).

Nevertheless, there were negative issues raised with regards to staff working around the side-car cribs on the wards. Aside from the difficulties already discussed regarding attachment of the side-car cribs to the beds, the main problem staff had was that they felt that the side-car cribs hindered their access to the mother. This made it difficult for staff to provide necessary care and to perform post-natal checks. Once more, one midwife commented that in an emergency situation the side-car cribs may create a potential safety concern by inhibiting urgent access. As a result, staff may have felt the intervention caused more harm than good and therefore made them reluctant to engage with the study (Kirkpatrick 1985). Underlying the concerns with using side-car cribs may have been related to the restricted space on the post-natal wards. The area allocated for each patient's cubicle is small and needs to accommodate furniture other than a bed and a crib such as an armchair, storage locker and any medical equipment required for the mother and infant. Moreover, this space was further restricted by the trial's health and safety requirement that each mother who was allocated a side-car crib also required a stand-alone cot for transportation of their baby around the post-natal ward. Staff complained that because the side-car crib was static and in such a confined space that access was only afforded safely (some staff members reported back strain and bruising from reaching over the side-car cribs) from one side of the bed. This emerged to be a particular problem for staff when providing breastfeeding support for the mothers when women were feeding their infant from the breast adjacent to the side-car crib. From a visual point of view this concern could be relevant should the mother be lying on her side with her back to the member of staff at the accessible bedside. However, based on the UNICEF Baby Friendly guidelines (WHO 1989; WHO/UNICEF 2009) that staff were encouraged to follow, all breastfeeding guidance should be communicated verbally and should not involve a 'hands-on' approach from the staff which emerged to have been the likely method employed by the staff at the time of the trial. To overcome the difficulties of access for breastfeeding support, some of the staff reported that they asked women to transfer into the armchair whilst they provided

assistance. However, this was not always possible for women who were immobile after delivery. Another concern that was raised by several members of staff was that the side-car cribs caused problems when changing and making the bed linen but this was obviously deemed to be a minor negative issue.

Honestly, the cots, the cots in the space are just no good at all, the reasoning of the cots was to help the mums but for us [staff] it was just a nightmare 'cos the bays aren't that big...and you've got other bits of equipment and stuff that impedes you and then to just get in past that cot and then you bash yourself against the cot...to help somebody with breastfeeding on one side was fine but to alternate to the other side where the cot was was a nightmare and if you needed to get in, you were doing yourself more damage 'cos you're like stretching over the cot (ID:077, core midwife).

It [side-car crib] did impede and when you were coming to do somebody's blood pressure or something then you have to look and think, right, now how am I gonna approach this 'cos I can't pull the cot out...and that was the problem with breastfeeding, it was OK if someone was gonna feed off the other side [non-cot side] 'cos you could get to them...you couldn't stretch across, you couldn't get to them to help...I think that's why some people didn't like it 'cos they did realise that it did have an effect on how much we could help and access them, not that we are supposed to be hands-on for breastfeeding but they do need some kind of support and we couldn't do it from that side (ID:078, core midwife).

The problem practically around the ward is, they have their bed then they have 17,000 bags around the bed area, you've got lockers, the curtains are quite hemmed in and then you've got the NECOT cot strapped on the side and you just couldn't get access....and a couple of times, especially on nightshift and I was trying to help with a breastfeeding mum and I was just trying to get in to see what was happening and I hurt my back 'cos I was reaching over the cot, it was not good, just not practical at all, but the mums loved them...they could just slide them [baby] across and they loved that...particularly with the caesarean section mums, definitely (ID: 084, core midwife).

From the point of view of the ward manager, the main problem in trying to engage staff with the trial was that the staff focused on the short-term as opposed to the long-term consequences of the intervention. Staff appeared to be more concerned with how the side-car cribs negatively affected their immediate ability to provide care on the post-natal ward and was an unwelcomed addition to their already heavy workload. The failure of staff to engage with the wider positive potential of the side-car cribs in relation to breastfeeding, longer term health outcomes and improving women's experiences on the post-natal ward, may be a result of lack

of understanding of the trial rationale and/or symptomatic of the high pressured, stressful work environment. The following quote draws attention to the issue that even when a change is supported by staff in principle, an existing strained environment can drastically hinder its progression into practice, a pattern highlighted in other research (Hughes *et al* 2002; Kirkham 1999).

In a unit that's really busy and staff aren't motivated, if they don't feel they don't have to do something they won't do it 'cos they're so stressed...on nightshift most of the time they'd only be two of them [midwives] on the ward, they'd have 24 women and at least 24 babies, some of them really high risk mothers and babies who could get really quite poorly if they weren't monitored so I don't think they saw giving a [side-car] cot as a high priority, whereas, in reality, if that cot made a difference to their breastfeeding rates, if they'd given that cot to that woman earlier on, if it had made a difference to her breastfeeding, she could have actually have done a great deal of good towards that baby's [health] because it's breastfeeding (ID:076 ward manager).

Staff experiences and attitudes towards breastfeeding support on the post-natal ward

An important aspect of the staff interviews was to explore the importance breastfeeding support provided by staff and whether or not they felt that the service they provided matched the needs of the mothers. A strong theme of the importance of breastfeeding support emerged from the discussions and it was clear that theoretically it was a main priority of all the post-natal ward staff. The core midwifery staff in particular spoke in detail of their commitment to the role of providing education and practical help for breastfeeding mothers in the vital hours and days after delivery. They also recognised that the post-natal ward is a place where women should have the opportunity to develop their breastfeeding ability and confidence in a supported environment.

Sadly, the overwhelming consensus amongst the staff was that although breastfeeding was high on the agenda for importance, the reality of what staff were able to deliver for the women in their care was frustratingly sub-standard in both quantity and quality. This was attributed primarily to low staffing levels, high workloads and a stressful environment compounded by a rapid turnover of patients, a prominent theme identified in Dykes' (2006) research. The

following quotes provide a valuable insight into the high pressured day-to-day environment in which the staff are typically working:

For next door's 24 bedded ward [surgical ward] there's three midwives on and we're full today, so that's eight to nine women each and they're all newly sectioned so they've all had major surgery, they need all the medical, you know, drips, catheters, wound dressing, observations, blood pressures done, so you have all that and we have all the transitional care babies, so all tube feeding and that sort of thing so if you have eight of those or nine of those then you're pretty full on, I mean you have 18 people really for one midwife really 'cos it's mums and babies, this is a 24 bedded ward here [non-surgical ward] and there are two midwives on this morning (ID:084, core midwife).

This member of staff also went on to discuss the inability of staff to get to know or assist the women in their care due to the changing trends in timing of discharge following delivery:

I just feel that here, especially, this is where the normal delivery ladies go and they're in and out so quick that really the time we get with breastfeeding is very, very small and sometimes the mum's priorities are, I need to get home, I've got visitors coming and they are just badgering you to get home and they say they intend to breastfeed but they go home and you think, well, actually, we haven't given them any help, so you just hope antenatally and community-wise that is going to suffice and keep them breastfeeding [I asked if she thought the shorter stay on the post-natal ward has made a difference to breastfeeding] yes, huge, definitely, first babies [first time mothers] they used to stay in about five days but now they're home within six hours...I think you need a day to let the dust settle and get your head around the fact that you've had a baby and *then* you can think about breastfeeding and how it's going to work and stuff (ID:084, core midwife).

However, this assertion that a longer post-natal ward stay is beneficial to breastfeeding mothers is not supported by research evidence. A Cochrane Review (Brown *et al* 2002) concluded that earlier post-natal discharge of healthy mothers and term infants did not appear to have adverse effects on breastfeeding. Moreover, a study by Sheehan *et al* (2001) cited a post-natal stay of over 48 hours as one of the contributory factors associated with early curtailment of breastfeeding although this may be related to the observation that the women in this study were also reluctant to remain in the hospital after delivery. Potentially, this may indicate that the environment in which breastfeeding guidance is given is just as significant as the help itself, a suggestion that is supported by the maternal interviews in this research.

Limited ability to provide breastfeeding support

Hospital midwives are ultimately responsible for identifying women with breastfeeding support needs and must deal with or delegate the care to another member of staff. Several midwives reported that they were aware of the necessity to try to organise their time to ensure women received the breastfeeding support they needed but frequently they found that other medical priorities demanded their attention. Dykes (2006) identified the same issue in her research and argued that in a system that is supposed to be centred on efficiency, the method in which staff are expected to operate is far from efficient. The staff interviewed in this study reported that due to time restrictions, the limited breastfeeding support provided was usually directed towards those believed to be a greater priority. These were considered to be women with low weight babies who required feeding monitoring, first time mothers and women who directly asked for assistance. Many women also only remain on the post-natal ward for a matter of hours, thus reducing the opportunity for staff to provide breastfeeding guidance. Moreover, the limited occasions staff have to dedicate to breastfeeding support may not correspond with times when infants are ready to feed which is undoubtedly the time when mothers required help the most. A couple of members of staff spoke of negative feelings such as anxiety and guilt caused by not being able to fulfil their breastfeeding supporting role, a factor identified by Edwards *et al* (2011) as contributing to some individuals leaving the nursing profession. Conversely, on the occasions when staff were able to help they reported that it gave them a better sense of job satisfaction and personal achievement.

Well erm, it's whoever's needs are most, you just have to decide 'cos you can't tear yourself in half, so the mums will ask for help or if you see them struggling you'll go in and help...I think if you can stay with them for the whole feed then they appreciate it but you're going in helping them put the baby on [the breast] and going off and that's not helpful 'cos the baby can just come off so if you've got the time to stay then it's lovely (ID:087, core midwife).

I always feel quite anxious when I know a woman is trying to breastfeed and she's struggling with the breastfeeding and it can quite often take an hour of your time to just stand and try, you know, assist the woman to get the baby on the breast but if you've got the demands of other women and other things going on, quite often I think the breastfeeding support suffers because of the demands on your time and the lack of resources... I sometimes feel guilty 'cos I haven't had the time to spend with the women

that perhaps they needed and a result of that they may, you know, that may affect whether they breastfeed or not so I do feel quite guilty 'cos you don't always have the time to spend with them that we should (ID: 091, rotational midwife).

The following quote also highlights that some staff have a sense of awareness that not only does breastfeeding support have immediate benefits but also impacts upon the mothers' future actions:

A lot of the mams decide to go to a MLU 'cos they've got more one-to-one there and you get your own little room and here they just see midwives flitting about and the mams they just feel like they're kind of like left to their own devices kind of thing and that they're not given the support that they need, so they just *need* more support that is the big issue...I did my infant feeding [independent studies] at university in 2006 [four years prior] and it was really good because shortly after...I saw a mam, she was actually re-admitted 'cos she'd [baby] lost 30% of her birth weight so we had to go from the start and I was able to show her how to hand express which was *really* good...I was able to put my training into use and it was really good, I was really happy 'cos I'd gone through everything with her and that mam recently had a [another baby] boy in special care and she had remembered everything I had taught her which was really good and she went home breastfeeding her little boy as well [I asked if this was satisfying] oh, yes it is (ID:088, core nursery nurse).

From speaking to the staff it was apparent that the role of providing breastfeeding support was entirely self-managed and therefore it was up to the individual to prioritise their own workload. This then draws into question how each individual member of staff values breastfeeding and whether they feel that other factors associated with post-natal care are of greater benefit to the mother and baby. Within the scope of the interviews there was no evidence to suggest that any member of staff was not committed to breastfeeding support. However, it was noticeable that some members of staff recognised that a personal concerted effort was needed to prevent breastfeeding slipping into a lower priority position against other daily tasks. Furthermore, some members of staff clearly demonstrated that establishing effective breastfeeding on the post-natal ward was the basic foundation of positive long-term health outcomes. However, as suggested by the ward manager, the connection to breastfeeding outcomes and the side-car crib intervention may not have been fully realised by the staff.

I would say it's [establishing breastfeeding] probably one of the most important things for the women, 'cos when you've had a baby you just wanna know that you can feed it, so I think it actually rates very high [priority], it's probably the thing that they want to sort of become efficient at, that's their main priority so it features very highly, really if you can get the feeding going well then that's half the battle, 'cos a lot of things that then can go wrong, go wrong because the baby isn't feeding properly, so I spend a lot of time and I've found that if you get in right at the beginning and give the support, the baby and the mum learn much quicker and it's a much easier process so I actually spend a lot of my time with feeding (ID:086, core midwife)

This description of the post-natal ward working conditions is synonymous with Dykes' (2006) research in which she describes a rushed, chaotic and fragmented approach to care. She discusses how the unpredictability of the events on the ward meant that members of staff may be moved at anytime to treat another patient. This created anxiety and insecurity and led to a philosophy of needing to get the job done in case the situation suddenly changed. Consequently, relationships between mothers and midwives suffered and led to staff feeling stressed and disappointed with the medical system they were expected to operate within. Similarly, Schmied *et al's* (2011b) research revealed that the working environment of the post-natal ward and organisational constraints were considerable obstacles to the successful implementation of the BFHI despite a strong commitment shown by staff to engaging with the programme.

Contextualising 'normal' behaviour

The problem associated with breastfeeding women being roomed-in on the post-natal ward with formula feeding mothers was something that featured during the interviews with the mothers and also in Dykes' research (2006). This was not an issue that was directly discussed with the staff but the following quote emerged from one interview that supports the mothers' feelings that the post-natal ward environment has the potential to influence women's infant feeding decisions.

I find that a lot of women who are in a bay with women who are bottle feeding...they're more sort of asking if they can use [formula] top-ups (ID: 089, core nursery nurse).

Furthermore, one member of staff commented that the environment in which the staff members are working whereby they must alternate care between high-risk babies and 'normal' infants across the two wards may affect their judgements on appropriate infant feeding advice that is given to women and their newborns. This member of staff speculated that perhaps staff intervene prematurely or instigate the use of 'top-up' formula feeding on the post-natal ward because they have been trained to deal with vulnerable babies and there is no separate procedure for those babies who are not at risk.

