

An Ethnography Concerning the Supplementation of  
Breastfed Babies

**Michele Cloherty**  
Research Assistant

**Professor Jo Alexander**  
Reader in Midwifery

**Professor Immy Holloway**  
Reader in Health and Community Studies

**Professor Kate Galvin**  
Head of Research, IHCS

April 2003

ISBN: 1-85899-155-2

Institute of Health and Community Studies  
Bournemouth University

## ACKNOWLEDGEMENTS

Without the co-operation of the mothers and healthcare professionals who so willingly gave consent to be observed and interviewed, this work would not have been possible. We owe especial thanks to the lactation consultant within the unit for such generosity with her time and input; the managers for facilitating access; and to Michelle Boucher our lay advisor.

This work was funded by The Department of Health.

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## EXECUTIVE SUMMARY

<b>Background</b>	<p>The health benefits of breastfeeding have been well established. UK national surveys have consistently shown that supplementation in hospital is associated with earlier discontinuation of breastfeeding. A variety of methods are used to give supplements but there is currently no conclusive evidence as to which is best. Cup supplementation has been widely advocated, but there are reports that some babies have difficulty returning to the breast. No studies appear to have explored the decision-making processes involved in supplementation or the views, experiences and beliefs of mothers and healthcare professionals.</p>
<b>Design, methods and data analysis</b>	<p>Ethnographic research involving participant observation and interviews was conducted. Observation took place on day and night shifts and at weekends over nine months in 2002. Categories and themes were generated from the data.</p>
<b>Setting</b>	<p>A maternity unit in the south of England where six different methods of supplementary feeding were in use.</p>
<b>Participants</b>	<p>A total of 30 mothers, 17 midwives, four neonatal nurses, three paediatricians, three senior house officers, and three healthcare assistants were involved with the supplementation of breastfeeding on the postnatal ward and in the newborn unit.</p>
<b>Findings</b>	<p>Throughout this work, the overwhelming dedication of the healthcare professionals to the well being of the mothers and babies in their care was abundantly clear. This was evident not only from the data but also from the willingness of a large number of staff to be observed and interviewed, and the honesty with which they gave their views.</p> <p>Few of the healthcare professionals interviewed, however, indicated that they were aware that supplementation in hospital is associated with earlier discontinuation of breastfeeding and, whilst the vast majority were concerned that supplements should be given by the method least likely to prejudice ultimate breastfeeding success, there was less emphasis placed on preventing supplementation altogether. There appeared to be a tendency to concentrate on supplementation as the solution to the immediate, and sometimes short-term, problem and not always to bear in mind the longer-term problems that it might create.</p> <p>There is currently no definitive evidence as to which is the 'best' method for giving supplementary feeds. This appeared to result in healthcare</p>

professionals advocating a wide variety of methods. The strongest influence on the method that they chose to advise appeared to be the literature concerning the potential for supplementation by bottle to cause nipple-teat confusion and therefore make subsequent breastfeeding difficult. Many concerns related to other methods of supplementation were expressed and, given the lack of clarity as to whether nipple-teat confusion actually exists, there is clearly an urgent need for a randomised controlled trial to investigate the relative efficacy of the various methods. Indeed, the concern to avoid any form of oral activity that might confuse the baby resulted in the passage of oro/naso-gastric tubes on some term babies on the postnatal wards. Parents appear to find these tubes particularly distressing and it seems reasonable to suggest that this practice should cease unless and until there is firm evidence of its long-term value.

Generally mothers were not involved in the decision-making process as to whether supplementary feeding was needed but they were generally asked to give their consent. Some mothers were involved in making the decision about the method of supplementation. Given the current lack of evidence of 'best' method, the information that staff could give was limited. However, the main, and often the only, disadvantage that they seemed to be aware of was nipple-teat confusion. Only a minimal number of mothers appeared to be aware that supplementation could adversely affect their milk supply and longer-term chances of breastfeeding successfully.

Mothers appeared to be well aware of the advantages of breastfeeding but some seemed to have unrealistic expectations about the early days of breastfeeding and did not understand some of the physiological processes involved, such as the role of frequent feeding in stimulating milk production.

The lack of consensus between healthcare professionals as to which method of supplementation would be used for any one particular baby, the differing opinions expressed to the mothers, and the resulting lack of continuity in what was used, was perceived by the mothers as conflicting advice and found to be very unsettling. Guidelines should be drawn up as to which method should be advocated in which situation, and staff should receive training in relation to all those they might be required to use.

Many healthcare professionals went to considerable lengths to support mothers who were tired or distressed to continue breastfeeding not only by providing assistance with positioning but also by explaining the physiological processes involved. They also role modeled and carried out

other 'mothering' activities to settle the baby. In the case of a small number, however, the mother could only remember the healthcare professional suggesting supplementation. Once made, this suggestion proved extremely powerful and had long lasting effects. Some healthcare professionals experienced a conflict between their role of alleviating the immediate distress of the mother and that of promoting and facilitating successful breastfeeding because of its long-term health benefits for both mother and baby.

SHOs considered that they needed, and that they would benefit from, increased theoretical and clinical input concerning breastfeeding. Inter-professional education would appear to offer many benefits.

## INTRODUCTION

### Supplementing breastfed babies

The term supplementation in this report is used to refer to complementing or supplementing breastfeeding by the giving of additional fluids (formula, water, expressed breast milk) using the various supplementary feeding methods available. The health benefits to newborn babies of being breastfed are well established (Howie et al. 1990; Saarinen & Kajosaari 1995). UK national surveys of infant feeding have consistently shown that giving additional fluids to breastfed babies while they are in hospital following birth is associated with earlier discontinuation of breastfeeding (Martin & White 1988; White et al. 1992). In the latest such survey (Hamlyn et al. 2002), 40% of breastfed babies given a bottle in hospital discontinued breastfeeding within two weeks of birth, as opposed to 11% who were not given one. Supplementation is not an uncommon practice, with Hamlyn et al. (2002) reporting 28% of breastfed babies to have been given at least one bottle in hospital.

It has been suggested that pre-term or ill babies nursed in special care baby units who are supplemented by cup are more likely to breastfeed in the longer term than those supplemented by bottle. However, the evidence for this is not strong, appearing to consist of an audit following the introduction of a multi-faceted protocol (Jones 1994) and what might best be described as an action research study (Lang et al. 1994). The recent randomised controlled trial of cup and bottle supplementation for pre-term babies (Mosley et al. 2001) suggested that the method of supplementation did not influence breastfeeding at discharge from hospital but the sample was too small (n=14) to answer the question definitively.

In relation to term babies, there appeared to be only one randomised controlled trial (cup or spoon versus bottle), and this showed no significant difference in the prevalence of breastfeeding between the groups at two, four and six months of age (Schubiger et al. 1997); but, the use of a cup, whatever the baby's gestation, has been widely advocated (Christmas 1995; Wickham 1995; Samuel 1998). Perhaps it is even more relevant that many maternity units in the UK are striving to attain the WHO/UNICEF Baby Friendly Hospital award; the award criteria specifically recommend that supplements should be given by cup rather than by bottle (Division of Child Health & Development 1998). In view of the lack of evidence, a small retrospective case note analysis of 63 term breastfed babies supplemented exclusively by cup or by bottle was carried out (Brown et al. 1999). No significant difference was found in the number of babies breastfed at discharge from midwifery care.



Experience had shown some babies to be difficult to wean off the cup and back to the breast (Lang et al. 1994; Thorley 1997). Recent evidence concerning the physiological instability (of oxygen saturation in particular) that can occur in pre-term babies while cup feeding also gave some cause for concern (Freer 1999). In addition to this, there was anecdotal evidence that mothers find mastering the technique of cup feeding difficult and a source of anxiety. There also appeared to be a lack of evidence as to how the decision to supplement was made.

In light of the above, there was clearly a need for further descriptive and exploratory work.

## Aims of the Current Study

To explore the experience of breastfeeding mothers and healthcare professionals in relation to the supplementation of babies on the postnatal ward and newborn unit, in order to inform policy.

## Objectives

To gain insight into:

- Mothers' experiences, beliefs and expectations regarding this practice in its various forms;
- Healthcare professionals' experiences, beliefs and expectations regarding this practice in its various forms;
- The variety of approaches used (for example bottle, cup, syringe);
- The decision-making process surrounding supplementation.

## METHOD

### Rationale for the methodology

Ethnography (Brewer 2000; Mays & Pope 1995) appeared to be a suitable methodology to inform current practice and the development of further work. Little was known about the supplementation of breastfed babies and the research evidence surrounding the area appeared to be inconclusive. Qualitative research is particularly appropriate when little is known about the topic because the researcher does not start with preconceived ideas (Stern 1994). Hilton (1987) has also recommended the use of ethnography in studying previously unexplored areas. In addition, the individual experiences of mothers and healthcare professionals of the supplementation of breastfed babies could only be captured in their context by using a qualitative approach. The use of qualitative techniques to assess clients' experiences may be considered a more appropriate method of data collection than, for example, surveys (Moore 1996). Victoria et al. (1997), in their breastfeeding and pacifier research (see Appendix A) discussed how the use of an ethnographic approach, in addition to their epidemiological research, revealed important ideas that could not have been assessed through standard questionnaires. The ethnographic analysis revealed an important degree of self-selection of mothers in pacifier use, and early weaning that the epidemiological study could not detect. Qualitative data also offers the potential to collect reliable information from a multitude of perspectives (Popay & Williams 1994).

With ethnography's origins in anthropology, one of its major strengths is its ability to inform culturally specific care (Baillie 1995). The use of the ethnographic approach allowed the researchers to understand the features of routine practice and process because the work involved observing and interacting with healthcare professionals and mothers in their daily lives for an extended period of time. The research findings are therefore highly relevant to the specific culture of healthcare professionals and mothers under study.

A general description of ethnography and some examples of its use within maternity care settings is given in Appendix A.

### Setting and participants

The study took place in a maternity unit in the south of England which has an annual delivery rate of 2,300. Various supplementary methods are used to give supplementary feeds within the unit, including the cup, bottle, syringe, 'finger-feeding', nasogastric and orogastric tubes, and the supplemental nursing system (see Appendix B). In excess of 300 hours of observation were conducted on the postnatal wards and newborn unit

(NBU). Thirty mothers and thirty healthcare professionals were interviewed on the postnatal ward and NBU, over a nine-month period.

## Sample

### **Mothers**

Mothers who had planned to breastfeed exclusively but who were supplementing their babies with formula or expressed breast milk were approached by their midwife and asked if they would be willing to discuss the study with the research assistant. Obtaining consent from the mothers is discussed in the sub-section 'Interview procedure'. The mothers who took part in the study were Caucasian, aged between approximately 16 and 45 years, with occupations ranging from unskilled to professional. The local population is predominantly Caucasian and unfortunately no mothers from other ethnic groups were available for recruitment. Of the mothers interviewed, 12 had normal deliveries, ten had caesareans, three were delivered by ventouse, two were delivered by forceps, and two were delivered by ventouse and forceps. One mother gave birth to twins; the first twin had a normal delivery and the second twin was delivered by forceps. For 18 of the mothers it was their first baby (or babies for the mother of the twins), for nine mothers, their second baby, for two mothers, their third baby, and for one mother, her fifth baby.

### **Healthcare Professionals**

The healthcare professionals who took part in the study included three senior paediatricians, two paediatric SHOs, one obstetric SHO, three nurses (all working on the newborn unit [NBU]), one neonatal nurse practitioner, three healthcare assistants and 17 midwives. The precise grades of participants have not been given in order to protect their anonymity. All healthcare professionals were Caucasian, and aged approximately between 18 and 60 years. Twenty-seven of the healthcare professionals were female, and three were male.

## Observation strategies

In an ethnographic study design, interviews and 'participant' observation were carried out to gather data. The term 'participant' observation has been used because the researcher was actively present in the field, although not involved in the actual process of giving care. Observation on the postnatal ward and the newborn unit was undertaken for the first six weeks of the study, to allow immersion in the field and culture surrounding supplementation, and to understand features of usual practice and processes. This period also enabled staff to become used to the researcher's presence. Posters were also displayed explaining that the work was in progress. Following this period, the observation work continued for seven and a half months during which time formal interviews occurred frequently. Informal interviews or casual

conversations with mothers and healthcare professionals also occurred regularly, and played an important role in the observation work. The observation was recorded as field notes, transcribed, and coded, along with the interview data.

## Interview Procedure

### **Mothers**

Mothers whose babies were thought to need supplementation were offered an information leaflet (Appendix C) about the study by the member of staff who was caring for them. If they were interested in taking part in the study, the researcher answered any questions they had and invited them to sign a consent form at their leisure (see Appendix D). Mothers were interviewed in a private room or by their bedside (with the curtains drawn around their bed space), depending on their preference, with only the researcher and the mother present. All mothers wished to be interviewed on their own. All interviews with mothers took place on either the postnatal ward or the NBU at a time to suit their convenience. On some occasions, mothers were first observed discussing supplementation with a midwife, and/or when supplementation was taking place, and then interviewed later about this experience.