Because we are a high risk unit and we have a lot of high risk small babies that are transitional care, etcetera, sometimes it's difficult to treat a normal baby and a normal breastfeeding woman, you know, like, to treat them separately and if they don't breastfeed within so many hours we don't worry about it, you kind of, I don't know, there's a kind of a merging, I think, of what's normal (ID:091, rotational midwife).

This kind of response to situations may once again be associated with a clinical compulsion to intervene, as described by Kitzinger *et al* (2006), in which interventions are employed 'just in case' for fear of potential complications. It also illustrates what Davis-Floyd (2003) describes as a Technocratic imperative to try to improve on the natural bodily processes that are inherently defective and require manipulation from scientific intervention.

Inadequate staff training

A Cochrane Review has shown that staff with up-to-date theoretical and practical breastfeeding knowledge and following a clear breastfeeding policy has a beneficial impact on breastfeeding outcomes (Renfrew *et al* 2012). However, several members of staff discussed the lack of training and guidance with regards to breastfeeding support procedures for patients. It was reported that previously training was delivered on a yearly basis but had been absent for the past two years leaving some members of lower grade staff with no formal breastfeeding training whatsoever (verified by ward manager). Furthermore, members of staff who were not present at the time of training were not offered additional opportunities to gain instruction. This was a problem for staff on leave, new members of staff, rotational staff and part-time staff. At the time of the interviews there was a proposal to create a new position for a breastfeeding co-ordinator and to introduce a more thorough training programme which was supported and

welcomed by the staff (someone was appointed to this position shortly after the completion of the NECOT Trial). Many felt it would eliminate the issue of inconsistent advice being given to women by various members of the team and would help them feel better equipped to deal with breastfeeding issues and deliver effective guidance to mothers. Some staff also commented that having members of staff whose role is entirely dedicated to breastfeeding support would help to alleviate the pressure from the midwives and provide the women with the time and quality of care they require.

Personally I can do it [offer support] with being a mother but I haven't been on the breastfeeding course yet and sometimes I'm a little bit aware, I don't want to give out the wrong [information]...there's nothing worse than being a new mum and someone telling you one thing and someone telling you something else (ID:092, rotational support worker).

We haven't had anyone in that role [breastfeeding co-ordinator] for a long time and you could argue that there is a benefit to having someone who is dedicated to just the breastfeeding support on the wards, yeah, it is definitely the role of midwife to do that but with eight women and eight babies, you know, it's a lot of care (ID:091, rotational midwife).

[Discussing how breastfeeding support may be improved] more time, more staff...and for the midwives going on their updates...so that everyone can tell the women the same kind of information, I think that would help...just a bit more consistency for the women (ID:085, rotational midwife).

In addition to up-to-date breastfeeding staff training, Taylor and Hutchings' (2012) research demonstrates the value of incorporating qualitative accounts of the mother's experiences of breastfeeding into education programmes. The research involved using video narratives of women's lived experiences of breastfeeding which was indicated to have a powerful impact on improving staff attitudes towards breastfeeding support that has the potential to be carried forward into clinical practice. The need for integrating women's views into maternity practices is also strongly advocated by Green (2012) who asserts that this should take place on the level of individual care, a local systems level, a policy level and on a research agenda level.

NECOT Trial feedback and suggestions for future research

The brightly coloured stickers on patients' notes and information around the wards were conveyed by the staff as an effective method to remind them about implementing the NECOT Trial. However, it was evident from discussions that the most successful method to engage staff was through direct person-to-person contact. A suggested approach to manage the running of the trial better was to have a member of the NECOT Trial research team present at the hospital on a daily or at least a weekly basis. That person would then be able to oversee the running of the trial more closely, assist with distributing side-car cribs on the post-natal ward and be able to provide face-to-face information and updates at staff handover meetings. This was believed to be necessary because staff were already overburdened with responsibilities and were unable to dedicate the time needed to ensure the smooth running of a large research project.

I think it would have been better if there was a project lead [from the research team] who had been based here [at the hospital] 'cos it was such a big study... if it had've been me and it was my piece of research, I'd have gone to the ward every morning and last thing at night...and I was trying to do that but obviously when I had 60 odd members of staff to manage and two wards to manage and everything else and at the same time I was working clinically 'cos my job is not just to manage the wards I have to work clinically like the other midwives as well so it was just really difficult, impossible to do it (ID:076 ward manager).

We've got 23-24 women and you're doing x amount of stuff and I know it doesn't sound like a big job to get the cot but, oh, that bloody cot, and I think it would have been good if someone else could have taken more charge of it (ID:077, core midwife).

Obviously the notes had stickers on them and we found various stickers on telephones, toilet doors and things [laughs] just to boost our brains...and the ward manager was excellent, you know, at post-natal handovers and meetings and because we have rotational staff that come on the ward as well, so it's very difficult to keep them up-to-date with what's going on so it was a reminder for them but, yes, it was a bit too much but it reminded us so it was good (ID:084, core midwife).

With some research studies that are going on at the moment the research midwives are more sort of visible on the wards and you're reminded of that everyday because they are there in person, even though there were bright orange stickers on the notes, you can look at them and not see them if you know what I mean, I know that sounds silly but you can look at it but not think, oh, they just become commonplace (ID:090, core midwife).

This issue highlights the difficulties of the academic-clinical research partnership as the research team were based 50 miles away from the hospital. Several members of the research team were regularly present at the hospital on a daily basis, but were based in the antenatal scan clinics for recruitment, or in the records office obtaining data, not on the post-natal wards. Greater research team presence would have required greater funding, and the trial received the maximum funding available from the NIHR funding programme.

Due to the difficulties encountered with staff identifying participants and attaching side-car cribs to the beds it was suggested that all women on the post-natal ward, irrespective of trial participation, might have been given side-car cribs for a period of time until the numbers of trial participants were saturated. Within the NECOT Trial's RCT research design this obviously was not possible but nevertheless is a valid consideration for future research projects. This issue also has a bearing on the acceptance of the future use of the side-car cribs on the ward. If all the current stand-alone cots were replaced by side-car cribs permanently attached to the beds then the problems associated with staff's frequent attachment and uncoupling are removed. This also eliminates the option of staff having the choice of whether to use or not to use the side-car cribs which inevitably helps staff to become accustomed to the changes.

[I asked if she thought that the staff adapt to change or other research projects well] I think when you look at the research there's the laggards and then there's the ones that, you know, are really keen to change and then you've got the middle ones...and when you read it you think well actually that's *true* and when you look in practice it's true and what's more difficult in a place as big as this is that you don't see, like, the laggards as often or you might not have had access to the ones who want to change (076, ward manager).

If it showed that it did help with the feeding and the women preferred it then, yeah, [would be happy to use side-car cribs in the future] we'd have to work around it...people don't like change do they, so you get used to one thing and then it gets changed and it does take a little while, probably after however long, months, a year, or whatever, you know we'd probably say actually we prefer these to the other ones (ID:093, core midwife).

In a busy hospital such as this it is an obvious challenge to introduce new procedures, particularly when it involves an additional task to be added to the staff's workload. Providing a clear background to the research and involving staff in the planning stages were identified as potentially advantageous in facilitating this process, as was providing access to the final results of the study. Some staff commented that it was disappointing that they contributed time and effort into studies but the results were never communicated back to them. Addressing these issues were identified as being helpful for incentivising staff to co-operate with research and increase the likelihood that they will be happy to use the side-car cribs outside the confines of a trial. Several staff commented that although they had difficulties working around the side-car cribs, knowing that the mothers reported liking them and that they had potential to facilitate breastfeeding, would have made them more likely to promote their use in the future. Communication difficulties were acknowledged by staff but many felt that email correspondence was an important means of keeping up-to-date with occurrences and that this method was underutilised for passing on information regarding the NECOT Trial.

It [the trial] went well 'cos we got a lot of feedback from the mums but we don't get to know if it was a good thing [did not receive the trial results] [I asked if it would be useful to learn about the trial at the beginning and then the results at the end] ah ha, yes, to say what the results are, like I say, we don't get to find out what the results are, I feel like it would be a very good point [I asked if she ever got to hear the results from other trials] not really, 'cos on delivery suite they used to do the blood and stuff for the placentas and you never got any feedback, you hear oh we're doing this trial but you never heard if it did any good...it would help to understand why you are doing these trials...it would be nice to know what the mums really thought of the trial, was it really worth doing it, it was the same with the sleep trial (Tully and Ball 2012), we did all of that and...I'd like to hear what happened...even if they could put it up on the computer and then if people want an update they can get an update (ID:080, core healthcare support worker).

If I had a choice I'd say no [using the side-car cribs in the future] but that's just my point of view but if it's beneficial to the mums then, um hum [yes] (ID:081, core healthcare support worker).

It's nice to know what the outcome is and if anything positive can be gleaned from it and if we've got the equipment, you know, and the findings are positive to the use of those cots then it can support our use of them instead of them sitting in a cupboard, it just seems a bit ridiculous...personally I would be happy to use them [after the trial] as I can definately see the benefits in them for the women (ID:091, rotational midwife).

Again, this supports Taylor and Hutchings' (2012) findings that presenting staff with the mother's post-natal ward perspective has potential to be a beneficial tool in embedding research evidence into everyday clinical practice.

Chapter summary

This chapter highlights the difficulties associated with an academic-clinical research partnership where the research team are based a long distance away from the hospital and are relying on post-natal ward staff to fulfil their obligation to implement the intervention on the post-natal ward. In spite of the extensive efforts of the NECOT Trial research team to ensure the smooth running of the trial, there were disruptive issues that continued to cause problems throughout the duration of the study. Communication difficulties emerged as one of the most noteworthy obstacles, as well as issues relating to the busy working environment of the ward, low staffing levels and overriding workload priorities. Additionally, the interviews revealed that the majority of staff had difficulties attaching the cribs to mothers' beds and encountered problems working around them which may have affected their motivation to implement the intervention. Staff resistance may also have been associated with opposition to incorporating side-car cribs into everyday clinical practice. Although, some staff commented that having information regarding mothers' satisfaction with the side-car cribs would make them happier to promote their future use irrespective of the problems they encountered working around them. This evidence supports the benefit of incorporating qualitative research into RCTs.

Staff discussions surrounding their role in breastfeeding support on the post-natal wards was insightful. Breastfeeding help and guidance for mothers was viewed as high priority but staff felt that what they were able to deliver was frustratingly low in quality and quantity. Again this problem was attributed to the busy working environment, low staffing levels, heavy workloads and rapid turnover of patients. Some staff discussed feelings of guilt and anxiety associated with their inability to fulfil mothers' breastfeeding needs and all staff welcomed proposed improvements with regards to training and changes on the post-natal ward designed to improve patient services. This highlights a major problem in the management of breastfeeding

support at this hospital which is not only inadequate for the mothers accessing maternity services but also for the staff themselves.

Chapter 8 discusses the results in the context of an AK theoretical framework to examine experiences of UK hospital birth, breastfeeding and infant care practices within the context of a RCT. AK in relation to EBM using the NECOT Trial as a case study example is also explored.

Chapter 8: Discussion

Mothers' experiences of childbirth, cot use, breastfeeding and infant care in the hospital

Medicalised labour and birth

It is clear from the results of the interviews that women's experiences in the hospital were heavily restricted and influenced by the clinical environment. The accounts provided were parallel to Jordan's (1993) description of US hospital birth in which the labouring woman is treated like a patient with an illness that requires treatment and not as a person who is experiencing a natural biological event. Consequently, women assume a 'sick role' from the time of admission to the hospital which is the socially acceptable position of an 'ill' person (Helman 2001). In the hospital context the territory is highly specialised and unfamiliar to the mothers. Biomedical procedures and rules, both explicit and implicit, prescribe the way in which staff and patients are expected to behave and dictate the ways in which labour, birth and infant care should be correctly managed (Szurek 1997). Moreover, the way in which the woman presents her 'illness', the verbal and non-verbal 'language of distress' she communicates, must match the culturally prescribed, appropriate set of behaviours that are understood through the shared group ideology (Helman 2001; Hendry 1999; Jordan 1993). In the context of hospital birth, this entails relinquishing decision making power and responsibility to the staff for the management of intrapartum and post-natal care (Jordan 1993). The process of surrendering control was an obvious theme within the interviews and appeared to take place not only unconsciously but also willingly on arrival and was sustained throughout the duration of the hospital stay. Moreover, there was little evidence that the women questioned any of the biomedical recommendations as to how events should progress, highlighting the role of women themselves as driving and sustaining the status quo. Jordan (1993) describes this as a characteristic of a stable AK system that is resistant to change from within, thus creating a mutually reinforcing, rigid system. This level of conformity is a result of consensual beliefs that have become constructed over a long period of time making practices feel, to all involved, to be

the most logical and appropriate way to manage birth. As a result, biomedical knowledge has become elevated to hegemonic AK status within the context of Western maternity care (Lazarus 1997). This leaves little room for competing knowledge systems and virtually eliminates the concept that there could possibly be a rational, alternative way of managing birth and early post-natal care (Jordan 1993; Lazarus 1997). Consequently, notions of 'normal' and 'natural' become culturally defined. For instance, a 'natural' birth in a Westernised context, where nearly all births take place in hospital, may be considered as a medically managed procedure and defined as a birth during which the mother is awake and delivers vaginally but might also include other types of medical interventions (Lazarus 1997). Often cultural interpretations of these concepts only come to light when behaviours are compared cross-culturally as demonstrated by Jordan's (1993) work. This was illustrated in my data by the case of the mother who had previously given birth in France who was able to provide an illuminating contrast between what appeared to her to be a more 'natural' way to give birth in the UK. Jordan's depiction of birth in Holland and Sweden provides additional examples of a situation where birth is considered natural even though it typically takes place in a hospital. This may partly be related to the issue that in Holland, Sweden and the UK, in most situations, childbirth is attended by midwives as opposed to an obstetrician described in her example of US birth. This demonstrates that in addition to differences seen between non-Western and Westernised contexts there is also variation within cultures that both consider biomedical reasoning as the AK on the correct management of birth.