The mothers were informed at the start of the interview that it was of an informal nature. Each interview began with the question *'I understand your baby has had /is to have a supplementary feed. Can you tell me more about this?'* After the mother had answered the initial question, certain areas were discussed for a more focused interview. These included the method/s which were used and by whom, any opportunity to use or choose the method/s, the experience of supplementation, and subsequent effects on breastfeeding. Interviews lasted from 15 to 40 minutes. The mothers were thanked and any questions they had were responded to. Mothers were also offered the opportunity to receive a summary of the final report at a later date. Eight mothers indicated they would like to receive this.

### **Healthcare Professionals**

Introductory sessions were held on the postnatal ward and the NBU to inform healthcare professionals about the study. The researchers explained the details of the study and answered questions. The healthcare professionals were also provided with an information sheet (Appendix E). They were later invited to take part in the study, and given further verbal or written information about it. If they wished to take part, they were asked to sign a consent form (Appendix F).

The healthcare professionals were interviewed in a private room on the postnatal ward or NBU, or in their office within the grounds of the

hospital, with only the participant and the researcher present. Interviews lasted between 20 minutes and one hour. In some instances, healthcare professionals were first observed discussing supplementation with mothers and/or during the supplementation of babies, and then interviewed at a time to suit them. Each interview began with the question *'In what situations would you consider it appropriate to supplement a breastfed baby?'* After the interview, participants were thanked and any questions they had answered.

Interviews with healthcare professionals and mothers were tape recorded and transcribed verbatim, or if the participant preferred, notes were taken by the researcher during the course of the interview (see Appendix G for sample transcriptions). For ethical considerations, see 'Ethical Issues'.

## Analytic Procedure

Analysis of the observation data informed who would be approached for interview, and the interviews also served to guide further observation work. The choice of participants was later guided by the principles of 'theoretical sampling' (Glaser & Strauss 1967). This enabled the researchers to follow up matters that appeared to be of particular importance and relevance to the study. The interviews explained and put into a larger context the researcher's observations. In addition, the informal interviews carried out during the observation work explored participants' thoughts and feelings about supplementation, and established a healthy rapport between participants and the researchers. Between observation and interviews, the researchers would 'step back' from the data, so as to reflect on the possible meaning.

The observation and interviews generated themes and patterns. Each section of the data was considered in detail and transcriptions were reviewed repeatedly to refine the themes and ensure they remained faithful to the data. As the themes and patterns were similar, the data collected from the postnatal wards and the NBU have largely been merged. Reasons for supplementing pre-term, small for dates (SFD) and ill babies are well documented (Riordan & Auerbach 1993; Biancuzzo 1999; Lawrence 1999) and outside the scope of this work.

## Ethical Issues

Prior to the commencement of the study, ethical approval was granted by the relevant Local Research Ethics Committee. Mothers were first approached and given a letter by the midwife caring for them to see if they were interested in talking to the research assistant about taking part in the study. Healthcare professionals and mothers who were approached to take part were provided with written and verbal

information and asked if they would like to take part. Healthcare professionals and mothers were informed that the study would involve observation of the interaction surrounding supplementation and decision-making that they engaged in, and that the interview would involve questions about these processes for clarification. The aims and objectives of the study were explained.

Verbal and written consent from those wishing to take part was obtained. Healthcare professionals and mothers were informed that their participation in the study was voluntary, they were free to withdraw from the study at any time, and confidentiality would be maintained. Mothers were informed that their care would not be affected in any way by the research, and healthcare professionals were reassured that their competence was not in question and their professional decisions would be respected.

Healthcare professionals and mothers were interviewed in a private room. If mothers preferred, they were interviewed by their bedside, with the curtains drawn around their bed space so that they could be close to their babies but still have some privacy.

Before giving their consent to take part, participants were informed that some of their words might be quoted. The interviews were tape-recorded with the permission of the participants, or if they preferred, notes were taken during the course of the interview. Only the research assistant and the grant-holders had access to the full tapes. The names of the participants were separated from the tapes, transcriptions and observation notes, and kept in a locked drawer to which only the research assistant had access. All tapes will be destroyed after the completion of the study. Pseudonyms have been used in the findings section and some further minor modifications made in order to ensure anonymity. For the same reason, and because a number of midwives and healthcare assistants rotated through the NBU, postnatal and labour wards, the work location of the participant at the time of the interview has not been specified. Likewise, the precise grades of all participants have not been given. Local Research Ethics Committee permission was not given to access mothers' notes.

## Methodological Issues

The current study involved 'participant observation' where the research assistant was known to be carrying out research in the setting and was therefore free to ask questions that were related to the research. The research assistant, a psychologist, spent the first six weeks introducing

herself to the setting which also helped build rapport with the healthcare professionals. Because she was not a midwife, role-conflict was not experienced and withdrawal from the setting to write notes did not prove problematic or disruptive to client care. In addition, 'naïve' questions could be asked about the nature of practice in relation to supplementation without it appearing surprising to healthcare professionals. Healthcare professionals did not appear to feel professionally threatened by her presence. However, the research assistant had to learn much about breastfeeding and supplementation in a relatively short space of time.

Because of the potentially stressful nature of discussing a personal topic, great care was taken to plan and conduct the interviews with mothers in an appropriate manner. This planning was not only ethical, but also contributed to the quality and 'truthfulness' of the data gathered. Participants who feel comfortable are more likely to share their true experiences and thoughts. Furthermore, the informal contacts which occurred frequently throughout the observation work enabled the researcher to establish and maintain a healthy rapport.

It is essential to contextualise the research in its social and cultural location. It was restricted to one maternity unit in the south of England, and therefore generalisations can only be made with caution. However, the findings may well have typicality. All the participants in the study were Caucasian, but were of varying ages, social, professional and educational backgrounds. The sample is unlikely to be atypical and therefore the findings may well be applicable to other similar settings. In addition, what has been gained is a depth of understanding in one setting, which is a rich source of ideas for the basis of future work which could gain wider generalisability.

The data from the observation and interviews provided 'within-method' triangulation (Leiningner 1987), and participants' reflections supported and confirmed what was observed. This suggests that the observation depicted an accurate and rich description of the culture, and supported the 'insiders' perspective', which may serve to establish the validity of the research.

## FINDINGS

A number of main themes were identified during the analysis of the interview transcriptions and observation notes. As outlined earlier, observation and interviews were conducted on both the postnatal wards and the NBU, but the harmony in the themes that were generated led to the presentation of the data as a whole.

Analysis revealed that mothers generally considered that midwives and other healthcare professionals 'knew best' and were the experts. This clearly influenced the role mothers played in decision-making. They expressed a range of feelings and thoughts about supplementation and generally had a good understanding of why it was considered to be required. Certain methods of supplementation appeared to cause more distress than others.

Midwives appeared to feel they had a duty to protect the mother from tiredness and distress and tended to focus on short-term relief by supplementation. They also seemed to feel that they had a duty to protect her from any feelings of guilt. This was often in conflict with their role in promoting breastfeeding. Similarly, it was found that SHOs and paediatricians appeared to be primarily concerned with solving the immediate 'medical' problem. Supplementation therefore appeared to be considered acceptable and accessible for both psychosocial and medical indications. It was also evident that a considerable difference of opinion existed amongst healthcare professionals surrounding the use and effectiveness of the methods, and differences in knowledge levels. The following sections will attend to each of these themes in turn.

### Culture of supplementation

Solving the  
'immediate' problem'

It became evident that healthcare professionals considered supplementation to be appropriate for solving the 'immediate' problem, which included psychosocial problems such as the tired or distressed state of the mother, or the immediate medical problem. 'Fixing' the short-term problem appeared to be in conflict with the longer-term health of mother and baby. This theme is revisited throughout this discussion.

When is  
supplementation  
necessary?

Healthcare professionals had differing views about what were appropriate indications for supplementation. Some healthcare professionals, including paediatricians, midwives and nurses, believed that supplementation was only necessary when there was a medical



indication. However, some midwives considered the psychosocial well being of the mother to be an appropriate indication for supplementation. Therefore, supplementation could be viewed as either being 'medically driven' or 'psychosocially driven'.

Of the babies on the postnatal ward about whom the interviews were conducted, or who were observed being supplemented, approximately three quarters were supplemented for medical indications such as prematurity, low birth weight, jaundice or low blood sugar levels. However, one quarter were supplemented because of difficulties related to breastfeeding, such as problems with latching and positioning or because of a need in the mother such as tiredness, distress, or the need for reassurance and 'peace of mind'. Whilst these figures themselves are of little value, they do serve to illustrate the proportion of babies being supplemented for reasons other than 'medical need'.

## The role of the mother

### **The decision to supplement**

Mothers appeared to have little power in the decision to supplement, possibly due to the unfamiliar territory, and also because of their vulnerability after having just recently given birth. They tended not to take part in the decision-making, but generally just acquiesced. This finding is similar to that of Harrison and Cameron-Traub (1994) who carried out an interview study which showed that general hospital patients frequently perceived their required role as co-operation with nurses, and did not want to hinder nursing care by being unco-operative. Mothers seemed comfortable with the relationship they had with the midwives, and assumed that the midwives were acting in the best interests of them and their babies, as the following excerpt from the observation illustrates:

Excerpt 1 from field notes (winter 2002):

*I've noticed that the mothers don't play a central role in the decision to supplement and tend to agree with the midwives' suggestions. However, the midwife always explains clearly why the baby requires supplementation to the mother, and the medical reason behind it. The mother will then agree with the midwife and say 'yes, I agree my baby needs to be supplemented'.*

This view is not uncommon, as Bluff and Holloway (1994) found. Mothers trusted the midwives because they saw them as the experts who 'know best', and therefore unquestioningly accepted their decisions (see 'They know best'). This situation appeared to exist even when the reason for supplementation was psychosocially driven.

### **The decision about the method to use**

Often, a midwife would suggest the best method of supplementation and explain why it might be more appropriate and mothers tended to agree with this decision. Some midwives, however, also considered it important that mothers were provided with the relevant information to enable them to choose the supplementary method for themselves:

*Most women don't really know what methods there are...It should be the mother's choice of the method, but I'd probably suggest a method first...I think if I'm honest I don't actually say we can do it this way, or this way, or this way. (Midwife (10), Q23, L1 & Q24, L1)*

*We've all got our own opinions, and my feeling is at the end of the day, it's down to the mother, you can only give the mother the information you've got and then it's up to her, whether you agree with what she wants or whether you don't agree with what she wants, it's up to her. (Midwife (12), Q21, L2)*

There were, however, a few instances where the mother did actually appear to have taken a role in choosing the method:

*The midwife suggested that I had two choices and these were to use either the syringe or the tube. The midwife suggested she might get confused if we used the syringe, and for this reason we chose the tube. (Mother (14), Q1, L2)*

Mothers did not tend to question the method suggested or used by the midwife, nor would they question any subsequent change in method. Mothers may therefore need to be informed that they can choose the method, particularly if supplementation is required several times. Because mothers felt that 'the midwife knows best', they tended not to question the choice of method. A midwife also shared this view:

*A mother's baby can be cup fed, syringe fed, bottle fed, and the mum wouldn't question the next midwife who uses a different method, simply because 'the midwife knows best'. (Midwife (12), Q23, L1)*

### **Who should give the supplement? Mothers' views**

On most occasions, mothers did not give the supplementary feeds and appeared to feel comfortable with the midwife doing it because 'it was being done properly'. Mothers appeared to believe that the midwives were 'better' than they would have been at using the methods:

*I was offered the choice of whether I wanted to hold the syringe, but I preferred her [the midwife] to do it, as there was only a bit there anyway, so we needed to do it properly. (Mother (11), Q4, L1)*

*I wouldn't want to do it [use the cup] wrong. (Mother (26), Q7, L1)*

Some mothers, however, expressed a wish to give the supplement themselves:

*I did think about asking to do it myself actually. I might ask next time. And also if my husband is here I think he'd like to do it too. (Mother (19), Q8, L1)*

#### **Who should give the supplement? Healthcare professionals' views**

There was also some debate among midwives as to whether mothers should learn how to give the supplementary feeds. Observation revealed that the majority of midwives tended to give the supplementary feeds themselves. However, some midwives who were interviewed considered it important that mothers should be offered the opportunity to give the supplementary feeds, and tried to encourage this:

*I personally like to get them to do it anyway, especially cup feeding and syringe feeding, as it's quite easy, it is quite straight forward, and often you can show them how to do it and they just get on with it. (Midwife (3), Q13, L1)*

*We do encourage parents to do it, in fact I had a mother the other day and I said to her 'I'll show you how to cup feed and you can do it yourself' because this baby was having a problem feeding. Of course, not all mothers want to do it, but we try to encourage parents to either tube feed their babies if they want to... and we do ask mothers to cup feed. (Midwife (13), Q5, L1)*

*I usually give them a demonstration first, for example, a baby who is on phototherapy who may have a few supplementary feeds, I'll show Mum first, then give the Mum the baby and then I'll watch her feed the baby. Some Mums are apprehensive about it. (Midwife (4), Q5, L1)*

There appeared to be some confusion, however, as another midwife thought that mothers were only 'allowed' to supplement using a bottle:

*They don't tube feed, they don't cup feed, they don't syringe feed, although if they're shown I'm sure most women would be capable of doing so. But the only way we let them feed them is by bottle. (Midwife (12), Q7, L1)*

Clearly there is a difference between a situation where supplementation is needed only in the short-term and where it may be needed for a long period. Long-term supplementation may be more likely to occur for babies on the NBU. It is possible that teaching a supplementation technique to a mother whose baby will need it only in the short-term might have adverse consequences. It is no longer considered desirable that breastfeeding mothers should be shown how to make up an artificial feed in case the need for this information becomes a 'self-fulfilling prophecy'. It is possible that similar considerations exist in relation to teaching a mother to give the supplement herself when her baby only needs short-term supplementation as the following quotes emphasise:

*It's not a long-term technique you want to be encouraging mothers to use, because some may think, 'Oh well, I'll do it the quickest way'. I think that by them learning it you have a risk that they may then be encouraged to start using the cup because it may be quicker than trying for that bit longer to breastfeed. (Midwife (7), Q20, L1)*

*We don't teach the mums to use the methods because supplementation tends to be short lived here [the postnatal ward] and you are solving a problem at that particular point. It's not a good idea to teach mums here as it could put the emphasis on an alternative method to breastfeeding. (Midwife (15), Q6, L1)*

## The role of the midwife

### Providing information

The role of the midwife involved providing information to the mother about the reason for supplementation, and the methods by which the supplementary feed could or would be delivered. Nurses and midwives had 24-hour contact with the mothers, and therefore knew the mothers and their individual situations more intimately than the doctors (particularly junior doctors on the postnatal wards) who tended to move swiftly around the wards and had much less contact with them. One midwife highlighted her role in providing information to the mother in order for the mother to make her own decision:

*My feeling is at the end of the day, it's down to the mother, you can only give the mother the information you've got and then it's*

*up to her, whether you agree with what she wants or you don't agree with what she wants, it's up to her. (Midwife (12), Q21, L1)*

Both observation and interviews revealed that midwives generally considered each situation in relation to supplementation as unique. This reflected an awareness of the diverse needs of mothers and babies:

*Obviously every baby is individual and so you have to look at it individually and see what's appropriate. (Midwife (13), Q4, L9)*

*I think the way I found my job is I used to have quite stringent kind of opinions on most things, and I think that sometimes it's not just plain black and white as it seems. (Midwife (3), Q20, L1)*

Excerpt 2 from field notes (winter 2002):

*Several midwives have chatted with me informally over the last week, and have all made the same point; that they see each situation as unique when deciding to supplement, and the situation is an important predictor of what method they are most likely to use.*

### **Responsibility to ensure longer-term breastfeeding success**

Midwives were not directly asked about their perception of their role in relation to supplementation, but two midwives spontaneously mentioned their responsibility for ensuring that the baby could get back to the breast successfully, or initiate breastfeeding, after supplementation and how this influenced their choice in methods. The following quotes illustrate this:

*My ultimate aim is to get this baby breastfeeding...even though I know there's a lot of other things happening and you've got to get food into the baby, I'm thinking I don't want to do it this way, because I want to get the baby to the breast, because whatever problems you have at the beginning, you hope that the baby's going to get to the stage where the baby's going to breastfeed. (Midwife (5), Q14, L1)*

*If we supplement babies by the method of the cup we're doing it for a reason, because we're trying to encourage babies to suck from the breast. (Midwife (13), Q2, L4)*

A minority of midwives also spontaneously expressed the view that it was their responsibility to ensure that all other alternatives had been

considered before deciding to supplement. Supplementation was therefore seen by some healthcare professionals as a 'last resort':

*I always get other advice, as I am pro-breast feeding. If the baby is a healthy term baby it shouldn't need it. If it's a premature baby or the mother is diabetic, well obviously it may be necessary, if there are clinical reasons. Then it is a paediatric issue. I always try to discuss it with others first as I want to make sure it is necessary and we have done all we can first. (Midwife (2), Q4, L1)*

*I try not to supplement babies, obviously unless it's really necessary such as the baby being low birth weight, or jaundiced, and where the mother's milk hasn't come in and the baby desperately needs to have a feed. So I'd always consider whether we had tried the baby on the breast enough times and supported the mother in trying to breastfeed. (Midwife (7), Q1, L1)*

*I'd avoid supplementing breastfed babies on anything at all as much as possible, but at the end of the day, there are extreme circumstances and I think there is not a place for it, but there is that option if necessary. (Midwife (3), Q19, L1)*

It is perhaps surprising that more midwives did not raise these issues and the impression was given that supplementation was frequently viewed as a way to solve an immediate problem without consideration of its possible longer term impact (see 'Supplementing when the mother is tired or distressed').

### **Seeking the mother's consent**

On all occasions that were observed, midwives explained clearly to the mother why supplementation was necessary, then asked the mother if she would agree for her baby to be supplemented. Midwives were generally aware of their role in seeking consent before supplementing. One mother gave the following account:

*The babies were checked and were then immediately given the tubes. They asked our consent first and what formula we would like used with the twins. (Mother (9), Q1, L2)*

However, two mothers interviewed indicated that consent had not been sought prior to supplementation. When one was asked what discussion had taken place in relation to her baby's supplementation she replied:

*Well I didn't really have a choice because as soon as she was born she was taken away, they did all the checks and the paediatrician advised that she would need to feed every three hours and have top-ups. (Mother (13), Q2, L1)*

The other mother (whose baby had been previously tube fed) did not appear to have been informed about her baby being supplemented by cup until after it had happened. The mother was asked how it was decided to give her baby a cup feed over night and responded:

*I didn't know about it until she came back this morning. (Mother (16), Q4, L1)*

In relation to consent, it has been previously shown that it is not uncommon for discrepancies to exist between what healthcare professionals believe that they do and what observation reveals to be the case. Henderson (1984) investigated the decision-making process surrounding artificial rupture of membranes in a study involving 28 women and the midwives caring for them in labour. She found that the midwives thought that they asked for consent but in reality they generally informed the mother of what was going to happen.

One mother in this study also did not appear to realise that her midwife needed to seek her consent before supplementing her baby. When asked if her midwife had sought her consent, the mother replied:

*I don't think they had to but they did ask. (Mother (22), Q22, L1)*

### **Role conflict**

It became very evident, however, that some midwives experienced conflict in their responsibility for the psychological well being of the mother and their role in supporting breastfeeding (see 'Supplementing when the mother is tired or distressed').

### **The role of the paediatrician**

It appeared that paediatricians were predominantly involved when supplementation was required for medical reasons, generally involving pre-term and unwell infants. Even then, they did not consider their role to involve the decision as to which method should be used, and viewed this as the midwives' or nurses' responsibility. Their main concern was to ensure sufficient supplement was given at the right time intervals:

*Really all I'm interested in is ensuring that you can manage the right sort of intervals and blood glucose and so on. (SHO (2), Q14, L2)*

*For the pre-term, unwell babies it's generally going to be a medical decision, because with that group of babies, on the whole there will be doctors or nurse practitioners involved...For the bigger, the term babies, then I don't think it's right for doctors, for the healthy babies, I don't think it's right for doctors to get involved at all, it isn't a medical decision at all...I don't think it's really my place to prescribe methods, it is very much an individual thing, and I think it is something the mother should work with, with the midwife or the health visitor. (Paediatrician (3), Q6, L1 & L6 & Q2, L1)*

Midwives suggested that the advice or recommendations given by doctors often had a greater influence on mothers than those offered by other healthcare professionals. The reason was the high regard in which their expertise and knowledge were held (see 'Conflicting advice').

### 'They know best'

The mothers in this study generally appeared to think that midwives, nurses, and doctors 'knew best' and co-operated happily with them in decisions about supplementation. Midwives and nurses were seen as knowledgeable and skilled in regard to supplementation and breastfeeding matters in general. It was clear that mothers trusted the advice or suggestions they were given because they perceived these healthcare professionals to be the experts and 'gatekeepers' of knowledge and information. The following excerpts from the observation describe this situation:

Excerpt 3 from field notes (winter 2001):

*From first impressions, it seems very much that the control lies in the midwife's hand. No mothers have yet questioned the midwife about the decision to supplement. It seems similar to a consultation with a GP where you feel the GP knows best and because of this you don't tend to question the 'expert'.*

Excerpt 4 from field notes (winter 2001):

*The control appears to lie with the midwife or the paediatrician but not so much with the mother. I've noticed on several occasions now that the midwife will explain clearly what needs to be done, and then she will ask the question 'Is that OK with you?' The mothers I have observed have always agreed with the midwife's decision. It appears that they want what is best for the baby, and they very much believe the midwife knows best. Furthermore, they feel that the midwife wants the best also.*

Similarly, the work of Henderson (1984), as outlined earlier, found that when mothers were asked for their views concerning discussion before a



midwife ruptured their membranes, the majority did not think it was necessary and some indicated that as the professional 'she knew best'. Midwives seemed to be aware of their power in this regard:

Excerpt 5 from field notes (summer 2002):

*Today I was chatting to a midwife who told me that she thought often mothers see the midwife as 'knowing best', and so tend not to question what the midwife is doing.*

Interviews carried out with mothers and healthcare professionals also conveyed this picture:

*I felt OK about her needing to have the feeds [supplementary]. They know what's best for my baby, they know what they're doing and I was happy to let her have them. (Mother (24), Q7, L1)*

*I think if a midwife suggests it, then they [mothers] think it's OK. (Healthcare assistant (1), Q23, L1)*

*The midwife suggested a bottle to me [as the way to give the supplement], and I was quite happy to use it. (Mother (25), Q2, L1)*

The finding that midwives and other health professionals are considered by mothers as 'knowing best' has been previously referred to in the literature. Tuckett et al. (1987) discussed how patients in consultation with medical experts often saw themselves as having a 'competence gap' and therefore expected to take advice on trust, and not question what they were told to do. Similarly, Bluff and Holloway (1994) carried out a qualitative study in which 11 women were interviewed in the maternity unit of a general hospital about their perceptions of midwifery care during labour and childbirth. Grounded theory analysis revealed the core construct to be 'they know best'; that is, midwives were seen as the experts and mothers therefore trusted them. The authors discussed how the belief mothers had in the midwives' expertise influenced the type of relationship they had, and identified a need for a more flexible relationship between women in labour and their midwives.

McCormack (1993) has speculated whether the professionalisation of nurses has led them to think that they know what is best for patients, and consequently, ignore their real needs, believing that they already know what the patient's needs are, which could create a barrier to effective communication. This may, on occasions, also be true of midwives.

The observation revealed that mothers always appeared very happy to follow the advice of midwives. Mothers seemed to want the midwives to take control. This made the mothers feel supported and confident because the midwives were the experts in their eyes and were performing the role that was expected of them. This appeared to give mothers a 'sense of security' because they felt calm and convinced that the best was being done for them and their babies.

A couple of midwives mentioned that they were aware that mothers do view them as the 'experts', but felt that the mothers appreciate the guidance and reassurance that they as healthcare professionals are able to offer. One mother discussed how grateful she was for the 'firm advice' given and did not appreciate being asked to make her own decision:

*The midwife who came and took over was very much of the same opinion [as the previous midwife involved] and I was very impressed. It was just very firm advice, whereas the others were like 'whatever you think'. (Mother (21), Q17, L3)*

In addition, this quote appears to demonstrate the desire for consistent advice. This issue is addressed further in the following sub-section.

## Conflicting advice

It became apparent through both the observation and interviews that mothers were sometimes given conflicting advice. Advice was not always consistent either between or across professional groups. The lack of guidelines as to which method should be used in which situation appeared to be at least partly responsible for this. Within the culture, there were healthcare professionals with different educational backgrounds, experiences and often conflicting opinions. It was therefore not uncommon for mothers to receive conflicting advice:

*Some of these mums...end up seeing four or five different people, with slightly different ways of describing things...I remember hearing about one mum who told an SHO she was having trouble sleeping and getting the baby to the breast and he said 'Oh just put it on the bottle then'. It depends on who's coming to influence. (Paediatrician (1), Q14, L25 & L27)*

Excerpt 7 from field notes (winter 2001):

*I've chatted with a couple of mothers now who have said they have been told one method of supplementation is best by one midwife and then told another one is best by another midwife. I also spoke to a midwife who said it can be difficult as midwives do have a preference for certain methods, and a lack of*

*communication amongst midwives can sometimes lead to mothers receiving conflicting advice.*

Studies have shown inconsistency of advice to be particularly distressing for breastfeeding mothers (Green et al. 1998). It was clear that the mothers in this study also found conflicting advice unsettling:

*I came in determined to breastfeed, but feel each midwife has her own theory, [about supplementation] and this doesn't help. It's just different approaches really, which can have a negative effect. If you're not absolutely sure what you want to do, like me, I don't think it helped me. It's just not as reassuring as it could be. (Mother (21), Q16, L1)*

Excerpt 8 from field notes (winter 2002):

*One mother today was a bit confused. She told me how one midwife had said the syringe didn't cause nipple-confusion, and then another midwife had suggested the cup because she said the syringe could cause nipple-confusion. The mother told me she didn't know what method was the best, and was worried that one of the midwives must be wrong. The mother said in the end her baby was cup fed and syringe fed.*

The conflicting advice may have arisen due to the midwives' differing personal preferences in relation to supplementation methods. This might be considered as one of the downsides of autonomous practice.