Appropriate management of 'problems'

There were many examples within the women's accounts of the unquestioning acceptance of biomedicine as an AK on the most appropriate way to manage 'problems' that were encountered in the hospital. For instance, the practice of introducing formula milk on the post-natal ward was frequently described by the women as something that 'had to be given' and similarly women spoke of medical interventions such as induction and caesarean sections as something they 'had to have'. In most cases women portrayed themselves as being largely passive during decision making processes and were typically uncritical of the reasoning behind the 'solutions' offered. Clinical compulsion appears to have over-ridden all other

considerations. There was also some evidence that even when women were given options these were presented to them in a highly biased manner. For instance, recommendations were often swiftly followed by a blunt account of the risks involved, particularly for the baby, if consent was not provided, although, the consequential risks associated with the recommended action were not recalled by the mothers to have ever been mentioned. This in effect transforms what should be informed consent into an emotionally charged illusion of choice in which failure to comply leaves women vulnerable to guilt and blame should refusal result in harm to their child. This tendency of health professionals to fuel women's fears that harm may come to their baby during birth also featured strongly in Szurek's (1997) work. By defining mother and child as 'at risk' and thus requiring technological intervention, it arguably results in the removal of the mother's power and control over her birth (*ibid*).

Maternal passive acceptance

On the rare occasions when women in this study reported contesting the advice they were being given or directly complained about the treatment they were receiving this did not seem to alter the care they received and women ultimately reported 'giving in' to the recommendations. This reflects an asymmetrical power dynamic between patient and health professionals where the mother is clearly in a subordinate position (Jordan 1993). Furthermore, even in incidents of serious care misconduct, women did not protest to staff at the time nor did they follow it up with a complaint at a later date. Most women who were dissatisfied with their care simply dealt with this by removing themselves from the hospital environment at the earliest opportunity after the birth of their baby. This lack of action in itself suggests that perhaps women felt that pursuing the complaint against such an authority would be an insurmountable or fruitless task. Jordan (1993) describes this kind of passivity as a product of the socially constructed belief that the order of the world appears to be a fact of nature, as are the dominant positions within the order which as a result cannot be changed. Moreover, women may be willing to tolerate a certain level of displeasure with some elements of the hospital birthing system in exchange for the safe delivery of a healthy baby, the achievement of which in Western cultures is credited to the staff and not to the mother (Jordan 1993). Within a system where people rely on and trust biomedical knowledge for maternity

care, for most there is no other reasonable or even possible alternative to hospital birth. Therefore, lodging a complaint may be perceived as damaging to the system or a sign of a lack of appreciation towards the members of staff who provided positive elements of care and 'gave' them their newborn. Alternatively, Kitzinger *et al* (2006) suggest that non-complaint of the treatment received is part of a process of 'negative adaptation' meaning that a disappointing experience becomes accepted by the mother as 'good enough' as a way of 'moving on' in order to concentrate on the care of their newborn. However, the longer term effects of women choosing not to complain are that the system remains unchanged and thus unsatisfactory treatment persists in other women's care. Furthermore, this may continue without health professionals being aware that there is, as it appears from the interview data, a widespread problem. Silence is simply assumed to mean satisfaction (Lazarus 1997).

Cascade of interventions

During women's labour accounts it was apparent that once a medical procedure was carried out, this often cascaded into several unexpected interventions. Jordan (1990) argues that this is caused by a bias towards up-scaling the level of technology to deal with difficulties encountered. To use Jordan's (1990) example, in the US, if a woman's contractions slow down after being moved to a delivery table, she is not allowed to resume the previously effective position, but rather a solution is sought by administering drugs that speed up labour or, in the extreme case, a caesarean section is performed. Jordan (1993) states that the ease with which this occurs is related to the culturally specific definition of birth itself. For instance, birth may be perceived as a stressful but normal part of daily life as it is in the Yucatan context; alternatively, birth may already be considered to be a medical procedure, as it is in the US, therefore justifying and constructing the need for medical interventions during the birth (*ibid*). The principle of Jordan's AK framework has been incorporated into Davis-Floyd's (2003) Technocratic Model of Birth, which essentially is, as Jordan concurs, a product of the dominant biomedical and technological paradigm of healthcare that embodies the biases and beliefs of the wider cultural context. Although this model was devised to exemplify the experiences of childbirth in the US where it was originally applied, it also shares many similarities to other Western cultures, including the UK, to which the women in this study belong. The main theme

within this model is the separation of body and mind (a concept derived from the philosophy of Descartes, Bacon and Hobbes) and the treatment of birth as an event divorced from the flow of everyday life. This separation extends into the notion of the body as a machine consisting of inherently defective and unpredictable component parts, 'requiring' medical manipulation of the body to control natural processes, including birth (*ibid*). Davis-Floyd (2003) argues that this concept is supported by early Christian belief that men are superior to women, the male body providing the archetype of the machine. Consequently, the differing reproductive functions of the female body were regarded as inherently abnormal, unpredictable and under the influence of nature, thus requiring management by (scientific) men. Within this Western biomedical view, the emphasis is on the individual patient, rather than on the family or community. 'Problems' are assessed through objective scientific measurements with little attention to less measurable psychological and socio-cultural factors (Helman 2001).

Consequences of birth interventions

The iatrogenic effects of 'necessary' birth interventions were a major feature in a large proportion of the mothers' interviews. Several women reported that the absence of initial skin-to-skin contact was a direct result of earlier medical procedures and in some cases developed into longer periods of mother-infant physical separation and delayed breastfeeding initiation. Kitzinger (1997) argues that physical contact (or lack of it) in the context of birth implicitly conveys strong messages. Therefore, withholding contact between mother and child might be seen as an act of disempowerment to the mother, signalling that she is not in control of the situation. Many of the medical interventions used during the delivery also produced an increased need for the employment of analgesic drugs. These medications were cited as an additional factor in causing separation on a physical level, such as immobilisation due to spinal/epidural but also on an emotional level whereby mother and/or baby's alertness and ability to interact was compromised. In some cases there were obvious circumstances whereby skin-to-skin contact would not be appropriate due to particular medical interventions, such as when a mother was given a GA. However, only two thirds of the mothers in this sample reported having received skin-to-skin contact with their baby. This seems to be a low proportion in light of the research evidence that strongly associates skin-to-skin contact with

breastfeeding success and a range of other physiological benefits for the infant (Christensson *et al* 1995; Righard and Alade 1990; Winberg 2005). Consequently, it may be argued that many medical procedures, including caesarean section deliveries, should not routinely preclude the opportunity for mother and baby to experience skin-to-skin contact and that non-urgent treatment and checks should be delayed or carried out simultaneously. This option, however, was not explored by the mothers and although many expressed that they desired skin-to-skin contact with their newborn, they appeared to automatically accept (just as they had accepted the procedure itself), that their medical circumstances disqualified them from this experience.

Superiority of biomedical technology

Jordan (1993) recognises that within every birth context there are technologies and artefacts deemed to be necessary for the proper management of birth, and to those who are trusted to employ such tools an elevated level of authority is granted. When birth remains in the realms of everyday life the tools required tend to lack specialisation, thus creating a more equal distribution of control between mother and specialist birth attendants. In contrast, medicalised births tend to involve highly specialised equipment, requiring training and expertise, thus dramatically raising the status of the person operating the equipment. The tools themselves can also determine the way in which the labour and birth are managed, for instance, some interventions may restrict movement and require the woman to deliver in a lithotomy position (Davis-Floyd 2003; Jordan 1993). The cascade of interventions highlighted in the interviews was frequently facilitated by the use of routine procedures during labour and birth. This included foetal heart rate monitors, the information generated from which appeared to be intrinsically respected by both mothers and staff as providing indisputable AK on the situation at hand.

During the interviews none of the women seemed to make a connection between the consequences of different interventions generating the requirement for further interference. Again, this is likely to be due to trust held in staff to do only what is necessary to deliver the baby but also related to the fact that most women do not associate the medical procedure with negative repercussions, nor have they been informed of anything other than a positive effect on the progress and outcome of their birth. For instance, the women I interviewed often

expressed relief at being in the hospital to give birth so that members of staff and technology were on hand to intervene. None of the women reported that they wished they had not had the initial intervention because this may have prevented the need for consequential medical interference. Instead diagnostic technologies are believed to provide objective 'truths' relied upon to provide suitable clinical actions. Little thought is given to the potential wider causes of the 'problem', such as the influence of maternal fear on biological systems (Kroeger 2004). Moreover, the fact that objective measurements also require subjective interpretation by health professionals who may differ in opinion is rarely acknowledged (Helman 2001).

Maternal loss of control

The women's accounts confirmed that in cases where interventions were employed the level of control over events diminished, leaving women feeling frightened, anxious and vulnerable. This was particularly evident for women who experienced unforeseen procedures and those women who were giving birth for the first time. These negative emotions were particularly heightened when sudden and rapid changes occurred and the environment appeared chaotic or stressful, leading to occasions when decisions were made without consultation with or explanation to the mother. A possible reason why women's emotional needs were reportedly neglected in the hospital context is that within the biomedical knowledge system birth is often reduced to a biological event and has become divorced from its social context (Davis-Floyd 2003; Helman 2001; Jordan 1993). Moreover, the interviews revealed that women felt that some members of staff were unsympathetic to their needs and paid little attention to the fact that childbirth and the immediate post-natal period is a remarkable, yet daunting event in any woman's life. Ironically, many staff had most likely experienced birth first-hand themselves, suggesting that potentially their indoctrination into the biomedical system and de-sensitisation over time had inadvertently occurred. Certainly this was not a characteristic of all members of staff. There was evidence in the women's accounts that clear efforts had been made by some members of staff to provide more sensitive care by actively engaging women in the clinically centred routines. This reinforces Helman's (2001) argument that although Western biomedical training 'encultures' health professionals into a particular way of thinking, the way in which different professionals practice can vary depending on their clinical role and the wider cultural context.

In cases of deliveries where social and emotional support was given there was strong indication that the negative psychological consequences of medical interventions and loss of control could be counteracted to an extent. For instance, some women recalled accounts of having highly intrusive procedures but felt positive about the birth overall. This was attributed to being given reassurance throughout the procedures, a calm environment, and trust/confidence in the capability of the staff. This observation is similar to Lazarus' (1997) research that revealed women's experiences of giving birth in a medicalised and technologically reliant context were affected by constraints on their ability to make choices and control events. In many cases the demand for control and knowledge varied as did women's desires for the use of technological interventions. However, the level of technology used also had a knock-on effect on how much understanding and control the woman could realistically have, as well as some procedures opening choices to women but invariably closing other possibilities. Moreover, interpretations of control differed between the women, for example control for some women was to minimise interventions and for others control pertained to personal control of emotional outbursts during labour that could potentially be controlled with medication. Nevertheless, regardless of how the birth progressed or what interventions were employed, the women in Lazarus' (1997) research wanted to feel respected and to feel that efforts had been made to include them in the delivery process, much the same as the women in this study.

Hospital birth: a production line

Another perspective on why the women's experiences and participation in the birth of their child have somehow become devalued within the biomedical context is provided by Davis-Floyd (2003). She likens hospital birth to the processes that take place within a production factory: the mother's body is the machine, the baby is the product of the manufacturing process and the health professionals are the skilled technicians, working under semi-flexible timetables to meet production and quality control demands. Consequently, women have become objectified and health practitioners alienate themselves from patients. This has led to pregnancy and birth being dealt with from an outside-in approach where standardised hospital routines take priority, the principles of which are designed around often arbitrary time frames, efficiency and staff convenience, as opposed to patient ease (*ibid*). Dykes' (2006) research of breastfeeding in

hospital also utilises this metaphor and states that the post-natal ward is the end stage of the medical production line. Davis-Floyd (2003) states that typically hospital birth involves overuse of technology and medicine to diagnose, cure and repair 'dysfunction'. This transforms the labouring woman into someone whom members of staff have to work around as opposed to working with, overlooking the need to make an emotional connection with the mother in order to jointly achieve birth. Davis-Floyd (2003) describes that this is ultimately underpinned by the hierarchical, male dominated, organisation of the hospital that leaves women feeling unable to resist interventions, many of which are employed with only short-term medical goals in mind (swift delivery of the baby), with little consideration of the longer term implications on mother-infant health and breastfeeding.

Within the Technocratic Model of Birth, no legitimacy is granted to women's inner knowing of what is required (Davis-Floyd 2003). For example, women may be told by staff when to begin and cease pushing, often determined by a measurement of cervical dilation or foetal heart rate. These measurements override the legitimacy of the mother acting on her body's natural urges and frequently women themselves believe that machines know more about their own bodies than they do. In a sense, phenomena under medical examination only become 'real' when they can be objectively observed and quantified, since only then can they become clinical 'facts' (Helman 2001). Consequently, the electronic foetal monitor becomes the focus of attention, the TV-like screen preoccupying the attention of all participants and superseding the mother's embodied knowledge with scientific information (Jordan 1993; Davis-Floyd 2003). Similar reactions towards other 'visualising' technology, such as ultrasound imagery, was explored by Georges (1997) and has more generally been described by Davis-Floyd (2003) as a cultural phenomenon of 'supervaluation' of machines and technology over nature. Nevertheless, within the interviews there were some indications that staff, on occasions, encouraged women to draw on embodied knowledge, to 'do what your body is telling you', which redirects some of the control back to the woman, providing a sense of empowerment. Even so, despite the suggestions that a certain level of autonomy exists for some mothers, there remained a strong theme of biomedical dominance overall. This was clearly illustrated in the comments made by the women regarding skin-to-skin contact and the initiation of breastfeeding following delivery.

Some women recalled how they had asked permission or needed encouragement from the staff to instigate these early interactions with their newborn, described by Jordan (1993) as medical staff acting as 'gatekeepers'. This was behaviour that the women had not even given a conscious thought to and only came to light through direct questioning during the interviews. When reflecting on their actions these women appeared surprised at how they had reacted and in hindsight the situation had appeared to be illogical or even comical. However, at the time women reported feeling that it was necessary because staff had been so obviously in charge of the delivery that they felt the need to reclaim control. In some cases it is likely that women just simply did not know how to react in this novel situation and so defaulted to conforming to the 'rules' of the unfamiliar hospital environment. Clearly, as already suggested, both the women and staff are so inherently socialised into accepting the hierarchical distribution of power within the hospital, that behaviours are played out unconsciously with each actor responding to the situations in a consensual, rational manner due to the shared ideology (Hendry 1999; Jordan 1993).