One midwife suggested that when mothers receive conflicting advice from healthcare professionals, they are more likely to listen to the doctor's advice, rather than the midwives' or nurses', owing to the assumed greater knowledge and expertise of the doctor (see 'Unease within the culture'). One paediatrician showed an awareness of the problem of conflicting advice within the culture:

*The problem is if paediatricians start to get too specific about how to do it, there's a danger of getting conflicting advice from professionals, and I don't want to undermine [the other healthcare professionals] by saying how they should do it. (Paediatrician (3), Q2, L3)*

## The need for continuity

Another consequence of the autonomous nature of practice was a lack of continuity in the use of supplementary methods. Often the method of supplementation was based on midwives' or nurses' personal choices or preferences. The following examples illustrate this:

*I often find that I cup feed a baby that's been syringe fed. I don't think it matters too much, I think it's down to personal preference. (Midwife (3), Q18, L2)*

*I know that in some baby's notes a baby can have a cup, then it can have the syringe, then a tube, and it can go through the whole thing again, and I think perhaps we should say to mums it's probably better to stick to one method. (Midwife (12) Q21, L1)*

This midwife appeared to consider that mothers were likely to be responsible for the change in method but the data did not support that viewpoint.

Approximately one-fifth of the midwives interviewed indicated that they considered continuity to be important in the decision to use a method. One midwife expressed her thoughts:

*If the baby had been supplemented using something else before I would use that to keep things consistent. (Midwife (6), Q6, L1)*

One midwife discussed how she felt she had to put her own personal preferences aside to 'fit in' with the existing culture:

*I am pro-breastfeeding, but I used to use a teat rather than the cup or syringe. Now I have to go with what this lot do. I can't say 'Oh I like it this way actually' to them. Continuity is important. (Midwife (4), Q3, L6)*

The most widely accepted belief appeared to be that it was not appropriate to use a bottle with breastfed babies. (See 'Healthcare professionals' knowledge of supplementary feeding methods'.)

## Unease within the culture

Some level of disagreement between midwives, nurses and paediatricians became evident, both through observation and interviews. The root of this unease was the midwives' and nurses' perception that junior paediatricians lacked knowledge and expertise in relation to supplementation. The midwives and nurses had considerable expertise but felt themselves to have less influence. A consequence of this was that junior paediatricians were sometimes thought to request supplementation when it was not actually required. This could be termed 'medicalising the normal'. The following excerpt from the observation supports this:

Excerpt 6 from field notes (autumn 2001):

*There appeared to be some conflict today between a midwife and a junior paediatrician. Because the baby was jaundiced, the junior paediatrician wanted the baby to be supplemented. The midwife did not seem happy with this because she felt the baby did not need supplementing because it was day three and a normal physiological process.*

However, of the three SHOs, one expressed an awareness of the expertise of midwives:

*I'm quite aware that midwives fortunately, have a sense of autonomous practice, and are able to do things and then just let us know really, and often they're in a far better position to assess them than we are. (SHO (2), Q21, L1)*

Conversely, one midwife expressed the view that on occasions midwives attempted to 'normalise the abnormal' and did not always recognise the need to supplement for medical reasons:

*I do think sometimes midwives lose the sense that some babies aren't term, healthy infants, they're pre-term babies that have different nutritional needs. I think we still try on the postnatal wards to treat them as normal and perhaps there's a bit of misplaced conflict there...Perhaps if we pushed those babies to breastfeed a bit more regularly, we wouldn't get so low blood sugars...Midwives, and I include myself in this, try to normalise a baby that perhaps isn't normal, or well, so we're trying to push too much, and say 'oh, it's fine, lets put it to the breast, lets breastfeed it', when in fact there's a medical need to give this baby a supplement for some reason. (Midwife (11), Q19, L1 & Q21, L2)*

Clearly it is best when a team relationship exists between doctors and midwives.

It also emerged that midwives and nurses believed that the paediatricians had different objectives from their own. They felt that the paediatricians' main objective was to get fluid or nutrients into the baby without much concern for the method of delivery, or the effect of this on breastfeeding:

*I wouldn't involve the doctors [in the choice of method of supplementation], because I don't think they've particularly got the expertise in it. (Nurse (1), Q19, L1)*

*Their main concern is that we get the fluid or the calories into the baby...And wouldn't necessarily see why you shouldn't use a bottle, if it needs some food, give it to them...They don't seem too concerned with how it's done. (Midwife (5), Q13, L1 & L6)*

One midwife expressed the view that paediatricians sometimes created problems by the kind of advice that they offered to parents:

*They'll come up with some sweeping statements about feeding that in reality are not true or workable, so that irritates us, as we then have to deal with the mother, when they've gone, because obviously the doctor's word is still quite powerful for parents, and they will often take their advice rather than listen to us. (Midwife (13), Q10, L4)*

There was also a view among midwives and nurses that paediatricians were more likely to use formula milk, which created further unease:

*Quite often, the doctors will suggest having a formula top up, that I think is the biggest conflict and the most difficult one to deal with, because if there's a medical need, there's a medical need. (Midwife (11), Q19, L3)*

*The doctors want the babies to grow, so they're putting in extra calories, yet breast milk is designed to make babies grow in a long-term way, whereas with formula milk, the babies put on the weight...Often that's a conflicting scenario with nurses and doctors. (Midwife (13), Q10, L11)*

Other midwives found it frustrating to have to consult paediatricians regarding supplementation:

*If you're in the ward, and it's 2am in the morning, and you've got a baby with a low blood sugar who won't go to the breast, to have to have some policy where you have to call a paediatrician or liaise with other staff, when you know full well that baby needs feeding. I think it is a bit insulting to midwives. We're meant to be...experts in the norm, and when a breastfed baby needs supplementing it's not quite normal, but we know our stuff, I find that a bit insulting to have to go elsewhere. (Midwife (17), Q36, L1)*

In such circumstances, supplementation could be viewed as 'an intervention', and therefore required medical approval. However, if

supplementation was carried out for 'psychosocial' reasons it did not appear to be seen as 'an intervention' and therefore required no hierarchical approval. Given the association between supplementation and earlier discontinuation of breastfeeding (Martin & White 1988; White et al. 1992; Hamlyn et al. 2002) it might be appropriate to consider supplementation as 'an intervention' in all circumstances.

## Mothers' experience of supplementation

The mothers in this study experienced a range of feelings about supplementation. Some mothers viewed it as a positive experience because it 'settled the baby' whereas others were more distressed because it was not something that they had prepared for. It was clear, however, that mothers were very well informed about why their babies required supplementation, and this appeared to make the experience less distressing (see 'Mothers' knowledge of supplementation and breastfeeding processes').

### 'A necessary action'

In general, mothers considered supplementation to be 'something that had to be done', and that was necessary for the health of their baby. Those mothers whose babies were supplemented for medical reasons went into great detail concerning the reasons for their babies' supplementation when asked about their feelings. This suggests that mothers' feelings about supplementation were related to their knowledge of the reasons for it. Having an understanding of why supplementation is required may play an important role in how mothers cope with the experience, as the following quotes illustrate:

*He had a jaundice test, where they took the blood from his foot...They analysed the blood, checked it on a graph to see the level, and it was way above a certain level, he was very jaundiced. He'd had a previous check for jaundice, which indicated he needed phototherapy, then he had another one, a rebound one, and it had shot right up. He needed double phototherapy...He was very dehydrated...The midwife said he needs a tube, he needs the maximum amount of formula, 95 ml, which he had yesterday every three hours. (Mother (5), Q1, L1)*

*She was a very small baby and below average size and the doctor said she had stopped growing at 37 weeks when I had a scan...As soon as she was born she needed to have milk as she was so small...She needed to have them [supplementary feeds] as she was so small, so I'm alright about it. (Mother (13), Q1, L1 & L5, Q11, L1)*

Some mothers suggested that they had been made aware by midwives and other healthcare professionals that supplementation was a short-term measure, which appeared to make the experience less upsetting and uncertain for them:

*I know the tube was used as she needed to be topped up, and I knew it was for the best, and it's now out. I knew it would only be a temporary measure, I was told this in the NBU. I think also with the cup, she obviously needed to have something and my milk isn't in, so it was something she needed. (Mother (16), Q7, L1).*

The majority of mothers indicated that they had accepted their babies' supplementation as a necessary action, but they would have preferred it if they could have exclusively breastfed, as breastfeeding was something they really wanted and had planned to do:

*I was a bit upset this morning. I would have liked to get straight into breastfeeding but I will persevere...I know it's for her own good. (Mother (8), Q9, L1)*

*Obviously I'd have rather she had breastfed from the beginning but she needed the food because she is so small...Soon enough she'll have more strength and I can breastfeed her then. (Mother (14), Q7, L1)*

*I'd rather he fed from me. I've got mixed feelings as I know he needed to have the supplementary feeds, but I'd rather he fed from me obviously. But as he was slightly jaundiced I understood he had to have it. (Mother of baby having single phototherapy (19), Q13, L2)*

## Settling the baby

Those mothers with babies that had been supplemented for psychosocial reasons frequently referred to the fact that supplementation was helpful to them at the time because it 'settled the baby', and also allowed them to have some rest or a break from breastfeeding. One second-time mother suffering from sore nipples gave the following account:

*It was a one off, it helped him at the time, it helped me, it settled the baby, but it really was a one-off...I am back to breastfeeding, with no difficulties at all. My nipples are not as sore today either. It really helped at the time, and that is why I was fine about it. (Mother (2), Q9, L6 & Q10, L1)*



It seems possible, however, that this supplementary feed may not have assisted this mother in the longer term – despite trying to explore the issue, the interview did not indicate that the underlying cause of her sore nipples had been explored or addressed.

Another first time mother's baby was supplemented on day three with formula at the suggestion of her midwife because her milk had not yet 'come in'. The mother described how she felt:

*I was not too sure at first, because obviously if you can breastfeed, I'd rather not use formula. But then he was very hungry and just wouldn't settle. I am quite happy about it.*

(Mother (4), Q3, L1 & Q7, L1)

In this case, the physiological function of the frequent feeding did not appear to have been explained to the mother. Thus, despite the short-term relief expressed by these mothers, supplementation in both cases may well have been unhelpful in the longer term (see 'Mothers' knowledge of supplementation and breastfeeding processes').

## Out of the ordinary

Often mothers with previous children with whom they had no problems breastfeeding, found supplementation particularly difficult to come to terms with because it was different from their earlier experience. Perhaps such mothers need special support if supplementation is not to shake their confidence in their ability to breastfeed successfully again.

*With my last child I breastfed till she was seven months old with no problems...So all that's happened has been a lot to deal with. (Mother of term baby on double phototherapy and being tube-fed (5), Q2, L10. This mother subsequently gave up breastfeeding.)*

*It is weird as it's different to the others who went straight to breastfeeding. (Mother (23), Q9, L1)*

It is perhaps not surprising that for first time mothers supplementation is something they had not expected or prepared themselves for:

*I think it was a bit of a shock when she needed them because I just wasn't expecting it to be honest. I'm alright now it's sunk in.*

(Mother (24), Q8, L1)

## Mothers' experience of supplementary feeding methods

The women in this study expressed a range of thoughts and feelings about the various methods of supplementation and appeared to find certain methods more distressing than others. Some were considered to be easier and less time consuming to use and others were preferred by some mothers because they considered them to have a more positive impact on subsequent breastfeeding.

### Cup feeding

Fewer mothers used the cup than the syringe. This may be because cup feeding was considered by most of the midwives interviewed to be more difficult than syringe feeding.

A mother who used both the cup and syringe herself to feed her baby described that she found the cup more difficult:

*I couldn't do cup feeding, it was trying to get it in without spilling it...[The syringe feed] seemed to go much better. (Mother (22), Q3, L1 & Q4, L1 & 11)*

This mother's experience of cup feeding is in contrast with Samuel's view (1998), that 'mothers can learn to cup feed quickly and are usually competent after one or two supervised sessions'.

The majority of mothers who were interviewed who had used the cup implied that it could be 'messy'. This view was also expressed by several midwives. One mother whose term baby was cup-fed by a midwife over night gave the following account:

*I don't think he had a lot of it though because his baby-grow was covered in milk the next morning. (Mother (2), Q7, L4)*

Dowling et al. (2002) reported that pre-term infants may 'drool' during cup feeds. The authors investigated the oral mechanisms used by eight pre-term infants (mean gestational age at birth being 30.6 weeks) during 15 cup feeding sessions. It was found that 38.5% of the milk taken from the cup was recovered on the bib, and it was concluded that differentiating between actual intake versus spillage of milk is important for both clinical practice and research protocols. Investigating similar problems in term babies may also be desirable.

Another mother expressed regret about her baby being cup fed and felt it had negatively affected breastfeeding:

*I regretted letting him have the cup feeds. If I'd done my homework better I wouldn't have let him have them...Breastfeeding went slightly backwards after the cup feeds. (Mother (21), Q8, L1 & Q19, L2)*

Lang (1994) acknowledged that some babies show a preference for cup feeding when subsequently offered the breast, and this mother's experience appeared to illustrate this. However, not all midwives (Wickham 1995) agree that this can be the case.

Thorley (1997) referred to the subsequent problems that cup feeding can cause if it is not done correctly. In particular, it appears that if a baby is not held in the correct position, and the milk is poured into the mouth, rather than allowing the baby to sip and control its milk intake, problems may arise when the infant is later put to the breast. Dowling et al. (2002) also reported that cup feeding requires close observation and co-ordination on the part of the feeder.

Clearly, if mothers are given the opportunity to cup feed, it is essential that they use the correct technique and are appropriately supervised. For this, the healthcare professionals involved in their care need to have both the knowledge and skills themselves (see 'Healthcare professionals' knowledge of supplementary feeding methods').

## Syringe feeding

All mothers who were given the opportunity to use the syringe themselves found it easy to use:

*I found the syringe was very easy to use...I didn't find any problems using [it]. (Mother (3), Q5, L9 & Q7, L3)*

*I had no problems with it and she took the milk well from it. (Mother (10), Q5, L1)*

Several mothers were happy for their babies to be syringe fed because they thought it wouldn't interfere with breastfeeding. One mother when asked how she felt about her baby being syringe fed replied:

*OK, as long as it wasn't interfering with breastfeeding. I wouldn't have liked to bottle feed him. (Mother (15), Q8, L1)*

Unfortunately this mother's confidence was not entirely justified as there is currently no evidence about the effect of supplementation by syringe on the duration of breastfeeding.

## Bottle supplementation

Mothers expressed contrasting views about supplementation by bottle. Approximately one-quarter of mothers interviewed felt that feeding by bottle ensured that their baby would get the feed, and considered it important that they had accurate knowledge of the amount of milk the baby had taken. The mothers who expressed this view were all second or third time mothers and did not convey any concern about the effect bottle-feeding might have on breastfeeding. Instead, they regarded bottle-feeding as a convenient and easy solution when having difficulties with breastfeeding, or when in need of some rest.

One mother described the following situation when her baby was 17 hours old:

*I was concerned he hadn't had enough milk from me, so I asked if he could have a bottle. I didn't succeed in breastfeeding my last two, and as I hadn't breastfed before it didn't seem normal he still seemed hungry, so he had 20ml of formula by bottle. If you can't do it I think sod it, you've tried your best, you know that they'll get fed by the bottle... He had the bottle to set my mind at rest. He's had a feed since the bottle. (Mother (7), Q1, L6, Q2, L4, Q4, L1)*

Clearly this quote raises concerns as to whether the physiology of breastfeeding had been understood (see 'Mothers' knowledge of supplementation and breastfeeding processes').

Approximately one quarter of mothers whose babies were not supplemented by this method spontaneously expressed negative feelings towards supplementing by bottle and believed it could cause 'nipple-teat' confusion (see 'Mothers' knowledge of supplementation and breastfeeding processes').

## Nasogastric and orogastric tube feeding

Approximately half the mothers on the postnatal ward who had their babies supplemented by nasogastric tube spontaneously indicated that they found this to be a particularly upsetting experience. Mothers were very sensitive to how the tubes looked while fixed onto their babies. The following quotes from mothers on the postnatal ward illustrate this:

*I'll be much happier once the tubes have been taken out. It's horrible having these tubes in them. You know that it's doing them good but it's not nice to see tubes down their noses...It is an invasive treatment, you don't want to see it. (Mother of growth retarded twins (9), Q6, L3 & L9)*

*I was a bit upset this morning, I would have liked to get straight into breastfeeding, but I will persevere. It's not nice seeing the tube in her nose, but I know it's for her own good. (Mother of baby born weighing 4lbs 1oz (8), Q9, L1)*

One mother, who had previously breastfed for seven months, appeared to have lost all her confidence in breastfeeding after her term baby was fitted with a nasogastric tube. The baby had been born by elective caesarean section and was having phototherapy.

*You see, you don't know how much they're getting when you're breastfeeding...I'll be offering him a bottle tonight, I want him to have a bottle... I'd much prefer him to have the bottle now. I mean once you've seen your baby wired up like that [meaning the nasogastric tube], you want to know exactly how much milk he's having...The thing is with the bottle is you know exactly how much they're getting. Everything that has happened to him means I have different objectives. When a baby needs fluid you want to make sure that you are getting the food down. I mean he has been on and off the breast but I just don't know how much food he's getting do I?...I now have overriding principles, and that is getting moisture and fluids into him. He needs fluids, and a big concern is to make sure he gets it, in particular I want to know how much. I have been reassured by the midwife, but I just don't want to take the risk. The consequences are too dramatic. (Mother (5) Q1, L13 & L20, Q2, L1 & L5, Q5, L4 & L7 & L10 – this mother subsequently stopped breastfeeding completely.)*

Another mother's baby was moved from the NBU to the postnatal ward and she highlighted how both she and her partner had difficulties coping with their baby still being fed by tube on the postnatal ward:

*I didn't mind over in the NBU, but we both found it quite stressful over here because you don't expect it over here on the postnatal ward. (Mother (10), Q11, L1)*

Other mothers on the postnatal ward highlighted their anxiety about tubes being inserted or removed in front of them:

*They fitted it away, not in my sight, as I didn't want to watch it being done, they described what they'd do, and I just didn't want to watch as I think I'd get quite queasy. (Mother (11), Q5, L1)*

*It was traumatic when a student [midwife] was trying to fit a tube and there was blood coming out of twin one's nose. When they had to remove the tube again, they asked me if I'd prefer if they took the twins away and I said yes, I couldn't bear to watch it again to be honest. (Mother of growth retarded twins (9), Q6, L11)*

## The supplemental nursing system

This method of supplementation was not used frequently and unfortunately it only proved possible to interview one mother who had used it. She was the first-time mother of a term baby with an umbilical infection and mild jaundice. A simplified version of the device was used (see Appendix B).

*I found it worked very well...He took 15-20mls milk, and also a little bit from myself, and the antibodies and the colostrum as well as the formula... I'd say it was a very positive experience... I know there was a bit of fiddling about a bit though. And as I said it's good as he also got a little bit of milk from me. (Mother (18), Q8, L1 & Q13, L5 & L7)*

The mother was also observed using the device:

Excerpt 9 from field notes (spring 2002):

*The mother was particularly anxious as she had sore nipples and was crying as she'd been trying to get the baby to breastfeed, but was in a lot of pain. She tried to use the device in one position first but was still sore and then the midwife suggested that she changed position. This did the trick, and her baby was sucking through the tube, and also latched onto the mother's breast. It seemed to go very well for her. The mother looked relieved and really happy it had worked.*

As also reported by Biancuzzo (1999) the mother mentioned that she found the device somewhat 'fiddly' to use.

## Finger feeding

Two out of the three mothers whose babies had been supplemented using the finger feeding method described a positive experience that worked well.

One mother discussed the impact finger feeding had on breastfeeding after a midwife had finger fed her baby:

*It went very well, I was quite impressed with the technique, it did what the midwife said it would do...The finger feed did teach*

*him to suck, and he latched on the breast very well afterwards...It's there for a purpose, rather than just a top up, it actually did something towards helping breastfeeding. (Mother (21), Q5, L1 & Q11, L1 & Q19, L1)*

This mother's baby was also cup fed on two occasions, and the baby breastfed much better after the finger feed than he had done following the cup feeds. It is difficult to know however whether this was primarily the result of the finger feeding or perhaps due to some other factor such as the passage of time.

Similarly, Kurokawa (1994) described her personal experience of finger feeding a premature baby. The author discussed how the baby had previously been cup fed which proved to be unsuccessful. Finger feeding was then employed, which appeared to teach the baby to suck, because it was rewarded with every suck, and after only a few feeds, the baby began to breastfeed successfully.

However, one mother whose baby was finger fed by a midwife did not report any benefits and considered that it was a 'messy' and difficult technique to use:

*The finger feed was rather complicated and messy trying to do it all at once. She [her baby] took a while to get used to it. (Mother (28), Q6, L1)*

## Healthcare professionals' experiences of supplementation

Healthcare professionals were asked about their experiences and attitudes towards the different methods of supplementation. Interestingly, it was considered that term and pre-term babies were seen to respond differently to certain methods of supplementation. The concept of 'care-giver-centred' as opposed to 'infant-centred' advantages also arose.

### Cup feeding

When healthcare professionals described their experiences of cup feeding they often mentioned the extent of control it gave the baby. They also described how cup feeding could be 'messy' due to the spillage of milk that often occurred, and felt that it was more time consuming than other methods.

#### **Baby's control of rate**

Two-thirds of midwives interviewed stated that the cup was their preferred method because they perceived the babies to be able to control

the rate at which they fed. Frequently, midwives who preferred the cup compared this method to the syringe, which they viewed as allowing the baby less control during feeding as the following example illustrates:

*The best method is the cup because the baby controls the milk, and laps it, and the baby decides when to stop or pause for a breather; whereas with the syringe the midwife is in control, not the baby, and so you have to watch for when the baby stops sucking. The baby will be sick if too much milk is taken. The baby can control the rate at which he feeds using the cup. The syringe is in your control. (Midwife (1), Q8, L1)*

The risk of a baby choking during a syringe feed was also expressed by several midwives, but only one midwife mentioned this risk with the cup:

*You actually have to do it sitting upright and then tilt its head back to feed the baby properly, and avoid the baby choking on the milk. (Midwife (7) Q18, L2)*

There does not appear to be any empirical evidence as to the relative safety of the cup and syringe and this needs further investigation (see 'Syringe feeding' and 'Healthcare professionals' knowledge of supplementary feeding methods').

The view that cup feeding allows the infant to control the rate at which it feeds has been previously referred to in the literature by Biancuzzo (1999) and Wilson-Clay and Hoover (1999), who discussed that cup feeding allows infants to rest whenever they wish. Samuel (1998) also referred to the control a baby has during a cup feed, and suggested that because of this the cup is safer to use than the syringe. However, Lang et al. (1994) cautioned that the infant only has control during cup feeding if the cup is tilted so that the milk is at the infant's lips, and not poured into the mouth.

#### **Time consuming**

A number of healthcare professionals suggested that cup feeding can be rather time consuming:

*The cup just takes so long and you've got a full ward, you've got other feeds to do, you've got a hundred and one things to do, I can't be kind of messing around with a cup...I hate the cup. (Midwife (17), Q10, L1, Q3, L1)*



*I've seen people try and it can be time consuming, I think it can be difficult. (Paediatrician (1), Q5, L1)*

*The cup takes more time. The syringe is easier to use and quicker really. (Midwife (6), Q8, L1)*

However, other midwives mentioned that the cup could be filled with a larger volume of milk, whereas a syringe may need to be filled up several times (or is more suitable when only a small volume is to be given):

*The cup can be filled with more milk and is better in that respect. (Midwife (1), Q9, L2)*

### **Spillage of milk**

Several healthcare professionals commented that the cup can be messy to use, and therefore it was difficult to determine exactly how much milk the baby had consumed. It was also highlighted that some babies encounter difficulties with the cup feeding technique:

*Some babies just don't have a good cup feeding technique... They spit it out all over the place. With the technique they'll lap it up and won't swallow it and spit it all back up - they don't swallow it. Some of them drink it like a pint of Guinness, some of them just spit it all over the place, in which case you end up with a soggy wet tissue that they spat out rather than they drank. And I suppose then you're a bit doubting how much they've had. It's important that you find out how much they had and you don't know. (Midwife (3), Q5, L1 & Q6, L1)*

*Occasionally, it works very well. But I would say, most of the time, it doesn't. They dribble more than they take. (Nurse (3), Q3, L1)*

*I just can't do it, it's messy, the baby stinks of formula after, it's all over it. (Midwife (17), Q5, L1)*

*A cup feed can be a bit messy and you can't always be sure how much is on the bib and how much has gone into the baby. (Nurse (1), Q3, L4)*

The observation work carried out on the postnatal ward also supported this view:

Excerpt 10 from field notes (winter 2002):

*I have seen lots of cup feeds now and at times it can be rather a messy business. One midwife I observed today attempted to do a cup feed on several occasions but the milk was spilling out from it. In the end she opted for the syringe which worked well for her, and she commented to me that sometimes the cup could be a bit messy.*

Dowling et al. (2002) also reported that the cup could be messy to use and discussed that it could therefore be difficult to determine exactly how much milk a baby had taken (see 'Mothers' experiences of supplementary feeding methods').