Maternal distrust of embodied knowledge

Within the maternal interviews there was little evidence of embodied knowledge having any significant bearing on how labour and birth were managed. Although, for women who had already previously experienced birth, embodied knowledge valuably informed them of what to expect, both physically and mentally, affording them an improved experience from an emotional and psychological standpoint. In direct contrast, however, embodied knowledge appears to move from being overlooked during the birth to being awarded value and status on the post-natal ward (with the exception of cases where mother and/or baby required a significant level of medical intervention). Experienced mothers commented that the post-natal ward staff appeared to expect them to rely on embodied knowledge for infant care-giving and reduced their contact and input with the women to a basic level. For some mothers this was acceptable as they were able to manage their newborn infants without any problems (but even in these cases women often reported feeling forgotten about and were rarely approached by staff). This treatment was a considerable problem for some women who were having difficulties or were anxious about breastfeeding and infant care. Many experienced mothers in

this situation felt reluctant to ask for help; speculatively this might be because they felt embarrassed, worried that asking for help was a sign of weakness as a mother, or felt that attention directed towards them would be at the cost to other women more in need of help. In reality, many experienced mothers discussed requiring both emotional and practical support and looked to staff for reassurance. Once again this demonstrates the level of control that staff have in the hospital context, on one hand they have the power to dominate situations by imposing biomedical knowledge but in the extreme opposite action they exert power when they withhold perceived AK from the mothers. As Jordan (1993) asserts, women are active agents in sustaining and reproducing AK, therefore it is not surprising that in the context of hospital birth and post-natal care women have come to expect, rely on and feel secure, when decisions and reassurance are given by those who possess the 'expert' AK. Therefore, when moving from a tightly controlled birthing situation to having little or no direction on the post-natal ward, women are likely to feel deprived and vulnerable as they are still within the biomedical controlled environment as opposed to a familiar home situation. Furthermore, as the construction of AK is one of consensual beliefs, then the women share the biomedical concept that the maternal body and un-scientific, lay judgement should not be trusted or perhaps should be feared. Consequently, mothers actively tried to discount 'gut feelings' as illustrated by the comment of one mother I interviewed "you read things and go by what you read and you never, ever, ever trust your own instincts" (ID: 1918).

Breastfeeding support and 'top-up' formula feeding

Additional evidence for women's reliance on staff and biomedical knowledge was given during accounts of post-natal ward breastfeeding experiences. For many women expectations of breastfeeding prior to birth (information they mainly gained from biomedical sources) differed significantly from the 'reality' that was evidently exacerbated by difficulties arising from interventions or medications administered during labour and birth. In the circumstances on the post-natal ward where visiting hours are restricted, mothers have no choice but to turn to the staff for help and reassurance on breastfeeding practices. In a large proportion of women's accounts, due to staff being overworked, this support was not adequate and left them feeling out of control and with little confidence that they possessed the ability to fulfil their infant's

needs without assistance. In many of these cases problems may have been solved through empowering the women with one-to-one support, providing correct information regarding the physiological processes of lactation and by offering advice on ways to facilitate successful breastfeeding. However, all too often the administration of formula was unquestionably employed thus providing a quick and easy 'solution' to the perceived immediate problems. As already suggested, such actions may partly be a result of mothers' unrealistic expectations of breastfeeding or a lack of knowledge regarding breastfeeding management in the early post-natal period. However, as before, the underlying rationale appears to be an inherent distrust of the mothers' body to perform, which permeates both maternal and staff belief systems. As a result, the concept of 'top-up' feeds has become embedded as a 'normal', risk-free, necessary intervention that is also conveniently suited to the routine orientated, time managed context of the post-natal ward.

The normalisation of formula feeding and the busy and noisy environment of the post-natal ward were considered by several women to have negatively impacted on their hospital experiences. Women sought to have privacy and calm after the experience of childbirth and spoke of wanting to be roomed-in with other breastfeeding mothers. However, within the post-natal ward context women have no control over any of these aspects of their care as biomedical routines take precedence over mother-infant social needs (Davis-Floyd 2003). This in turn restricts the expression of embodied behaviours and erodes confidence resulting in many women expressing that they felt vulnerable, intimidated and out of place. Again this issue was solved not through complaints to staff but by women discharging themselves at the earliest opportunity in order to return to the security and the familiarity of their home, or to a local MLU which were seen as providing them with a more supportive breastfeeding environment.

Night-time separation

For those women who remained on the post-natal ward for one or more nights there was also the relatively frequent issue of babies being removed from the mothers' care at night-time which was often correlated with reports of staff administering formula feeds during these

times. Davis-Floyd (2003) argues that separate treatment of mother and her newborn child stems from the biomedical opinion that beyond parturition the pair become individual and disconnected beings, with the newborn 'requiring' immediate biomedical and technological intervention and management, frequently leading to unrecognised longer term health effects and disruption of breastfeeding. This outdated practice within the context of this research was likely to have been carried out with the best intentions of staff (there was no specific medical reason given for these infants to have required formula milk) in the belief that it was in the mother's best interests (enabling her to rest following the birth) but also importantly served to restore order to the post-natal ward (Dykes 2006). Evidence has long since shown that the practice undermines breastfeeding and as the mothers' accounts showed, can have detrimental consequences (Kroeger 2004). However, the fact that such practices are still being carried out in defiance of BFI guidelines which the hospital's ward manager encouraged maternity staff to follow, demonstrates that even when direction comes from a perceived AK source, some staff may allow their own perceptions of appropriate maternal care to guide their practice. This resistance to change may stem from fossilised beliefs, legitimised by years of clinical practice, that makes institutional changes difficult to implement.

Impact of cot type

When women discussed their experiences of participating in the NECOT Trial and using their allocated cot type on the post-natal ward it was evident that embodied knowledge influenced their responses. A central theme was that mothers wanted to be as close as possible to their newborns which was not only related to the practical aspects of infant care but strongly associated with emotional/psychological drive considered to be instinctive behaviour following childbirth. Those women allocated a stand-alone cot type complained about the restricted access to their infants and frequently discussed preferring to hold their infants and only opting to use the cots at night-time. In contrast, those who used the side-car cribs valued the ease of access to their baby and many spoke enthusiastically about the empowering experience of being less reliant on staff and felt reassured by constant visual and physical connection with their newborn. It is noteworthy that all of the women (with the exception of two) opted to use the allocated cot type at night-time suggesting that this is overall deemed by mothers and staff

to be the most appropriate place for baby to sleep under 'normal' circumstances. In many interviews, largely those women in the stand-alone cot group, this separation conflicted with their embodied desire to remain close to their child and in some instances created very difficult circumstances for them to breastfeed or to provide night-time care without assistance from staff. Nevertheless, all of the women endeavoured to place their infant in the cot at night-time with none of the women reporting that they had questioned this practice. This may seem remarkable given that for some women using the cots proved difficult and conflicted with a strong desire to remain in contact with their newborn. However, this example reflects Jordan's (1993) argument that AK is persuasive and has the power to override embodied knowledge by intrinsically causing the individual to 'misrecognise' that AK always has the best interests of all parties in mind. In some cases women found it impossible to settle their infant in the assigned cot at night-time and these women reported that they held their infant or placed the baby in the bed, but tried to ensure that they themselves remained awake. This may be interpreted as a compensatory act for going against the 'rules' but also provides evidence that the mothers' beliefs matched the biomedical AK guidelines that discourage bed-sharing on safety grounds. In the light of this evidence it is valid to suggest that stand-alone cots in the post-natal ward context are a barrier to women's ability to act on their embodied knowledge and also contribute to women having a higher level of reliance on staff. Ultimately, this serves to degenerate maternal confidence and may have subsidiary effects on short and long-term breastfeeding success and/or the unintentional introduction of formula milk in the early post-natal period.

Mothers' perceptions and experiences of at-home feeding infant care, wider socio-cultural influences and the impact of the follow-up calls

Mismatched expectations

On leaving the clinical environment women often expressed relief at being free from the pressures of the biomedical routines and welcomed back a sense of control and independence. Nevertheless, all the women then faced a new challenge of integrating the latest family member's care needs into the complexities of individual and family circumstances. During the

interviews the majority of mothers provided information regarding their intended feeding and infant sleeping strategies most of which were parallel with biomedical recommendations but also satisfied needs derived from embodied knowledge. For instance, women planned to room-in due to safety guidelines but also had a personal desire to remain close to their infant. Nevertheless, it was obvious that for the vast majority of women the infant care they provided differed from their stated intentions. This is not to suggest that notions of what qualifies as AK drastically alter as a result of moving away from the clinical environment back to a familiar and a self-regulated routine. It simply appears that decisions to stray from following biomedical guidelines regarded as AK, were due to the fact that they could not be easily incorporated into the women's existing social and domestic contexts. This relates to Browner and Press' (1997) observations of scepticism and ambivalence felt by some women regarding biomedical instructions about the management of their pregnancy, leading to some women incorporating a number of recommendations but ignoring others. Overall, the women in Browner and Press' study admitted to accepting biomedical advice as authoritative. However, for the most part, they chose to accept recommendations that were confirmed by embodied knowledge and experience and rejected advice that contradicted pre-existing beliefs or were difficult to adopt into their lifestyles. Furthermore, in many instances women expressed frustration with the fact that biomedical advice was often offered without sufficient regard for the realities of people's lives. This example serves to demonstrate that biomedical guidelines, although consensually regarded as AK, are not always unchallenged and are still subject to ongoing evaluation within the context of personal circumstances. In some instances the women in this study reported additional family or social pressure also acted as a tipping point in these behaviour changes once back in the home environment. For example, there was lay scepticism surrounding the value of breastfeeding and rejection of the fact that formula has potential harmful effects combined with lay beliefs regarding the positive effects of imposing feeding and sleeping routines. This school of thought offers a competing knowledge system to challenge the dominant AK. Moreover, if competing views originate from trusted sources, such as friends or family members, or concur with previous experiences, they may become the knowledge 'that

counts', forming the basis of which decisions are made and actions are taken. Consequently, women feel able to justify their deviation from biomedical advice in that particular instance.

Compromise in infant care

Predictably, modifying an intended, often carefully considered care plan for their infant was not easy for many women. As a result, changes were often in the form of compromises between competing biomedical recommendations, embodied knowledge and practical limitations of women's lives. The turmoil this caused the women was reflected in their emotional responses. Many women discussed feelings of failure, guilt and anxiety for not doing what they perceived to be the 'best' thing. When changes were self motivated (made without consulting a biomedical authority) many mothers once again seemed compelled to express reasons for their actions during the interview and some even reported reluctance to disclose their behaviour to others, particularly health professionals, for fear of negative judgement as a parent. Jordan (1993) acknowledges that providing justification for behaviour is a normal response in such circumstances. The nature of AK means accountability to a commonly shared view which is often connected to definitions of morality. Alternatively, when alterations to infant care were backed by a medical professional or legitimised by technology, women seemed to effect change with greater confidence and ease as if they had been given permission to deviate from the 'rules'. This was often the case when women were considering stopping breastfeeding and/or introducing formula and sought medical advice. In some cases women were provided with 'evidence' that legitimised their actions, such as a clinical chart showing that their baby's weight was lower than the average, or a health professional's confirmation of insufficient milk. In such circumstances breastfeeding often appears to be blamed for the perceived problems and thus formula is introduced, rather than the behaviour surrounding breastfeeding (i.e. frequency and technique) being identified as an effective modifiable factor, characteristic of a reductionist biomedical perspective (Davis-Floyd 2003; Helman 2001). Furthermore, other problems were also reported to be attributed to breastfeeding leading to the introduction of formula, including frequent night waking, an unsettled baby or excessive crying. Once again this action might have been avoided through behavioural adjustments or more effective education/preparation interventions to help women understand the evolved needs of her infant. These responses to

infant care difficulties can ultimately be attributed to an underlying distrust of the ability of the maternal body to provide sufficient infant nutrition, lack of maternal confidence and a lack of adequate support and knowledge regarding infant feeding and care practices.

Shared sleep

The complicated deliberations faced by mothers were also commonly expressed when discussing bed-sharing. Most women reported that they had never intended to bring their infant into their bed at night-time but found it impossible to avoid. Strong feelings of fear and unease were frequently associated with this practice. However, women's overriding concern was to tend to their infants' physical and emotional needs whilst balancing the practical aspects of night-time care. Significantly, there were special circumstances discussed by the mothers, namely those related to the infant being unwell, in which bed-sharing consensually appears to be the 'right' thing to do. In such instances it appears that embodied knowledge has the power to override contrary AK and bed-sharing transforms instantly from being perceived as a 'risky' behaviour under normal circumstances to a protective infant care strategy. In some instances women were so determined not to bed-share for fear of putting their baby at risk of harm that they devised night-time care approaches to try to prevent the behaviour which included sitting upright in a chair, settee or edge of the bed in an attempt to remain awake. As discussed, these modified circumstances for some mothers posed a potential danger to their infant should the mother unwittingly fall asleep. However, most women appeared to have not recognised these potential risks because their attention was firmly focused on biomedical warnings to avoid bed-sharing. Changes in infant feeding also appear to be tied into this issue in that many women reported introducing formula in an attempt to reduce night waking which was clearly a critical issue for mothers who wanted to avoid bed-sharing. The emotional turmoil surrounding infant care strategies, particularly at night-time, was keenly felt by both the experienced and first time mothers alike. Although, there was some indication that the experienced mothers were able to draw more on their embodied knowledge derived from previous experiences making them more confident in making decisions. Moreover, these women appeared more comfortable revealing and defending their actions to others. This theme was also identified in Browner and Press' (1997) research in which women who had already borne children allowed embodied

knowledge to guide them more frequently on how to resolve problems they encountered, providing a standard against which biomedical recommendations were assessed.

Power of surveillance

As previously discussed in chapter 1, the results of the NECOT Trial produced a noteworthy result in that the proportion of women who were breastfeeding at every time point up to six months, in both arms of the trial, exceeded both the local and national averages (McAndrew *et al* 2012; Newcastle JSNA 2009). The AK framework provides a useful interpretive framework for exploring this pattern of behaviour in relation to the weekly follow-up calls. Despite only a small number of women directly indicating that the calls had caused them to modify their behaviour regarding infant feeding and sleeping, one quarter of women discussed how the calls had influenced their thoughts regarding the care they provided for their infant. Prominently, the majority of these women were first time mothers, again suggesting that biomedical guidelines become the default set of 'rules' for many women when encountering novel situations. Women frequently reported that the calls had an emotional impact on them, such as inducing feelings of guilt, uncertainty and concerns that their behaviour may be risky or 'bad' parenting choices, once again illustrating the moral dimension associated with AK (Jordan 1993). It is clear in these instances that the calls triggered a reminder or reinforcement of pre-existing concepts of AK, which other aspects of the research have indicated as predominantly prone to be aligned with biomedical recommendations. The influence that the calls appear to have had over some women may have stemmed from perceptions that the research was being conducted by the NHS or some form of an extension of the biomedical care they received, despite the research being fully explained prior to enrolment. This may be due both to the fact that initial NECOT Trial recruitment took place within the hospital setting, and that the intervention was implemented by staff on the post-natal ward. Failure of some participants to regard the NECOT Trial research assistants as academically based researchers was also evident during my involvement working on the main trial. My role in contacting participants via telephone to gather missing call data led to some of the women using the conversation to request additional medical advice about their child's health conditions and/or to seek help regarding feeding concerns. This behaviour demonstrates some mothers' failure to recognise a

clear division between their involvement in the NECOT Trial and their clinical care. As a result, there is a strong possibility that the longer breastfeeding duration observed within both groups is a consequence of a Hawthorne effect (McCarney *et al* 2007) due to the attention their behaviour was receiving from a perceived AK source.

Staff views of the NECOT Trial, side-car cribs and their role in breastfeeding support

Authoritative knowledge framework: extending the scope of application

The limited information gathered during interviews with staff requires a cautious approach to discussing the implications of this data. The following section is consequently aimed at opening a discussion regarding the complications and feasibility of employing an AK framework for interpreting staff perspectives. The intention is to build a constructive foundation for future investigations.

Previous research has verified that an AK framework offers an insightful tool for interpreting women's experiences surrounding pregnancy and birth (Davis-Floyd and Sargent 1997; Jordan 1993). This thesis also attempts to demonstrate that the AK framework can be effectively extended to understand women's post-natal experiences. To my knowledge it has not previously been utilised to explore the experiences of post-natal ward staff within the same context, although Davis-Floyd and Davis (1997) have explored the concept of intuition as AK for midwives in relation to home births. I propose that expanding the application of the AK framework to my research has potential to contribute to the existing body of research surrounding post-natal events that may be valuable for formulating health service improvement strategies. Nevertheless, there is a fundamental complication affecting the application of an AK framework to staff interview data in this study. This is the difficulty of defining what is regarded as AK and what is management authority or indeed if these factors are considered as one and the same. For instance, as already acknowledged, both patients and staff are expected to conform to the rules of the hospital environment, however, it cannot be assumed that the catalysts leading to conformity are the same within each group.

Consequently, before utilising the AK framework for interpreting staff information, I must consider the underlying mechanisms that trigger behaviours and attitudes.

Authoritative knowledge or conforming to rules

In the context of this research the maternal interviews provided a clear narrative that, either intentionally or unconsciously, women behaved in accordance with the hospital rules and accepted their subordinate position within the hospital hierarchy. This is primarily because they perceive that the clinical environment provides the most logical and appropriate management of their labour and birth (Davis-Floyd and Sargent 1997; Jordan 1993). For health professionals this perspective is 'encultured' during their training which also serves to socially legitimise their role as a healer, thus raising their social status above that of the patient (Helman 2001). It is also logical to assume that health professionals working in the hospital environment also share this view as they are linked by the same ideology that has elevated biomedical knowledge to hegemonic, AK status. Equally though, it may be argued that staff compliance with the rules of the biomedical system is not only related to AK status but is significantly influenced by management authority. For instance, in order to retain their jobs staff must fall into line, regardless of whether instructions appear to be right or wrong or qualify personally as AK. Due to limitations of the staff interviews within this research, answering such questions is beyond the scope of this project. Therefore, the following discussion is designed to explore the potential influences that AK and management authority may have had in relation to the implementation of the NECOT Trial and the care staff provide on the post-natal ward.

Difficulties engaging staff in the trial

One of the main challenges within the NECOT Trial was engaging staff in the implementation of the project on the post-natal ward. A number of reasons were identified as contributory factors such as communication issues, practical difficulties and most importantly time constraints within the working schedule to implement change. In an already pressured environment this can make change involving additional effort from staff difficult to operationalise (Dykes 2004; Hughes *et al* 2002; Kirkham 1999; Kirkpatrick 1985). However,

underlying these factors there is the potential that the staffs' beliefs and perceptions of the trial were inconsistent with what they regarded as AK and/or procedures were not enforced sufficiently by an apparent legitimate authority. This problem may be associated with a 'culture lag' in which research evidence for improved practice fails to translate to health services (Kroeger 2004). As a result, staff lacked motivation, failed to cooperate fully and generally regarded the trial as a low priority activity within their clinical schedule in which objective measurements typically takes precedence over all other aspects of care (Helman 2001). Alternatively, staff may have recognised that if the trial were to be successful then this would lead to unpopular, permanent alterations in post-natal ward practices. Therefore non-compliance was a means to resist change which is one of the recognised obstacles of implementing organisational change (Bovey and Hede 2001). These perceptions could have stemmed from the NECOT Trial being a collaborative project with an external academic institution that may have resulted in a lack of respect for an outside authority lacking clinical expertise (Kirkpatrick 1985). Nevertheless, even when hospital management exerted greater pressure on staff to engage with the project, there still remained a level of resistance and non-compliance and it was an ongoing struggle to keep staff enthused. Almost all of the staff interviewed described problems associated with implementing the trial, although relatively speaking these issues were not insurmountable nor did the associated workload involve a considerable amount of extra time and effort. Furthermore, inconsistencies revealed between staff and maternal accounts of type of cot received and the time when this was given, suggest that staff were aware of managerial pressure to conform but instead of taking positive action to resolve this problem, falsification of the data was a more attractive option for some. With this in mind, it may be argued that there is a missing element within the NECOT Trial's implementation strategy which caused staff to feel unmotivated to overcome these difficulties. It may be that staff did not believe the project to be worthwhile or it did not fit into their notions of appropriate maternity care (Kirkpatrick 1985). Helman (2001) argues that health professionals are part of the 'folk' world for most of their lives both before and after their clinical training takes place. Consequently, individuals bring with them a specific set of ideas, assumptions, experiences and prejudices which they may, consciously or unconsciously, impose

in the workplace (Helman 2001; Scott *et al* 2003). Moreover, as Jordan (1993) acknowledges, these values play a role in the construction of AK. Therefore, the challenges faced within the project may have been due to unsuccessfully incorporating the concept of the project into the existing AK system which led to tasks being assigned a low priority status amongst the staff from the outset.

Challenges of raising the importance of research

This conjecture then raises the question of how one might successfully insert a project into an existing AK system and how to elevate associated tasks to a high priority activity amongst other competing factors. As Jordan (1993) argues, AK systems are rigid in nature due to the consensual belief of their correctness, therefore, alternative knowledge systems lack legitimacy, posing an obstacle to change. In the preparatory phase of the NECOT Trial the research team identified this challenge of engaging staff with the study and attempted to address it by presenting relevant scientific evidence and background research. As discussed there were impediments associated with delivery of this information via face-to-face presentations although the research team continued to send out periodic newsletters to inform staff of the purpose of the research. However, the team was aware that this method may not have been adequate as there was no way of knowing which members of staff accessed the newsletters. Had the presentations taken place as intended then the team would have been able to see who had been informed and which members of staff still required information. These issues concur with factors previously identified with staff resistance to change, for example, change is seen as not needed or that the current system is adequate, staff feeling they had no input into proposed change, and a desire to challenge authority if notification of change is provided by a second-hand source (Kirkpatrick 1985).

Undoubtedly, the provision of supporting scientific evidence is an important part of the engagement process which staff themselves acknowledged as helpful during the interviews. Nevertheless, this was not sufficient to convince members of staff that implementing the intervention on the post-natal ward should be a priority and, in this case, the critical mass of employees failed to 'buy into' the project (Scott *et al* 2003). A potential clue to how to resolve

this issue emerged during the interviews when staff spoke of whether they would be willing to use the side-car cribs in future, beyond the context of the trial. Notably, in spite of several staff members finding them difficult to work around, the majority stated they were prepared to use them because they recognised that the mothers themselves found them to be beneficial. In this sense the inconvenience of the intervention became overridden by a personal and occupational desire to provide a more client-centred service amongst the structured, clinical routines, characteristic of the nursing profession (Helman 2001). In this context it appears that the staff's concept of AK, 'the knowledge that counts', was generated to a degree from the bottom-up; from the embodied knowledge offered by the mothers and from the direct observations of mother-infant interactions (the construction of embodied knowledge between mother and child) they observed first-hand on the post-natal ward. Moreover, this may also have been one of the reasons why increased staff compliance was seen during the later stages of the study due to staff witnessing an increasing number of mothers using the side-car cribs. Applying the AK framework in this context is therefore potentially an important step in recognising new ways of implementing research projects or improvements within the hospital setting, particularly when existing methods fail to have the anticipated impact.

Prioritisation of clinical routines

There are, however, other significant challenges that emerged during the staff interviews which appear to have a strong influence on whether tasks are determined to be high or low priority. One factor is staff focus on biomedical practices that typically involve specialist apparatus to determine health status of both mother and child, reinforced by the hierarchical structure of the hospital that commonly favours objective, reductionist practice (Helman 2001). Whether staff personally regarded these tasks as a high priority part of the care they provide cannot be commented on here; however, hospital protocol states that these checks are to be carried out periodically and that progress must be documented. As a result, by default, these regulated behaviours then create a sense of importance and urgency leading to other tasks being downgraded or missed out. Speculatively, it would most likely be practices that neither required specialist equipment nor resulted in an output measurement of some type which suffered, such as emotional and breastfeeding support.

Another significant issue involves staff concentrating on tasks that have immediate relevance as opposed to practices that may result in significant longer term benefits for mother and baby. This once again reflects the failure of the biomedical system to take a holistic view of mother-infant care which instead is concerned with separating mother and infant treatment and finding a 'quick fix' to the difficulties (Davis-Floyd 2003; Davis-Floyd and Davis 1997; Helman 2001). Recognition of the positive influence that the side-car cribs had on women's post-natal ward experiences was clearly a motivational factor for staff to use them in future. Nonetheless, as discussed by the ward manager, staff appeared to still remain focused on the immediate benefits of using the side-car cribs and gave little thought to the potential benefits to longer term breastfeeding outcomes. This short sighted view almost certainly places a limit on the level of priority using the side-car cribs can achieve on the post-natal ward and consequently opens up the risk of relegation if other biomedical tasks arise.

This limited view of the benefits of the side-car cribs shared similarities with the breastfeeding support provided by staff on the post-natal ward. In general, it seemed that although breastfeeding guidance was expressed as being vitally important by staff, it was practiced as a secondary element of care that took a backseat to biomedical procedures. Thus, breastfeeding guidance was typically distributed only to those perceived to be in immediate need and/or the breastfeeding problems began to negatively affect the infants' physical well-being. For example, the infant may become dehydrated or may be jaundiced which transforms the issue into a diagnosed medical condition legitimising the need for intervention (Helman 2001). As a result, the introduction of formula may be prescribed as a speedy, measurable solution to the immediate problem. This once again reflects the biomedical perspective favouring the treatment of mothers and infants as separate entities and the concentration on correction of dysfunction in the short-term as opposed to protecting future health (Davis-Floyd 2003). Although it must be acknowledged that the treatment provided by nursing staff may not always concur with what they personally believed to be the right course of action, they may simply be following clinical procedures.

Inadequate attention to breastfeeding support

As a result of staff providing breastfeeding support only on a needs basis, many women reported receiving inadequate breastfeeding support, both in quality and quantity, during their stay. Addressing this issue is complex and has a great deal to do with the immense time pressures and heavy workload faced by staff. Nevertheless, there are useful parallels that can be drawn between the problems encountered during the NECOT Trial and tackling this issue. For instance, in order for staff to prioritise breastfeeding support, the practice needs to be included in routine procedures by managers. Furthermore, it almost certainly requires staff to consider breastfeeding itself as an effective method of feeding regardless of personal experiences (that may adversely affect embodied perceptions) and regard the breastfeeding support they are able to provide as a meaningful activity. For some members of staff it was evident that breastfeeding already featured significantly in what they viewed as essential and correct maternal care, although, regrettably, they still felt powerless to act on their desire to offer this care. This was exposed through the expression of feelings of frustration, anxiety and guilt regarding their inability to be able to offer support for all breastfeeding mothers and not just those facing difficulties. For those staff who did not prioritise breastfeeding support in their daily practice it is logical to assume that implementing a breastfeeding intervention would take an even lower priority on their schedule, given an absence of direction by management. In terms of improving breastfeeding on the post-natal ward this situation seems less than ideal. In one respect Littlewood (1989 cited in Helman 2001: 113) argues that although nursing education takes place within a biomedical framework, nurses are much better placed than physicians to understand and deal with 'medical' issues and to recognise when 'quick fix' treatments are inappropriate or have little long-term patient benefit. Unfortunately, in this context the broader biomedical structures within the hierarchical management of maternity care are overpowering.