### **The effect of gestation**

There was also a view amongst midwives that pre-term babies were more successful cup feeders than term babies (see following quotes). This suggests that it may not be suitable, as has been done in the past, to generalise any research related to cup feeding beyond the 'group' in which it was conducted.

*Strangely enough, cup feedings are better with premature, it seems to work better. I've found with premature babies if they won't take it from a syringe or a bottle, sometimes they'll take it from a cup (Midwife (3), Q5, L2)*

*Pre-term tend to be better at cup feeding. I think pre-term tend to lap it up more, whereas term babies are more into sucking. (Nurse (2), Q6, L1)*

*Term babies aren't very good cup feeders, they tend to be much more dribbly and spitty and have trouble cup feeding, whereas premature babies seem to do it much better. (Midwife (5), Q1, L29)*

The opinion that 'dribbling' is more prevalent with term babies has been previously expressed by Lang (1994), who suggested this may be because term babies' tongue movements are stronger.

### **Difficulties returning to the breast**

Some midwives believed that cup feeding a baby on several occasions could cause difficulties when a baby was later put to the breast:

*If they've been cup fed a lot, they get used to having the milk ready and there straight away. And if you try them at the breast,*

*especially if mum's a bit anxious, and their let down's delayed for a bit, and if they don't get anything, they pull away and they're screaming. It looks like frustration, and it's like 'where is it?' (Midwife (11), Q6, L4)*

*Babies can be addicted to the cup so there can be difficulties there as well. (Midwife (5), Q1, L28)*

Lang (1994) has discussed that some infants may show a preference for cup feeding, particularly when they do not have a regular opportunity to go to the breast. This view was also supported by the experience of one of the mothers interviewed (see also 'Mothers' experiences of supplementary feeding methods').

## Syringe feeding

### **'Kissing the breast'**

One-fifth of midwives were of the opinion that babies who had been syringe fed tended to 'purse their lips tightly' when returning to the breast, as if they were still trying to suck from a syringe. This observation suggests that the syringe can create some confusion in the newborn. To date, this observation does not appear to have been documented within the literature. One midwife who was interviewed termed this observation as 'kissing the breast'. The following quotes illustrate this view:

*My least favourite would probably be the syringe...sometimes I find when they go back on the breast they're very much 'kissing the breast', they won't open their mouth again because they're not used to it, they're like this [midwife purses her lips] very closed, very pert...They're not used to opening their mouth and sucking for quite a long time. (Midwife (3), Q8, L3)*

*I am very anti-syringe...The baby's mouth is very small and closed with the syringe... It's still a different sucking action, the babies don't open their mouths. I'd rather give the baby a teat or a cup. (Midwife (4), Q3, L1 & L2)*

*It is frustrating with syringe fed babies, if they've been syringe fed for a few days, you can really tell because of the way they move their mouths, and the breastfeeding is so different...because a syringe is so tiny, they don't open their mouth at the breast. (Midwife (17), Q7, L1 & Q9, L1)*

### **Reluctance to 'work' at the breast**

Some midwives mentioned that syringe fed babies don't respond when they are put to the breast because they don't have to 'work' for their feed

when the milk has been dribbled directly from the syringe into their mouths. The observation also revealed that babies responded in different ways to the syringe: some babies allowed the milk to be dribbled into their mouth whereas others sucked the milk directly out of the syringe.

Excerpt 11 from field notes (spring 2002):

*I've noticed that there seem to be differences in the way in which some babies respond to the syringe once the midwife has placed the syringe on the lips. I've seen a few babies start to suck on it and draw the milk out of the syringe, whereas others don't suck and allow the midwife to dribble the milk in the mouth. It looks like the way the milk is obtained has more to do with the baby's response rather than with the midwife's technique.*

The interviews carried out also provided support for what had been observed:

*The syringe is OK, the baby sometimes tries to suck the syringe though. (Midwife (2), Q6, L1)*

According to Biancuzzo (1999), a syringe feed should involve the milk being 'slowly and gently squirted into the newborn's mouth'. The author did not document the possibility of some infants sucking the milk out from the syringe. Personal communication (Siderfin 2002) suggested that the correct way to syringe feed a baby is to dribble the milk slowly into the baby's mouth, but suggested that some babies do respond by sucking on the syringe. Riordan and Auerbach (1996) have discussed that a small amount of milk should be introduced into the corner of the infant's mouth, aimed at the inner cheek surface to prevent choking. In addition, they also suggested that the plunger can be removed and 'the baby's own suckling will often draw fluid into the mouth without difficulty'. In this case, clearly, sucking is an expected response.

The way in which a baby responds to the syringe may therefore be related to how a baby later behaves on the breast. Some babies may purse their lips as they try to suck the milk as they did from the syringe, whereas others may be passive and expect the milk to be dribbled into their mouths. The following remark was made by a midwife:

*You put the fluid into the mouth with the syringe, so when you put them to the breast, they expect the same thing to happen. And they lie there and think 'so, where is it?', and they won't do anything. So yeah, they may just not open their mouths properly, or if they do and get on there, they sit there and either*

*yell at it, or they sit there and don't do anything, and it doesn't click that it's anything to do with food at all. (Midwife (5), Q8, L6)*

The question has to be asked whether a baby who is actually sucking from a syringe would not be better sucking from a bottle. The shape of a teat is certainly more 'nipple-like' than the end of a syringe barrel.

### **Baby's control of rate**

Several midwives highlighted that the syringe offers the baby less control whilst feeding, and it is therefore important to be aware of how much milk is being delivered to the baby. As already discussed, if the correct technique is not used, it appears that there is a risk that the baby could choke. Biancuzzo (1999) cautioned that the care-giver is in control of the syringe and must therefore be careful not to overwhelm the infant with too great a volume, as the following examples illustrate:

*I'm not particularly keen on a syringe to feed a baby, because I think it takes a lot of the control away from the baby, you've got to be careful about what rate you put the milk into the baby's mouth, you might find that the baby's going to choke on it as it's still got to be alert enough to take something. (Midwife (5), Q5, L38)*

*They don't actually have any control really with the amount of milk they are taking, and they can choke...I least prefer the syringe, only because there's definitely less control for the baby with the syringe. (Midwife (7), Q16, L1, Q3, L1)*

*If you use the syringe it has to be done very carefully, as the baby can choke. You need to be careful how fast you do it. That's why I don't like using syringes, you could force too much milk down. (Midwife (15), Q3, L1)*

### **Ease of use**

Some midwives perceived the syringe as the easiest method to use, but not necessarily their favourite. For those who preferred the cup, they often mentioned that they did so because it offered the baby more control than the syringe.

*I will use a syringe, but I prefer the cup because it seems much nicer than just shoving it in and filling the baby's mouth up with milk. I always worry a baby could choke with the syringe. It's more like force-feeding. (Midwife (13), Q2, L1 & Q3, L1)*

*...Being more tricky [cup feeding] for the mother actually gives the baby that bit more control. But as far as techniques, I'd say syringe feeding would probably be the easiest, but as I said it's not my preferred method personally. (Midwife (7), Q23, L1)*

The last quote illustrates that different methods can have 'care-giver-centred' as opposed to 'infant-centred' advantages. An advantage to the mother or healthcare professional is not always a benefit to the infant.

Another midwife highlighted that the syringe is not necessarily the quickest method when a careful technique is used:

*It isn't just a case of squirting it in, it's a case of putting it on the baby's tongue really gently...I want to make it clear I'm not just squirting the milk in the baby's throat, so it is very much just dribbling it in...I suppose you could argue that it's quicker with the syringe, but in actual fact, it's not really, because if you put too much in, it just comes out anyway. (Midwife (10), Q10, L1, Q17, L1, Q18, L1)*

One midwife claimed that babies who do not have a good sucking technique 'spit' the milk out during a feed. This may be related to the speed of delivery of the supplement and again emphasises the need for a cautious technique:

*If they haven't got a good sucking technique they spit it out all over the place. (Midwife (3), Q8, L3)*

### **Expressing directly into a syringe barrel**

Three midwives described their experiences of mothers expressing colostrum directly into a 2ml syringe barrel, and emphasised how giving a small amount could be valuable in awakening a baby's interest so it could then immediately be successfully put to the breast. In addition, one midwife felt that the use of the syringe could help mothers feel more positive about their milk supply because they could actually see their milk 'filling up' a syringe:

*Sometimes only a ml or two and the baby will swallow it, and it suddenly gets an appetite, and you can almost immediately put the baby on the breast, and that's amazing, because if I'd have given it formula it wouldn't have shown any interest at all, because it will have been zonked out. That little bit of colostrum seems to wake up their appetite, and they're away...Filling up a 2ml syringe makes the parents feel good, because Mum can*

*see it filling up and it's like 'gosh there's something in it', whereas with a bottle, there'll only be a couple of dribbles...However, if there are large volumes, if you've got to get a lot into the baby, I don't really like using a syringe.*  
(Midwife (5), Q6, L22 & L12)

The technique of expressing into a 2ml barrel was not observed. The above quote also suggests that the syringe may be more suitable when smaller volumes of milk are required.

## Finger feeding

### Difficulty in using

Approximately a quarter of the midwives and nurses interviewed had experience of this method. However, the majority had only used it once or twice. In general, those who attempted finger feeding commented that it was difficult to set up:

*I tried to use it once and I just couldn't...I gave it a go when I first heard about it, I didn't have a lot of knowledge about it, I was probably doing something completely wrong and I thought it was very clumsy, very you know tricky to set up.* (Midwife (3), Q7, L2 & Q8, L1)

*It was hard to do at first and took a couple of attempts before it worked.* (Nurse (2), Q11, L1)

However, another midwife was successful in finger feeding the first baby she tried it with but not subsequently:

*It was fantastic, the baby sucked, it was brilliant, it was really quick, and it wasn't messy, it was fantastic...I've tried it about [several times] since, and I haven't been able to do it...It's kind of an awkward position to get yourself into, you've got to find somewhere to balance the bottle, and check the end of the tube's in the bottle, so it is a bit [difficult] to get it together.*  
(Midwife (17), Q24, L3, Q23, L1, Q27, L1)

Biancuzzo (1999) highlighted that finger feeding can be awkward because it involves the care-giver doing several tasks at once. It is interesting that only one of the midwives had sufficient success with the method to enable her to comment on the baby's reaction to it.

## The supplemental nursing system

### Difficult to use

Approximately one-fifth of the midwives interviewed had experience of using the supplemental nursing system and a further fifth had seen it

used. None of the three nurses interviewed had used the device, although one of them had seen it used. Those who had used it frequently mentioned that it was difficult to set up. It appeared that the device was considered suitable only for those babies who could latch onto the breast well, as it might become too much of a struggle for the mother to use:

*It really is used only for a baby that can go onto the breast quite easily, it's quite difficult to use if you've got a breast that is difficult to latch onto, because you've got to get the end of the tube that's attached to the nipple into the mouth as well as the nipple, and if you're already having difficulty getting the nipple into the mouth, getting the tube in as well, especially if mum's trying to do that, and if she's not very good at it either, the whole thing becomes a real fiddle, it's difficult, and then it becomes psychologically for the mum a struggle every time, and that makes that difficult. (Midwife (17), Q5, L25)*

However this seems to avoid the fundamental question as to why, if a baby is latching on to the breast well, the mother's milk supply is inadequate.

*Getting the nipple and tube in is not the problem, sometimes, it's getting the nipple in that's the problem! It's not easy, some babies don't fix well, and it's a bit of a struggle. (Midwife (10), Q26, L1)*

A number of healthcare professionals also commented that some mothers find the device a nuisance to use. This view has also been expressed by Biancuzzo (1999) who discussed that, in particular, some mothers may find the device difficult to get on and off. As discussed in the previous section, one mother who used a simplified version (see Appendix B) reported a very positive experience but considered the device to be somewhat 'fiddly' to use.