Strategies to improve breastfeeding support

This observation therefore suggests that some aspects of post-natal care need to be re-structured in order for improvements in breastfeeding support services to be realised. For instance, appointing a member of staff who is dedicated to breastfeeding support was a popular

suggestion from both staff and mothers to alleviate some of the pressure from the existing maternity team. However, lessons from this approach can be drawn from the problems that emerged during implementing the NECOT Trial in relation to the initial appointment of the nursery nurses. It may be argued that if a dedicated member of staff was employed to assist with breastfeeding, there is a danger that all aspects of breastfeeding support would be deflected to this one person. Consequently, breastfeeding support would no longer be perceived as the responsibility of each member of the team. An intervention of this kind within this context would therefore most likely leave women with a worse or equally inadequate service which would almost certainly be a backwards step in prioritising breastfeeding support in maternity care.

A different strategy would perhaps be to combine managerial changes (top-down approach) with strategies to try to raise staff's sense of individual responsibility (bottom-up approach) for breastfeeding support and practices on the post-natal ward. Evidence that some improvements are required in this area were reflected in behaviours during the NECOT Trial whereby staff frequently left the task of attaching the side-car cribs to other members of staff. This proverbial 'not my job' mentality can be contagious within workplaces and evidence of this was clearly reflected in the number of reported 'missed' participants and in the attitudes displayed during some of the staff interviews (also reported by the mothers themselves). Once more, this mindset appears to exist to a small degree within the context of breastfeeding support on the post-natal ward. Some staff stated that they assumed or hoped that their failure to provide adequate breastfeeding guidance would be rectified by another member of the post-natal ward team or by the community healthcare workers after discharge. Ideally, a smaller ratio of women to each member of post-natal ward staff would help to alleviate some of these problems, although another fundamental part of tackling this problem is to empower staff through delivering appropriate training. The interviews revealed that the level of breastfeeding training provided in this context was inadequate across all levels of staff. Therefore, it is fair to assume that in an environment where breastfeeding is such a low priority in the training agenda, there is a negative effect on how members of staff deliver breastfeeding support to the women.

Given that members of staff themselves recognised the beneficial effect of the side-car cribs for the mothers, a similar feedback strategy may complement staff formal training and management authority to help to strengthen the position of breastfeeding within the existing AK system. For example, if staff were able to access mothers' accounts of their post-natal breastfeeding experiences and the long and short-term affects it had, this may help to legitimise breastfeeding support as a central concern within their busy schedules. This, in effect, would also begin to address the problem of 'culture lag' in the existing system from a bottom-up approach. Similarly, connecting staff with the mothers' experiences may also be useful for addressing the persistent practice of 'top-up' feeding, mother-infant separation and hands-on breastfeeding support in contexts where evidence-based, formal training/information such as the UNICEF Baby Friendly Guidelines, has failed to translate into daily practice. However, it must also be acknowledged that due to the nature of an AK system, some of these practices remain in existence because of the demand (or perceived demand due to lack of objection) from the mothers themselves (Jordan 1993; Lazarus 1997). As a result, staff members are provided with justification for maintaining their current practices which ultimately inhibits systematic change. Needless to say, there may be other strategies that utilise the AK framework which may be useful for tackling these issues but have not been identifiable within this research project. Nonetheless, as this discussion suggests, a holistic approach should be considered within any such project.

Authoritative knowledge in relation to evidence-based medicine

NECOT Trial: a case study of real-world research and the advantages of a mixed methods approach

The nature of this project as a study of a study has revealed a number of issues relating to the difficulties associated with using a RCT research design for examining the effects of an intervention within a real-world setting. Firstly, the staff interviews uncovered a range of problems with the practical elements surrounding the smooth running of the trial. These included disruption in conveying trial information, initial side-car availability, high pressured, stressful working environment, and problems making staff prioritise and take responsibility for

attaching the side-car cribs. None of these factors had been considered as potentially major problems in the planning stages of the NECOT trial, however, issues such as delayed and non-receipt of side-car cribs posed a threat to the outcomes of the study.

The qualitative findings of this research provide a valuable insight into the clinical environment in which the intervention was implemented. Without this contextualising information the extent of the barriers faced by the women within this study would not have been recognised. This is particularly relevant in relation to some of the practices undermining breastfeeding that took place on the post-natal ward, such as, mother-infant separation and formula supplementation. In identifying these issues it perhaps begins to explain why the NECOT Trial results failed to show differences in breastfeeding outcomes between the randomised conditions in contrast to earlier research findings. Moreover, in the absence of follow-up interviews the overwhelming satisfaction of women using the side-car cribs would not have been fully recognised.

Challenging the definition of 'best evidence'

In light of this evidence I feel there are grounds for challenging the criteria for evaluating what is regarded as 'best evidence', the AK for informing public policy and treatment decisions. As previously discussed, within the 'hierarchy of evidence' RCTs are considered to be near the peak of the scale as they produce standardised and quantifiable data, consensually acknowledged from an epidemiological and biomedical point of view to be superior data (Lambert 2009). I feel my results supports Johnson's (1997) argument that RCTs are a valuable research method for evaluating healthcare practices, however, in real-world settings RCTs can be problematic and have limitations. Synergising quantitative and qualitative research methods, as in the case of the NECOT Trial and this follow-up project, has uncovered the complex nature of evaluating healthcare interventions and revealed previously unknown ways in which an intervention can impact and be impacted upon by the environment in which it is being conducted. Johnson's ascertain that just because a treatment is shown to be efficacious in the context of the trial (it *can* work) this is no guarantee that it will be effective (it *will* work), equally, in this context, this argument is relevant in reverse. The main NECOT Trial results

showed that there was no difference in breastfeeding outcomes between the cot type groups, however, an overwhelming number of confounding variables were revealed in the qualitative data. Consequently, if the trial were to be carried out in a different environment, such as a hospital with BFI accreditation, potentially significant results in relation to improved breastfeeding outcomes may have been produced.

The combined findings of the main NECOT Trial and the follow-up data, show that the side-car cribs have potential to enhance post-natal care in more ways than breastfeeding and would be a beneficial addition to the post-natal ward environment for improving overall patient satisfaction. Based only on the findings of the quantitative NECOT data this conclusion would not have been reached, indicating that failing to assimilate qualitative research methods into the hierarchy of 'best evidence' inhibits healthcare reform and is less likely to produce a patient-centred approach to care. Furthermore, as Lambert (2006; 2009) asserts and this project has also shown, qualitative research using healthcare professional narratives, can highlight important issues related to hospital organisational culture which unless tackled, potentially may inhibit attempts to introduce, disseminate and implement 'evidence' into clinical practice.

Chapter summary

This chapter introduces the potential for using an AK framework to examine experiences of UK hospital birth, breastfeeding and infant care practices within the context of a RCT. The accounts pertaining to the women's experiences of labour, birth and early post-natal care share consistencies with Jordan's (1993) description of US hospital births and follow a similar trajectory to Davis-Floyd's (2003) Technocratic Model of Birth. Maternal interviews revealed that the clinical environment had a strong influence over events. This began from the point of entering the hospital when the woman relinquished control over and responsibility for the management of their birth to members of staff. Women also adjusted their actions to match the culturally prescribed set of behaviours understood by all through a shared group ideology. Women's largely unquestionable acceptance and reliance of biomedicine as an AK on the most appropriate way to manage childbirth and infant care highlights the role of women themselves in driving and sustaining notions of AK. Moreover, women's inability to resist biomedical advice

during their stay in hospital shows a strong sense of hierarchical dominance of medical professionals over patients, with many seeking permission and reassurance to act independently. This also indicates that biomedical actions and procedures have the ability to override mothers' embodied knowledge.

Jordan's (1993) work demonstrates that cross-cultural variation only comes to light when comparisons are made. This was revealed in my data by the case of the mother who had previously given birth in France who perceived birth in the UK as a more 'natural' event. Nevertheless, a large proportion of mothers' accounts demonstrated that administration of medications and technological intervention were commonplace and often cascaded into several unexpected interventions. Jordan (1993) states that the ease with which this occurs is related to the culturally specific definition of birth itself. The hegemonic status of the Western biomedical and technological paradigm is therefore reflective of the biases and beliefs of the wider socio-cultural context. Davis-Floyd (2003) asserts that these ideas have their roots in male superiority and in notions of the female body as an inherently unpredictable and defective machine requiring scientific management. The iatrogenic consequences of 'necessary' birth interventions and practices on the post-natal ward were a major feature in a large proportion of the mothers' interviews. This draws attention to the mismatch of clinical routines with mother-infant evolved expectations, many of which had detrimental effects on breastfeeding.

The influence of AK was notable in women's accounts of at-home infant care, however, the mismatch between advice and the 'reality' caused many women to modify their actions. Some women, particularly experienced mothers, demonstrated that they began to act on their embodied knowledge as they found that it was the only effective way to manage infant care, particularly at night-time. Conversely, others maintained the distrust of their instincts which led to the employment of other strategies, some of which posed potential risks to the infant's safety. The powerful influence of perceived AK surveillance was also demonstrated by women's reluctance to discuss behaviours such as bed-sharing with health professionals and was also shown clearly in the responses that women gave regarding the impact of the weekly follow-up calls.

Extending the application of the AK framework to analyse staff experiences on the post-natal ward in this study is restricted. This is due to the difficulty of defining what is regarded as AK and what is management authority or indeed if these factors are considered as one and the same. Nevertheless, it is logical to assume that health professionals working in the hospital environment, to an extent, also share the mothers' perceptions of AK as they are linked by the same ideology that has elevated biomedical knowledge to hegemonic status. Consequently, the problems associated with engaging staff with the trial may have been related to the issue that staff did not perceive that the trial was enforced by a legitimate authority and/or the intervention was low priority in relation to clinical routines. Therefore, the challenges faced within the project may have been due to unsuccessfully incorporating the concept of the research into the existing AK system.

Consequently, this raises the issue of how to insert research into an existing AK system and how to elevate associated tasks to a high priority activity amongst other competing factors. The evidence suggests that many of the tactics used by the NECOT Trial research team and managerial staff had little impact. In this context it appears that the staff's concept of AK, 'the knowledge that counts', was generated to a degree from the bottom-up; from the embodied knowledge offered by the mothers and from the direct observations of mother-infant interactions (the construction of embodied knowledge between mother and child) they observed first-hand on the post-natal ward. Applying the AK framework in this context is therefore potentially an important step in recognising new ways of implementing research projects or improvements within the hospital setting, particularly when existing methods fail to have the anticipated impact.

Similarly, the management of breastfeeding support for mothers suffered from the issue that it was secondary to the clinical procedures and routines of the post-natal ward, particularly those tasks that employed specialist equipment. This once again reflects the failure of the biomedical system to take a holistic view of mother-infant care which instead is concerned with separating mother and infant treatment and finding 'quick fix' resolutions (Davis-Floyd 2003; Davis-Floyd and Davis 1997; Helman 2001). As a result many women reported receiving inadequate

breastfeeding support, both in quality and quantity, during their stay. Addressing this issue is complex and has a great deal to do with the immense time pressures and heavy workload faced by staff. Nevertheless, even when staff expressed that breastfeeding was an essential element of correct maternal care, they felt powerless to act on their desire to offer support. This suggests that the broader biomedical structures within the hierarchical management of maternity care are overpowering even to those who work within the system. Addressing these issues is complex and therefore, requires a variety of methods to ensure that health professionals have the ability to 'practice what they preach' in the context of maternal infant care.

The evidence from this research also provides grounds for challenging the criteria for evaluating what is regarded as 'best evidence', the AK for informing public policy and treatment decisions. RCTs are a valuable research method for evaluating healthcare practices, however, in real-world settings they can be problematic and have limitations. Synergising quantitative and qualitative research methods, as in the case of the NECOT Trial and this follow-up project, has uncovered the complex nature of evaluating healthcare interventions and revealed previously unknown ways in which an intervention can impact and be impacted upon by the environment in which it is being conducted. Furthermore, the findings have also demonstrated that issues related to hospital organisational culture must be considered as failing to do so potentially may inhibit attempts to introduce, disseminate and implement 'evidence' into clinical practice.

The final conclusion chapter summarises the overall results and discussion chapters and discusses the limitations of the study and implications of the findings for future policy, practice and research.

Chapter 9: Conclusion

Review of the results and discussion

This thesis has taken a qualitative, bio-social approach to examining breastfeeding experiences of a sub-sample of mothers who took part in a RCT and explores the perspectives of staff involved in their post-natal care. The results have shown that side-car cribs have the potential to facilitate breastfeeding in the early post-partum period and may contribute to overall enhanced hospital experiences for mothers. Maternal responses demonstrated an overwhelming preference for side-car cribs from mothers in both cot type groups. The most important advantage reported by the mothers was the physical and emotional closeness afforded by the side-car cribs. Stand-alone cot usage was associated with difficulties with infant access, increased reliance on staff and delayed responses to infant needs. Each of these factors may present an obstacle to breastfeeding, particularly for mothers experiencing pain or mobility issues following delivery. Problems associated with implementing the NECOT Trial indicated a level of staff resistance to the side-car crib intervention although several staff suggested that they would be willing to overcome difficulties of working around the cots if the mothers found them to be beneficial.

Beyond cot types and infant sleep location other aspects of the hospital environment and practices had a profound effect on women's likelihood of fulfilling their breastfeeding intentions. Technological and medical interventions in birth, absence of skin-to-skin contact, delayed breastfeeding initiation, mother-infant separation, introduction of formula milk, and inadequate care and support from post-natal ward staff all contributed to the cessation of breastfeeding. Many of these factors resulted from a series of interventions during birth, producing a cascade of implications for breastfeeding and infant care. Staff interviews demonstrated that the working environment on the post-natal ward and training in breastfeeding support was insufficient which staff found restricted their ability to offer an effective service. Mothers also discussed a variety of factors that presented further challenges to their planned infant feeding and sleeping arrangements once they returned home. These included: difficulties coping with night-time infant care, managing the care of other children,

perceptions of insufficient milk, returning to paid employment and concerns relating to breastfeeding in the presence of others.

A major theme that emerged from the results and is supported by previous research is that of mismatch: a mismatch between maternal expectations with 'reality' in relation to birth and infant care, a mismatch of medical practices with maternal needs and a mismatch of wider socio-cultural factors with biomedical advice for infant care. All of these issues are primarily underpinned by the hegemonic, authoritative status that biomedical principles have achieved regarding the perceived correct management of maternal-infant health. Viewed from this perspective breastfeeding is largely considered only in terms of having a nutritional function with some acknowledgement of psychological benefits. As a result, breastfeeding has become reduced to a behaviour that takes place between two individuals, considered in isolation from the socio-cultural context and with little regard for evolutionary principles. Application of an AK framework has been useful for helping to understand and interpret breastfeeding and infant care practices in the context of this research. AK is a culturally constructed system that is regarded by all concerned as 'the knowledge that counts' and represents the natural and logical order of things. Therefore, routine conscious and unconscious engagement with the biomedical system contributes to the production and reproduction of AK, thus, resulting in a knowledge system that remains stable. Consequently, an AK theoretical perspective provides an explanation as to why the connection between detrimental health outcomes of some biomedical advice and procedures may go unrecognised and unchallenged. In highlighting the iatrogenic effects of these practices and, in some cases, exposing their arbitrary foundations it may be possible to begin tackling stubbornly low breastfeeding rates in the UK. Moreover, I assert that organisational changes and interventions designed to improve breastfeeding outcomes would benefit from consideration of how they can be successfully assimilated into an existing AK system.

Implications for healthcare policy and practice

Despite the previously discussed limitations (see pg 59-60), adopting the BFI guidelines has been shown to be an effective pathway for inserting evidence into practice to facilitate

breastfeeding and improve maternity services. In drawing attention to the following areas it is my hope that the findings will support the principles of the BFI campaign and be of value to academics, health professionals and policy makers who are striving to improve public health services.

Addressing the culture lag

This research has identified that within the biomedical system patterns of behaviour continue to be practiced long after the major reasons for doing so have disappeared. Moreover, the services and advice provided to women in the hospital have been shown to contradict guidelines that women are exposed to during pregnancy, such as, night-time rooming-in and avoidance of introducing formula milk. This can then lead to women feeling confused and frustrated at the lack of support and at the failure of staff to ‘practice what they preach’. Addressing the culture lag between the evidence and practice is therefore of particular importance in facilitating the achievement of women’s breastfeeding goals. In order to do this effectively the different elements of maternity care need to be considered holistically within the context of their longer term effects. For example, more attention needs to be given to the consequences of various birth interventions on mother-infant physical and emotional interactions in the early post-natal period. These effects should also be conveyed to the mother prior to the intervention being carried out (informed choice) and adequate support should be given to overcome any consequential difficulties. This may also serve to empower the mother and to reduce maternal self blaming and guilt if, in spite of efforts to counteract negative implications, the procedure results in impeding the fulfilment of breastfeeding goals. Moreover, addressing the culture lag will not only be of benefit to overall patient experiences it has the potential to enhance staff feelings of job satisfaction.

Tackling the culture of misinformation

The decline of breastfeeding has meant that certain skills and knowledge have vanished from the Western social context leading to what has been described as a ‘loss of cultural art’. As a result women are seeking AK as they approach breastfeeding, but are met with incorrect, incomplete or contradictory information. This research has also demonstrated that the ‘culture

of misinformation' extends into other areas of maternal-infant care which in turn has an impact upon infant feeding and sleeping behaviour. Women frequently reported that they felt unprepared for what to expect during childbirth and their expectations of breastfeeding and infant care were reported to have been very different to the 'reality' they experienced. Many stated that the biomedical preparation that had been given tended to ignore the potential negative issues which was unhelpful and left women feeling ill-equipped to deal with any challenges that arose. Possibly, the rationale behind the lack of attention to potential adversity may be to avoid generating fear and anxiety or focusing on positive factors, particularly in relation to breastfeeding information, may be considered as a way to encourage women to follow health recommendations. Based on the findings of this research it appears that the 'breast is best' health message is widely accepted and that the more pressing issue lies with addressing why women are consistently failing to accomplish their breastfeeding goals; a trend that is reflected in the relatively high breastfeeding uptake in the UK but a rapid decline in the early weeks and months. Several mothers indicated that the desire to 'protect' women from negative issues was not only unhelpful but had a detrimental emotional effect on the mother such as inducing feelings of anxiety, guilt and failure when proceedings did not match expectations. Instead women stated that they wanted to be given a more realistic picture of events so that they felt prepared and equipped to respond to difficult situations should they arise. Consequently, I assert that tackling the culture of misinformation through biomedical channels, given the AK status it holds, is an ideal starting point to improving women's willingness and ability to achieve the WHO breastfeeding recommendations which in turn may lead to generating greater support of breastfeeding mothers in the public domain.

Challenging authoritative knowledge in the context of research evidence

The nature of this follow-up project has provided a case study example of the process of conducting research in real-world settings. In doing so it has drawn into question the biomedical/epidemiological concept that quantitative research, with strong preference for RCTs, provides 'best evidence' for informing EBM. This notion of AK has led to devaluation of the legitimacy of other approaches, in particular research employing qualitative methods. Combining the main NECOT Trial data with the follow-up data has shown that a mixed methods

approach has several advantages. Qualitative data provided much needed context regarding the setting in which the research takes place. The follow-up data identified numerous factors that presented barriers to breastfeeding that are likely to have off-set any beneficial effect that the side-car crib may have had that was not evident in the results of the main study. Consequently, if the trial were to be repeated in a different setting, more supportive of breastfeeding, then potentially the cots may have shown to facilitate breastfeeding duration. Moreover, the maternal interviews provided evidence that the side-car cribs would be effective in improving patient experiences, the details and extent of which would not have been gleaned from the main trial data. Furthermore, the staff narratives also exposed many of the issues relating to organisation culture that impede healthcare reform. This demonstrates the complex nature of translating 'evidence' into clinical practice, an issue that may be absent from the results of clinical trials that can lead to overly simplistic approaches to behavioural changes in healthcare practices.

Study limitations

Analysis and comparison of the findings with the existing literature suggest that the outcomes of this research exemplify the experiences of many women living within Western, industrialised cultures. Nevertheless, even within the context of the North-East of England there may be a wide variety of experiences. For instance, as suggested in the maternal interviews, women who transferred to MLUs following delivery had very different post-natal experiences to those who remained at the tertiary-level hospital. Moreover, maternal demographic and socio-cultural factors such as ethnicity, nationality, class, age and parity have an impact on perceptions and experiences. Within this study there were pre-existing limitations on who could be approached to take part due to mothers being recruited from an existing pool of NECOT Trial participants. Consequently, priority was given to ensuring participants represented the different cot groups, delivery mode and parity as opposed to focusing on demographic information. Under different circumstances, with fewer limitations and less time constraints, greater consideration of the maternal backgrounds may have been possible.

The results demonstrate that a vast amount of information was successfully gathered from the mothers using a semi-structured interview format. Overall, I feel that this technique worked well as women gave detailed accounts of their experiences which often led to the generation of data that had not previously been considered. However, the main issue that came to light during the process of interview analysis was that although I endeavoured to ask all of the questions on the schedule, not all of the questions were fully answered by each participant. For example, sometimes a question would be asked which the mother began to answer but then perhaps an interruption occurred or the conversation drifted without the original question being revisited. This posed some difficulties when seeking to make comparisons between maternal responses although I do not feel this detracted from the results on the whole. For the staff interviews I found that the semi-structured interview format was beneficial for creating a more relaxed dialogue, contributing to the quality of the data generated. However, as discussed in chapter 3, the depth of information gathered and rapport with staff was impeded by the hospital environment, time restrictions and also potentially by the way in which staff perceived me due to my connection with the main NECOT Trial.

Implications for future research

The design of this study of combining a qualitative component to the quantitative protocol of the NECOT Trial highlights the value of mixed methods research, particularly in the context of a RCT. In carrying out this project I feel that the findings have not only contributed to the interpretation of the NECOT Trial results but have uncovered information that was not accessible within the main study design. This was predominantly in relation to problems and limitations related to conducting a RCT in a real-world setting, data concerning staff perspectives and the impact of the weekly follow-up calls on mothers' thoughts and behaviours. These insights may potentially contribute to the design of future studies, especially research involving a high reliance on people outside of the research team to implement interventions and for projects requiring follow-up data from participants. Furthermore, if in future a similar research examining the impact of side-car cribs was to be repeated, this study underlines the importance of considering the context and environment of the hospital in which the research is to be carried out. Hospitals with BFI accreditation have potentially eliminated

some of the breastfeeding obstacles identified within this research. Consequently, there is a possibility that a side-car crib intervention in a hospital with a successful breastfeeding policy in place may produce results more aligned with Ball *et al*'s (2006) earlier research whereby the side-car cribs were shown to be significantly effective for improving breastfeeding outcomes.

Chapter summary

Based on the experiences of a sub-sample of mothers who participated in the NECOT Trial, this study has shown that side-car cribs have the potential to facilitate breastfeeding in the early post-partum period and may contribute to overall enhanced hospital experiences for mothers, particularly those experiencing pain or mobility issues following delivery. Problems identified during the NECOT Trial and within the staff interviews indicate a level of staff resistance to the side-car crib intervention. Nevertheless, several staff suggested that they would be willing to overcome difficulties of working around the cots if the mothers found them to be beneficial.

As well as contextualising the main NECOT Trial results, the maternal follow-up interviews highlighted a range of factors, both within the hospital and the home environment, which had a profound effect on women's likelihood of fulfilling their breastfeeding intentions. Furthermore, staff interviews revealed significant issues within the working environment that restricted staff's ability to offer an effective service. A major theme that emerged from the results is that of a mismatch between maternal expectations and needs related to many aspects of maternal-infant health compared with the 'reality' of experiences. All of which are primarily underpinned by the hegemonic, authoritative status of biomedical principles. In the context of this research the application of an AK framework has shown to be useful for helping to understand and interpret breastfeeding and infant care practices. This information may be valuable for tackling stubbornly low breastfeeding rates in the UK. Moreover, organisational changes and breastfeeding interventions may also benefit from consideration of how they can be successfully assimilated into an existing AK system, as well as taking action to address the culture lag and the culture of misinformation that surrounds maternal-infant health practices.

Despite the existence of some study limitations, this research promotes the value of mixed methods investigation, particularly in the context of a RCT. It also serves to highlight the

difficulties that can be faced when conducting research in real-world settings and challenges the assumption that quantitative research is a superior method of investigation to inform EBM. The bio-social approach used within both the main NECOT Trial and this study also highlights the advantages of using this perspective within healthcare research in general in order to achieve a more holistic insight into health related behaviours, attitudes and experiences. This information may then contribute to the design of future studies and the improvement of biomedical services for both patients and staff.

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Appendix

Appendix A: maternal invitation letter

Version 1.3 (10/11/09)



NAME

ADDRESS

DATE

Dear **PARTICIPANT NAME**

We would like to invite you to take part in a follow-up project of the North-East Cot Trial. You have been selected from the 1200 women who have been involved in the North-East Cot Trial as at the time of enrolment you kindly indicated that you were happy to be contacted for future involvement in the study. Before you decide if you would like to take part in the research please take the time to read the following information.

What is the purpose of the follow-up project?

A vital part of the North-East Cot Trial involves keeping in touch with mums via the weekly free-phone calls until their baby's are 6 months old. However, these calls cannot tell us everything we need to know for our research. Therefore, we would like to arrange a telephone interview with North-East Cot Trial mums who would be able to spare up to an hour of their time to talk to a researcher. During these follow-up telephone interviews we would like to hear about women's individual experiences of their involvement in the North-East Cot Trial, their stay on the post-natal ward and their experiences during the early months after the birth of their baby.

Who will carry out the research?

Catherine Taylor is an existing member of the NECOT research team and is carrying out the follow-up project as part of a PhD qualification.

What's in it for me?

As a goodwill gesture we would also provide you with a £5 high street gift voucher.

What shall I do now?

Shortly after you receive this letter Catherine will telephone or email you to ask if you would like to take part in this follow-up study. She will be happy to discuss the project further and answer any questions you may have. A face-to-face meeting to discuss the research prior to enrolment may also be arranged on request.

Do I have to take part?

No, it is entirely up to you to decide. If you would like to take part in the project we will ask you to complete the consent form enclosed with this letter and return it to us in the freepost envelope provided.

When and where will the interview take place?

A convenient time will be arranged for Catherine to carry out a telephone interview. Alternatively, if this is not possible, a suitable time for a face-to-face interview at your home may be arranged. All Interviews will be audiotape recorded as this is the best way to gather accurate information. If you specifically do not wish this to happen please feel free to let Catherine know prior to the interview.

What shall I do if I don't hear from the researcher?

There may be occasions where it is difficult to reach participants because we do not have an up-to-date contact telephone number on our records. Therefore, if you are willing to take part in the follow-up project but have not been contacted within two weeks of receiving this letter please contact the North-East Cot Trial office on the telephone or email details below.

How will the research affect me?

Being involved in the follow-up project will in no way affect your involvement in the North-East Cot Trial or your NHS care. All information gained from this project is confidential, stored

securely and we will not release any personal information we collect from this project to anyone or identify you or your baby in any scientific publications.

Remember you do not have to take part in this project if you do not want to, and even if you enrol and then change your mind, you can withdraw at anytime without giving a reason.

If you have any questions or comments about this project feel free to contact us, details below. Additional advice on taking part in this research project is also available from The Newcastle upon Tyne NHS Foundation Trust, Research and Development Department on 0191 2825959 or the Patient Advice and Liaison Service (PALS) on 0800 0320202. Or if you would like independent advice on taking part in research you can contact INVOLVE: website <http://www.invo.org.uk/> or telephone: 02380 651088.

Kind regards,

Catherine Taylor

On behalf of the North-East Cot Trial Research Team

Freepost RRXA-HULZ-HSUG, Parent-Infant Sleep Lab, NECOT, Durham University, Stockton-on-Tees, TS17 6BH.

Telephone: +44 (0)191 334 0351. Email: sleep.lab@dur.ac.uk or c.e.taylor@durham.ac.uk



Appendix B: maternal consent form

Version 1.3 (10/11/09)

Id:



The NECOT Follow-up Project

Consent Form

PLEASE READ THIS FORM CAREFULLY, **INITIAL THE BOXES**, AND PRINT AND SIGN YOUR NAME BELOW IF YOU ARE WILLING TO TAKE PART IN THE PROJECT.