#### **Need for a committed mother**

When midwives discussed this method they often referred to the fact that mothers who use it need to be particularly determined to breastfeed. They claimed that this method could help a mother feel more positive because the baby is kept at her breast, which also assists in stimulating her milk supply:

*The method that I prefer most is probably the nursing supplementer, but you've got to have a mother that's really keen and committed and ready to have some fiddling done. It's a bit*



*of a contraption when you're setting it up. But that for me I think is an effective way of increasing milk supply and feeding the baby, so I like that. (Midwife (5), Q10, L2)*

*I have seen the supplemental nursing system and that worked really well. That was about a year ago. It's a bit of a performance to get it together. The mum that used it was very determined to breastfeed. The mum felt better about the nursing system as she felt the baby was taking the milk from her. It was fiddly to get together though. (Midwife (2), Q10, L1)*

*It's very fiddly, quite often, it depends on the mother as well, and how committed she is, some mums just don't want the hassle of it, and fiddling with it, and get frustrated and you know, don't like it. The other annoying thing is sometimes if the tube protrudes too much, and you try to get the baby on it, and the baby latches onto the tube and sucks like a straw. So you know, again, it's getting the positioning, and getting it all right, and especially if it's leaking, and it slides around the breast. So it's fiddly, and I think that's probably why a lot of people perhaps avoid using it, because it is a bit fiddly, but when it works, it works quite well. (Midwife (11), Q7, L1)*

### **Avoiding confusion**

The midwives stressed that the supplemental nursing system is a method which is unlikely to cause confusion in an infant:

*Some mums manage very well, and it does keep the baby at the breast, so it doesn't get confused with a funny sort of teat or anything like that. (Midwife (5), Q5, L32)*

### **Midwives' dislike of the device**

Approximately half the midwives interviewed, including those who had not actually used it, considered the device troublesome or 'fiddly' to set up. Those midwives who had not used the device lacked confidence in its use and were very wary of it:

*I've got a really big phobia of that...It's completely irrational, I just don't like it...I avoid using it at all costs. (Midwife (17) Q31, L1 & Q32, L1 & Q34, L1)*

*I don't know if I'd have the confidence myself to give it a go. (Midwife (10), Q16, L2)*

## Nasogastric and orogastric tubes

Both orogastric and nasogastric tubes were used on the NBU. Nasogastric tubes were also used on the postnatal ward, often with babies who had been transferred from, or who would otherwise have been on, the NBU. Orogastric tubes were not used on the postnatal ward. Other reasons for the use of nasogastric tubes on the postnatal ward were (a) to avoid the confusion associated with other methods such as the cup, bottle and syringe, and (b) for those babies with a low blood sugar who did not have the energy to take the feed from a cup or syringe.

### **Perceived advantages**

Tubes were considered effective in providing certainty as to how much milk a baby had received. Several healthcare professionals also expressed the view that tubes were easy and less time consuming than other methods of supplementation:

*Obviously it's easy once it's there and takes less time than the cup. (Nurse (3), Q4, L4)*

*They're so easy, I love them for their easiness. I'm terrible, but you know, when you've been on a long stretch of days, and you know there's a baby that you're coming back to, you know that it's a \*\*\*\* feeder, you know you're going to have trouble with it, and you come in and the person who was dealing with it before, and they're like 'Oh I put a tube down it' and you're like 'Yes, thanks so much!' (Midwife (17), Q39, L1)*

Parents' attitudes towards feeding tubes were very different to those of the healthcare professionals, and they often found them deeply distressing (see 'Mothers' experiences of supplementary feeding methods'). The following quote from a paediatrician shows awareness of this issue and suggests that tubes may sometimes be over-used because of their 'easiness':

*We as health professionals who use tube feedings, at the drop of the hat, it's no big deal to put a tube down, so parents do see that as very invasive, very artificial, and I think perhaps we make the mistake of neglecting those concerns, because we do it so often, it's easy to put a tube down...Personally I sometimes feel we over use tubes...Maybe tubes are being used because it's quicker. (Paediatrician (3), Q4, L1 & L7 & Q8, L11)*

### **Perceived disadvantages**

A number of healthcare professionals suggested that tube fed babies can be more prone to vomiting:

*I suppose you tend to get more vomiting with tube fed babies, I think they vomit more, and so you have to be aware of just how quickly you're giving the feed. And when they're being bottle fed or breastfed they can decide for themselves when they've got a full tummy and they can't when they are tube fed. (Nurse (3), Q4, L1)*

*They're sick quite a lot as well, they get really sick. (Midwife (8), Q40, L1)*

One healthcare professional thought tubes were a very mechanical method of feeding, and suggested a way of coping with this:

*The disadvantage I think is that you're giving the baby a feed that's very mechanical, there's not necessarily any touching, the baby's not sucking...I'll quite often get the mum to cuddle the baby, so you've got the contact there, perhaps the mum could put a finger in the baby's mouth or something at the same time as I'm doing the tube feed...I think it's nice to encourage the baby to suck on something, and the baby's getting the feeling that now his tummy's filling up. (Nurse (1), Q3, L7 & Q5, L2, Q7, L2)*

## Bottle feeding

### **Advantages**

Several midwives considered the ease of bottle supplementation to be a considerable advantage. One midwife thought that the bottle was the easiest of all methods to use and discussed her experience of working with Muslim mothers who combined bottle and breastfeeding without encountering any difficulties:

*Well it is not advocated to use the bottle with breastfed babies, as the baby may prefer the teat to the mother's nipple. However, it would be the easiest to use...but it's not recommended if the mother wants to breastfeed...I used to work where there was a large number of Muslim mothers, and they bottle feed their babies at the beginning, as they don't like to give their babies colostrum, as they think it is dirty....They express and get rid of the colostrum, and then when the milk comes in, they put the baby back to the breast, and the baby has no problems at all, despite having been on the bottle, and using the teat. (Midwife (1), Q10, L3)*

A further midwife suggested that a bottle feed can help to assess a baby's ability to suck:

*Bottle feeding really is for the one-off supplementary feed. Sometimes using a teat can be good to see whether a baby can suck. If a baby has had a forceps delivery he may have a very sore jaw and head, and may find sucking painful. If the baby is given a teat you can see whether he is able to suck. (Midwife (4), Q4, L1)*

### **Disadvantages**

The view was expressed by one midwife, however, that the bottle is not necessarily easy to use:

*A lot of people think it's always easy to use, but that's not always the case. It's not always the easy option, not all babies take to the bottle, especially where mums have had problems getting the baby onto the breast, sometimes it's not always easy to get a baby onto the bottle. (Midwife (11), Q14, L1)*

The concept of 'nipple-teat' confusion was widely accepted by these healthcare professionals and had a profound effect on their practice. (See 'Healthcare professionals' knowledge of supplementary feeding methods'.)

## **Mothers' knowledge of supplementation and breastfeeding processes**

### **Understanding the reason for supplementation**

All mothers, regardless of their age or employment background, were able to articulate clearly why their babies required supplementation. Precise details were frequently cited, such as the exact amount and content of each feed, and the times at which they were given. This suggests that mothers were well informed about the reasons for supplementation; they understood, remembered and valued this information, and appeared to consider details about it to be important. The following quotes illustrate this:

*He was given a supplementary feed using formula because he had a very low blood sugar level, about 1 or 2 and he needed to eat. He was three weeks premature and he's a very sleepy baby...I've tried him at the breast, but he wouldn't feed so we had to give him something else. He also has had his tummy drained, as he had mucus in his tummy. He was given 10mls at 12.30 at night, and 30mls at 3.30am, and then 30mls first thing this morning. (Mother (11), Q1, L1)*

*I was a gestational diabetic and they didn't want to give it too long due to the diabetes, so I had a caesarean. She went straight to the NBU where her blood sugars were checked, and she needed to be topped up, she was given formula every hour or so, and then it was gradually reduced to 3 or 4 hours...The tube was used as she needed to be topped up...I knew it would only be a temporary measure, I was told this in NBU. (Mother (16), Q1, L1 & Q7, L1)*

*She only needed a small amount, about 50ml. The second time, her blood sugar went down and that's why they gave her the formula, to give it a bit of a rise. I think her blood sugars went down initially, shortly after she was born. And the second time she was just getting more yellow throughout the day and she went quite floppy and we couldn't wake her to feed her and they put the nasogastric tube down and she had formula through it. (Mother (27), Q7, L1)*

The detailed accounts that mothers were able to offer demonstrate that healthcare professionals must have made considerable efforts to ensure that mothers were aware of the reasons for supplementation and were constantly updated as to the situation.

## The value of colostrum

Approximately one-fifth of the mothers interviewed indicated that they did not perceive colostrum as 'food', and appeared not to value it, often highlighting that 'only a small amount was there'. Mothers need to be aware of the value of colostrum:

*We did try him at the breast, but there wasn't any milk there, only the colostrum had come in. (Mother (3), Q1, L4)*

*I think I was just having more colostrum down there [meaning her breasts], so they had to supplement with formula. (Mother (27), Q1, L2)*

Two mothers, however, were clearly aware of, and positive about, the value of colostrum:

*He took 15-20mls of milk, and also a little bit from myself, the antibodies and the colostrum as well as the formula. (Mother (18), Q8, L1)*

*Yes, well it's the best bit really for the baby. (Mother (8), Q6, L1)*

## The physiology of breastfeeding

The mothers who were interviewed often commented that they knew 'breast is best', but some indicated a lack of knowledge about the physiology and processes of breastfeeding.

### **Frequent feeding**

The part played by frequent feeding in stimulating further milk production often seemed to be misunderstood. Mothers appeared to need informing about the physiological function of frequent feeding.

One mother's baby was supplemented on day three with formula at the suggestion of her midwife because her baby was feeding frequently:

*I was not too sure at first, because obviously if you can breastfeed, I'd rather not use formula. But then he was very hungry and just wouldn't settle. (Mother (4), Q3, L1 & Q7, L1)*

This mother was also asked why she had subsequently requested a further supplementary feed and replied:

*My milk's not come in very much, I thought he may be hungry again. (Mother (4), Q9, L1)*

One mother, when asked whether she would ever consider requesting a supplementary feed for her baby, replied:

*I'd only ask if I didn't have anything there, any milk there. (Mother (27), Q10, L1)*

The above quote was from a mother who has been quoted in the previous sub-section who did not appear to value her colostrum and did not understand that it was, in fact, 'food'.

One mother who thought her baby had been feeding frequently said:

*I think the problem [frequent feeding] is he's quite big, and not settled or satisfied by my own milk supply. (Mother (25), Q1, L2)*

None of these mothers mentioned the importance of stimulating the breast by feeding, and did not seem aware that supplementation could lead to a reduction in their milk production. These mothers perceived that their own milk supply was inadequate for nourishing their babies. Those mothers who consider that they have an inadequate milk supply may need to be educated about the processes of breastfeeding, and may

require additional support with their breastfeeding techniques. Supplementation may serve to reinforce a mother's belief that she is unable to provide for her baby, and reduce her confidence in her ability to breastfeed even further.

Dykes and Williams (1999) carried out a phenomenological study with ten women who were recruited before transfer home from a maternity unit in the north of England. In-depth interviews were conducted at 6, 12 and 18 weeks following the birth of their babies. The focus of the study was to explore their perceptions concerning the adequacy of their breast milk in exclusively nourishing their babies. It was found that one of the women was distressed by her baby's frequent feeding, one discontinued primarily due to sore nipples, although she was also very anxious about her milk supply, and four discontinued breastfeeding because they perceived themselves to have insufficient milk. The authors suggested that the perception of an inadequate milk supply may create a self-fulfilling prophecy once supplementation has been introduced.

Lothian (1995) speculated that a mother's perception that her milk supply is insufficient may be due to 'faulty sucking', and referred to Righard and Alade's (1992) findings that faulty sucking can be corrected. Lothian also recommended that mothers should be educated about the baby's influence on breastfeeding, and that strategies for managing breastfeeding with what might be perceived as a 'difficult' baby should play a part in education programmes.

Perceived inadequacy of milk supply is a commonly cited reason for early cessation of breastfeeding (Hill 1992; Foster et al. 1997; Hamlyn et al. 2002). Mothers need to be informed about the supply and demand nature of milk production, as this may encourage them to continue breastfeeding, and to recognise that supplementation is not the answer and may actually exacerbate the problem.

Two midwives, however, clearly felt it was important to explain the reason for frequent feeding to mothers:

*If mum was tired, perhaps day two, the baby was hungry, continually feeding, I'd talk to them about why perhaps the baby is doing it to start with, so she had a good understanding, because often if you rationalise with the mum to start with, why their baby continually sucks all the time, it may make them more willing to continue. (Midwife (3), Q1, L2)*

*I would say [to a mother requesting a supplementary feed], your baby just wants to feed, it's hungry...work on the supply and demand, the more they feed, the more you produce, therefore that's what your baby's trying to do, is up your demand. (Midwife (11), Q12, L1)*

Only one mother expressed the view that supplementation could jeopardise the chance of successful breastfeeding, but even she appeared to think that breastfeeding more frequently than supplementing would ensure success:

*I did worry that he might not want to breastfeed though. But as long as you do both [breastfeed and supplement] and try to do more of one [breastfeeding] than the other, he should be alright. (Mother (22), Q9, L1)*

### **The need for realistic expectations**

The view was expressed that mothers need realistic expectations about what breastfeeding will be like when they first start:

*I think they have unrealistic expectations about breastfeeding, and that's the problem, they can't cope with the reality of it, because it is demanding, babies do feed every two to three hours, day and night, and that's the way it is. If you want to breastfeed that's what you have to do. If you get it right, then it's fantastic. (Midwife (13), Q14, L1)*

A phenomenological study carried out in the USA by Mazingo et al. (2000) explored the lived experiences of nine women who initiated breastfeeding but discontinued within the first two weeks after birth. The women described incongruity between their idealised expectations and early breastfeeding problems. This led to what the authors defined as 'incremental disillusionment' and subsequent cessation of breastfeeding. The authors emphasised the importance of providing better education to women anticipating and learning to breastfeed, and claimed that mothers should be informed about the possibility of common problems such as nipple soreness, failure to latch on and milk leakage. In addition, they suggested that women be made aware of the reality of sleepy, fussy or irritable infants who do not fit in with the idealised vision of motherhood.