- ☐ I have read the letter of information for volunteers about this project (dated 10/11/09 v 1.3), and have been contacted by *Catherine Taylor* who has fully explained the project to me and has answered my questions.
- ☐ I understand that all information about me will be kept confidential by the project team and will not be released to anyone without my permission.
- ☐ I understand that all the information I provide for the follow-up project will be stored securely at Durham University for up to 3 years until the researcher has completed the PhD qualification.
- ☐ I understand that I will remain anonymous and will not be identified in any written reports.
- ☐ I understand that the information I provided for the main NECOT Trial may be accessed and anonymously included in the written report of the follow-up project.
- ☐ I understand that my NHS care will not be affected in any way by participating in this project.
- ☐ I am willing to be interviewed for the follow-up project by a member of the NECOT research team.
- ☐ I am aware that the interview will be audiotape recorded unless I raise objection.
- ☐ I understand that participating in the follow-up project will be in addition to my involvement in the North-East Cot Trial.
- ☐ I understand I can withdraw from follow-up project at any time, without giving a reason.

Participant's full name, please PRINT

Participant's signature

Date

Researcher's signature

Freepost RRXA-HULZ-HSUG, Parent-Infant Sleep Lab, NECOT, Durham University, Stockton-on-Tees, TS17 6BH.

Telephone: +44 (0)191 334 0351. Email: sleep.lab@dur.ac.uk or c.e.taylor@durham.ac.uk



Appendix C: staff invitation letter

Version 1.3 (10/11/09)



The NECOT Follow-up Project

Post-natal Ward Staff Volunteer Information

What is the purpose of the follow-up project?

As a member of staff at the (participating hospital) involved in post-natal care, you may have been involved in some way in the North-East Cot Trial. The aims North-East Cot Trial are to examine to impact of a different cot type that attaches to the mothers' bed on breastfeeding duration. The findings of the research will be based on information that is given to us by the mothers who took part in the study. However, we would like to invite you to take part in a follow-up research that aims to get feedback from members of post-natal ward staff on the North-East Cot Trial research.

What would I need to do?

Post-natal ward staff who volunteer will take part in a short interview lasting approximately 15 minutes and will be arranged to take place during a normal working shift at a suitable location within the hospital. The interview will be an informal discussion designed to find out how staff feel about using a different type of cot on the ward and their views on being involved in the North-East Cot Trial. We welcome both positive and negative feedback as this will be helpful for future use of the cots on the post-natal ward and for further research projects. Interviews will be audiotape recorded as this is the best way for the researcher to gather accurate information. If you specifically do not wish this to happen during the interview please feel free to let the researcher know.

Who will carry out the research?

Interviews will be carried out by Catherine Taylor an existing member of the North-East Cot Trial research team who is carrying out the follow-up project as part of a PhD qualification.

Will my comments be kept confidential?

All the information gained from this project is confidential, and we will not release any personal information we collect from this project to anyone or identify you in any scientific publications.

Do I have to take part?

You do not have to take part in this project if you do not want to, and even if you enrol and then change your mind, you can withdraw at anytime without giving a reason.

How do I volunteer to take part?

If you would like to be involved in this study or if you have any comments or questions about this project feel free to contact us on the details below.

A face-to-face meeting to discuss the research prior enrolment can also be arranged on request. Additional advice on taking part in this research project is available from The Newcastle upon Tyne NHS Foundation Trust, Research and Development Department on 0191 2825959. Or if you would like independent advice on taking part in research you can contact INVOLVE: website <http://www.invo.org.uk/> or telephone: 02380 651088.

Kind regards,

Catherine Taylor

On behalf of the North-East Cot Trial Research Team

Freepost RRXA-HULZ-HSUG, Parent-Infant Sleep Lab, NECOT, Durham University,
Stockton-on-Tees, TS17 6BH.

Telephone: +44 (0)191 334 0351. Email: sleep.lab@dur.ac.uk or c.e.taylor@durham.ac.uk



Appendix D: staff consent form

Version 1.3 (10/11/09)

Id:



The NECOT Follow-up Project

Consent Form

PLEASE READ THIS FORM CAREFULLY, **INITIAL THE BOXES**, AND PRINT AND SIGN YOUR NAME BELOW IF YOU ARE WILLING TO TAKE PART IN THE PROJECT.

- ☐ I have read the letter of information for volunteers about this project (dated 10/11/09 v 1.3), and have been contacted by *Catherine Taylor* who has fully explained the project to me and has answered my questions.
- ☐ I understand that all information about me will be kept confidential by the project team and will not be released to anyone without my permission.
- ☐ I understand that I will remain anonymous and will not be identified in any written reports.
- ☐ I understand that all the information I provide for the follow-up project will be stored securely at Durham University for up to 3 years until the researcher has completed the PhD qualification.
- ☐ I am willing to be interviewed for the follow-up project by a member of the NECOT research team.
- ☐ I am aware that the interview will be audiotape recorded unless I raise objection.
- ☐ I understand I can withdraw from follow-up project at any time, without giving a reason.

Participant's full name, please PRINT

Participant's signature

Date

Researcher's signature

Freepost RRXA-HULZ-HSUG, Parent-Infant Sleep Lab, NECOT, Durham University, Stockton-on-Tees, TS17 6BH.

Telephone: +44 (0)191 334 0351. Email: sleep.lab@dur.ac.uk or c.e.taylor@durham.ac.uk



Appendix E: maternal interview schedule

Version 1.1 (01/02/09)

QUESTIONS ON PRENATAL INTENTIONS/ FEELINGS

Why did you decide you wanted to b/f? Was this an easy choice or did you feel any pressure from others to breast or bottle feed?

How long did you anticipate b/f for? Explore reasons.

How confident were you that you would be able to b/f? Did you feel anxious about b/f?

Were you b/f yourself as a baby?

Were you able to discuss b/f with other people who have had experiences of b/f? Did you find this information encouraging/discouraging?

Did you attend antenatal classes that discussed b/f and sleep behaviour? If so were they useful? Was the information positive/negative towards these issues? Did the information conflict with own ideas or advice from others?

Had you considered where your baby would sleep at night? Discuss reasons for choices. Ask about plans for the immediate post-natal period and any changes to these plans as the baby got older.

QUESTIONS ON HOSPITAL AND BIRTH EXPERIENCES

How did you feel about your birth experience-was it more or less stressful or complicated than anticipated?

Did you or your baby suffer with any health problems during the birth or during your stay in hospital? (some data may be available from NECOT).

Did you have skin-to-skin contact with your baby after delivery? If so, how soon after delivery and for how long?

How soon after delivery was b/f initiated? Was this aided by nursing staff?

Did you experience any difficulties initiating b/f? If so, what problems arose? How did you deal with them? Was b/f more difficult or easier than expected?

Prior to delivery were you aware that normally takes 3-5 days for breastmilk production to become established? How did you cope with this initial period? Were you given support during this time? When did you feel your milk had come in?

If NECOT data shows introduction of formula during week 1/the time spent in hospital: Was the introduction of formula intended prior to delivery? What were the reasons for using formula? Who suggested/instigated formula feeding?

During your time on the PNW (post-natal ward) was your baby taken away from you for any length of time?

How useful did you find your allocated cot type? Discuss further any positive or negative issues raised?

If SC: did you have to ask for the correct cot type? What was the attitude/response of PNW staff to the request? Did the staff comment on the new cots?

If SC and parity 1+--Usefulness in relation to any normal cot usage in previous hospital births.

During your stay on the PNW were there occasions when you had your baby bed with you whilst you were asleep? If so what were the reasons for this?

What support and advice was given on b/f, bottle feeding and sleeping practices by staff on the PNW? If so did you feel that this was positive (useful, reassuring) or negative (contradictory to own views, critical)?

QUESTIONS ON INFANT FEEDING AND SLEEPING ARRANGEMENTS AT HOME

Where was your baby put to sleep at night in the first week after returning home? Did he/she stay in that place all night? Note: parent may have different bedtimes- explore if baby is being placed in parent's room/bed for a period whilst parents remain downstairs- maybe baby monitors are used?

What changes have occurred in sleeping behaviour and sleep location since returning home i.e. have there been changes in your baby's night-time sleep/wake pattern, has the baby's sleep location, both initial location and other sleep locations during the night, altered i.e. co-sleeping, in a nursery? If yes, for what reason have these changes occurred i.e. health concerns, more convenient? Were these changes encouraged/discouraged by friends and family and/or health professionals?

If exclusively b/f: Do you normally feed your baby from the breast or do you express breastmilk? If expressing milk, when is this usually given and by whom? Where do you feed your baby at night and what are the reasons for this choice?—in which room? In a chair or bed, sitting or lying down?

If combining formula and b/f: What is your typical feeding routine at night? Where do you feed your baby at night and what are the reasons for this choice?—in which room? In a chair or bed, sitting or lying down? If giving breastmilk do you normally feed your baby from the breast or do you express breastmilk? If expressing milk does someone else feed the baby this milk?

If only bottle feeding: What is your typical feeding routine at night? Who feed your baby at night and where does this take place? What are the reasons for this choice?—in which room? In a chair or bed, sitting or lying down?

Have you or your baby suffered with any health problems since returning home? Have these led to any changes in how you feed your baby or where he/she sleeps at night?

From your own experience or knowledge of newborns did you feel that your baby cried more or less than other babies? Did you feel you had more or less sleep than you expected? Do you think that these behaviours are related to how you feed your baby or where your baby sleeps at night? Do you think you have coped as well as you expected with the changes in lifestyle that a newborn brings into day-to-day life?

If began giving formula milk after returning home: what were the reasons for the introduction of formula? Was this an easy or planned decision—explore further,--or did you feel that you didn't really have a choice i.e. felt unable to continue to b/f, returning to work, pressure from others, health concerns.

QUESTIONS ON BEING A PARTICIPANT IN A RCT

What were the reasons why you chose to take part in the NECOT Trial?

How did you feel about being assigned the normal/sidecar cot?

SC- Do you feel that the cot made a difference to your stay on the PNW and your early b/f experiences?

N- Do you feel that if you had been given the SC that your stay on the PNW and early b/f experiences would have been any different?

Do you feel that being part of the trial has had an impact upon the way you think about feeding your baby or where your baby slept at night?

After hearing about the NECOT Trial did you visit the Durham University website for further information or did you read about any previous research on breastfeeding or infant sleep?

Would you be pleased to see the introduction of the SC onto the PNW as standard?

Do you have any further comments you would like to make that may be useful to help to improve the support given to other mum's regarding b/f or issues relating to infant sleep.

Appendix F: staff interview schedule

Version 1.1 (01/02/09)

QUESTIONS ON NECOT TRIAL INFORMATION

How were you told about the trial (verbal, written)?

Did this include information regarding the purpose of the trial and staff roles during the study?

Were you happy with what you were being asked to do as part of the study?

Was the information you received clear?

Were you given regular updates and reminders about the trial?

QUESTIONS ON STAFF ROLES IN TRIAL

Were you happy with only allocating the side-car cribs to only the assigned participants?

Did any situations arise as a result of only some mums getting the side-car cribs?

Did you or any other members of staff encounter problems working with the side-car cribs?

Would you be happy to use the side-car cribs on a regular basis outside of a trial?

How do you feel the trial could have been improved?

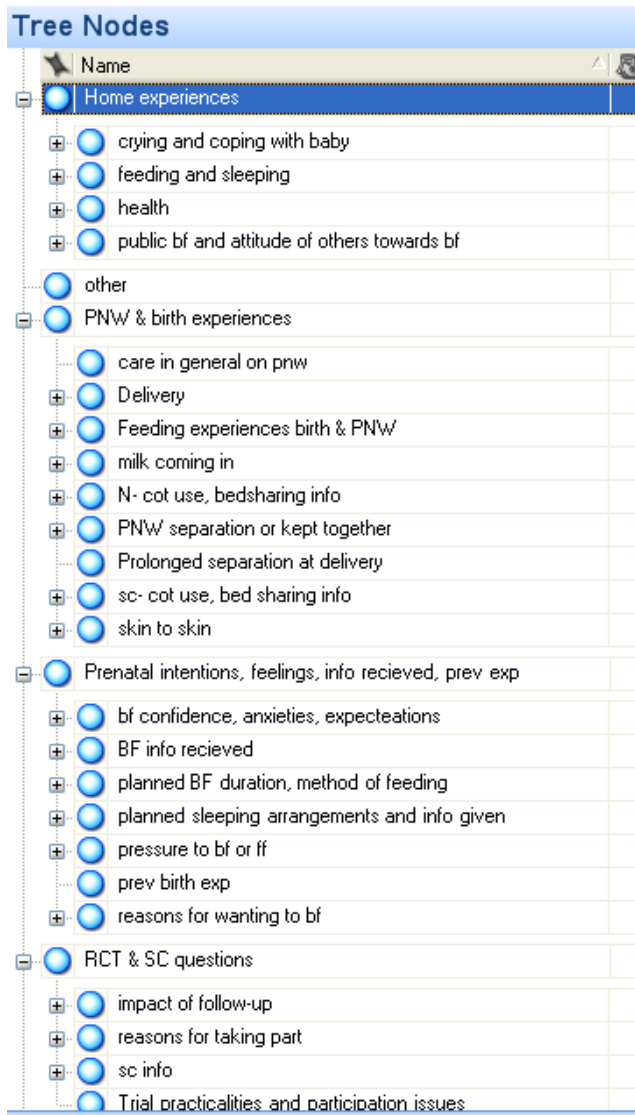
QUESTIONS ON BREASTFEEDING ON THE POST-NATAL WARD

Do you think the side-car cribs helped mums to breastfeed?

Breastfeeding support is one of the many things that staff have to do in the day-to-day running of the ward. Do you feel that there are any other issues that could be addressed that would help the staff to support mums with breastfeeding?

Appendix G: NVivo coding framework

(a) Maternal coding showing level 1 and 2 expansion.



(b) Staff NVivo coding showing level 1