## **Breastfeeding support and guidance**

Several mothers claimed that their babies spent very long periods at the breast. Clearly, it is not possible to be certain of their accuracy of recall, but it is evident that they felt that the feeding episodes were very prolonged and stressful:



*He had been breastfeeding continuously for about five hours the night they suggested it [a supplement], and I was very tired and stressed, but I didn't think he needed it the night they suggested it. (Mother (2), Q2, L1)*

*Well I wasn't sleeping, and not enjoying breastfeeding, he would suck for an hour and a half, or two hours on each side, with an hour and a half between feeds...A midwife suggested a bottle, so I breastfed as long as I could and then we were topping up. We were hoping my breasts [her nipples] would heal as they were sore. (Mother (6), Q3, L1)*

One third-time mother who had not successfully breastfed before was concerned about the prolonged breastfeeds she had experienced because it didn't seem 'normal':

*He woke for a feed at 3.30 this morning, and went on the breast for two and a half hours, maybe three hours, and then he woke up again at 10.30am. I was concerned he hadn't had enough milk from me, so I asked if he could have a bottle. I didn't succeed in breastfeeding my last two, and as I hadn't breastfed before it didn't seem normal he still seemed hungry, so he had 20ml of formula by bottle. (Mother (7), Q1, L4)*

Smale (1998) has discussed how it is common for women to compare their babies with others and worry that differences, especially during 'growth spurts' where supply is ensured or increased through periods of very intense feeding, may mean that something is wrong, and it is important to remind mothers of their babies' individuality.

These mothers needed considerable support in relation to their perception of the prolonged time their babies took to feed. While it is impossible to know what interactions took place, it is unfortunate that, for two of these mothers, the main advice they remembered receiving from health professionals was the suggestion to supplement. In addition, the third mother who requested supplementation herself did not indicate that an attempt had been made to dissuade her.

## Bottle feeding

Mothers were not directly asked whether they were aware of any difficulties associated with any of the methods of supplementation, but four mothers spontaneously mentioned that supplementation by bottle could adversely affect breastfeeding:

*I know if you give them a bottle they may then sometimes never go back to the breast. (Mother (1), Q10, L1)*

*I know they give them the cup to avoid nipple-teat confusion. (Mother (4), Q2, L5)*

*The midwife did say about not using the teat for feeding him because I was breastfeeding, she said it's not a good idea. (Mother (11), Q8, L1)*

*We were worried that if we kept using the teat her mouth would close on the breast, so we used the cup. I could see why we used the cup, because I want to breastfeed. (Mother (28), Q4, L1)*

However, one mother gained a completely different impression:

*Monique [fictitious name] said don't worry, sometimes when babies have to go on the bottle they can go back to breastfeeding. Monique said she knew one mother who went home and was bottle feeding, but a few weeks later she had started breastfeeding again. (Mother (17), Q20, L2 & Q28, L1)*

Only a few mothers did not appear aware that bottle supplementation was not recommended for breastfed babies:

*You know they'll get fed by the bottle...It's a quick solution [when needing a break from breastfeeding]. (Mother (7), Q2, L4)*

## Finger feeding

Of the three mothers whose babies had been finger fed, two felt that it had a positive effect on their baby's ability to suck:

*He has been a lot better recently in terms of trying on the breast, but we tried finger feeding to encourage him to suck. (Mother (20), Q8, L1 – this baby had previously had two cup feeds)*

*The finger feed did teach him to suck and he latched on very well to the breast afterwards...It's there for a purpose rather than just a top up. It actually did something towards helping breastfeeding. (Mother (21), Q10, L1)*

## Cup feeding

A leaflet is given to parents whose baby is being cup fed on the NBU (see Appendix G). No mothers appeared to know that there could be any difficulty in transferring the baby to the breast after supplementing by cup.

Mothers seemed to only know that bottle-feeding was considered to create problems. Mothers generally commented that the cup was used to avoid 'nipple-teat' confusion:

*I know they give them the cup to avoid nipple-teat confusion.*  
(Mother (4), Q2, L5)

*I think with the cup and the syringe, cause they have to [work for the milk]...they're not getting an easy job and they can still go back to the breast.* (Mother (1), Q10, L3)

One mother felt that she didn't know enough about cup feeds and wished she had been better prepared. She believed finger feeding helped her baby return to the breast:

*I regretted letting him have the cup feeds. If I'd done my homework better I wouldn't have let him have them...I panicked that he hadn't had enough milk from me.* (Mother (21), Q8, L1)

Midwives were observed informing mothers that the cup was a particularly good method of supplementation because it was unlikely to cause the confusion that is thought possible after using the teat. However, some mothers may have been left with the impression that the cup itself would cause no difficulties.

## Syringe feeding

Observation on the postnatal ward and interviews with healthcare professionals indicated that some babies tended to suck from the syringe, and some appeared to try to suck from a syringe shape when they were later put to the breast. Other babies appeared to expect the milk to be dribbled into their mouths as it was with the syringe (see 'Healthcare professionals' experience of supplementary feeding methods'). These difficulties were not appreciated by all the midwives:

*The older, more experienced midwife used the syringe because the baby can't latch onto it anyway. There isn't going to be any nipple-teat confusion with the syringe.* (Mother (3), Q5, L6)

All but one of the mothers whose babies had been supplemented using a syringe seemed to think the method had no drawbacks:

*The midwife suggested that I had two options and these were to use either the syringe or the tube. She suggested that she might get confused if we used the syringe, and for this reason we chose the tube.* (Mother (14), Q1, L2)

## The supplemental nursing system

Although one-fifth of the midwives had experience of using the supplemental nursing system, it became evident that it was not used very frequently. The one mother interviewed who had used it was aware that it allowed her baby to take some of her own milk as well as the formula. The mother showed that she was aware of the antibodies in her colostrum and valued the information given to her and the time her midwife spent explaining this method to her:

*Once he was on...he took 15-20mls of milk, and also a little bit from myself, and the antibodies and the colostrum as well as the formula...My midwife talked it through and why it was a good idea to use it...I think having it talked through so well beforehand made me feel positive and that's important in building up my confidence. (Mother (18), Q8, L1 & Q13, L5 & Q14, L1)*

In order to make an informed decision, parents require reliable, accurate and unbiased information about the comparative effectiveness of the various methods available. There is an urgent need for further research in this area.

## Healthcare professionals' knowledge of supplementary feeding methods

A large number of health professionals suggested that they were unsure about whether there was adequate evidence concerning the use of certain methods of supplementation. The theory that bottle-feeding could cause 'nipple-teat' confusion created the most uncertainty, often because the experience of the health professionals themselves, or of others they knew, appeared to contradict it. In addition, there was uncertainty as to the effectiveness and safety of certain methods, which is not surprising given the limited amount of evidence currently available. Clearly, further research is urgently needed to enable healthcare professionals to make informed decisions and to resolve the uncertainty they currently face.

It was also found that healthcare professionals encountered difficulties in teaching other members of staff how to use certain methods. The techniques involved for the supplemental nursing system and finger-feeding were considered to be particularly difficult to teach. The majority of participating paediatricians and SHOs were not aware of either the supplemental nursing system or finger feeding. Furthermore, the SHOs did not seem to know about cup feeding and were not aware that bottle feeding was not recommended for breastfed babies. A small number of midwives had not heard of finger feeding, but were very aware of the

other methods and could describe them in detail. However, accurate knowledge of the methods did not necessarily mean that they had practical experience of them.

## Bottle and 'nipple-teat' confusion

Approximately three-quarters of healthcare professionals stated that they did not use bottles because of the likelihood of 'nipple-teat' confusion. Knowledge of the concept of 'nipple-teat' confusion was widespread, and spontaneously raised by healthcare assistants, nurses, midwives and paediatricians. However, some healthcare professionals doubted that 'nipple-teat' confusion had been accurately described in the literature and that it truly existed. A considerable number of these indicated that they 'could not take the risk' of using a bottle and thereby possibly jeopardising a mother's breastfeeding career. The following are examples of the views expressed:

*I'm not 100% sure on my research though but from what I've learnt giving it a bottle can cause nipple-teat confusion...I know there's some doubt in that. (Midwife (3), Q2, L11)*

*I'm not sure if there is any evidence that suggests that once a baby has fed from the bottle that it then won't go to the breast, but that's sort of what's been passed on, that it's a no-no, and you do not give the baby a bottle if the baby's hoping to breastfeed... I'd rather err on the side of caution rather than plunge ahead, and it might not work, do you know what I mean? (Nurse (1), Q10, L4 & Q13, L5)*

*The theory behind not using a bottle is nipple confusion, but I think it's more if the baby has a bottle, there's this nipple that sticks nicely into its mouth, whereas when it goes to its mother and can't find anything, because it's difficult to latch or something like that, then they'll chose to go to the bottle rather than try harder at the breast...So that's why I try to avoid using bottles if you've got a baby that finds difficulty going to the breast. If the baby doesn't seem to have any trouble going to the breast I don't really see any problem giving it the supplement by bottle, especially if the mum is happy for that. But some mums have already been told, oh the baby will get confused, and it won't go back to the breast, and then you can sort of say OK well we can try another way. (Midwife (5) Q1, L17)*

*The midwives like to use a different method if they're being breastfed, because of the way the babies suck, its completely different with the bottle than it is with the breast, so they don't*

*like the babies to get in the habit of sucking from a bottle because it's easier for them, and they find the breast more difficult. (Healthcare Assistant (1), Q14, L1)*

*There's a lot of research that says you shouldn't [use a bottle] quite old research, I think it was a few years ago...But I don't tend to use it because I don't want to detriment breastfeeding. And also because a baby will suck on anything that's put in it's mouth, I think that's why it may interfere with breastfeeding, I don't believe in nipple confusion, as such, I think it's just other things that may not aid breastfeeding. (Midwife (7), Q8, L6)*

One midwife referred to research that argued against the concept of 'nipple-teat confusion', and appeared to find this debate ambiguous:

*I try and encourage mothers to use the cup, rather than the bottle, but you can read some articles, I think Chloe Fisher has written an article that says there's no such thing as nipple-confusion, so it's confusing for us that is. All the way through your training as a midwife you're taught about 'nipple-teat' confusion and when I read the article it was very difficult to make my mind up about it...I'm geared towards the cup as I don't want to risk spoiling the breastfeeding. (Midwife (15) Q10, L1)*

Many midwives considered bottle supplementation to be acceptable if the baby had some prior experience of feeding from the breast:

*I'd try and avoid a bottle at all possible costs, especially if breastfeeding hasn't been established... Some midwives would argue if the breastfeeding's established, you could give it whatever, because they're used to sucking on the breast. But especially with the babies you're just kind of trying to get to feed that haven't actually fed from the breast at all, I'd definitely try to stay away from the bottle because of the confusion that it creates, because they haven't actually yet sucked on a breast they don't know what they're doing and if you go giving them a bottle, it's a bit more tricky. (Midwife (3), Q2, L8 & Q9, L1)*

It is clear that *The Ten Steps of the Baby-Friendly Hospital Initiative* (Division of Child Health and Development 1998), which include advice against the use of teats for breastfed babies in the early post-partum period, has had a considerable influence on healthcare professionals' practice in relation to supplementation. There is some confusion among

midwives and nurses, however, as to whether 'nipple-teat' confusion actually occurs.

There has also been debate in the literature. Wilson-Clay and Hoover (1999) suggest the term 'confusion' may be more accurately described as the 'development of an altered expectation for a satisfied feeding'. Fisher and Inch (1996) have argued against the concept of 'nipple-teat' confusion. Their paper suggested that there is no evidence to support the view that babies may forget how to breastfeed if they are given something else to suck. In addition, they suggested that to resolve the problems that have been claimed to be associated with 'nipple-teat' confusion, the mother needs to be given correct information about the way to attach her baby to the breast, and hypothesised that the difficulties described are likely to be related to the mother or care-givers, rather than to the baby. In particular, they suggested that babies who have never been attached to the breast, or who have been pushed too much at the breast, may then show distress at the breast or refuse to feed. If this situation is resolved by feeding a baby by bottle, the pattern may be repeated and viewed as an apparent preference. The concept of 'nipple-teat' confusion needs further research to help clarify the situation.

Brown et al. (1999) carried out a study which described the feeding method at discharge of 63 term babies (30 supplemented by cup and 33 supplemented by bottle) from hospital. It was found that there were no significant differences in feeding outcome between the bottle and cup supplementation groups. The authors suggested that further work was needed to examine the most appropriate method of supplementation for term babies, and that generalisation from work related to babies in special care units was no longer acceptable.

The SHOs were the only healthcare professionals who were not aware that bottle supplementation was not recommended for breastfed babies. When asked about their knowledge of the various methods they replied:

*It is very limited. I suppose, ideally you'd try and make it as similar to a breastfeed as possible, probably using a bottle with a nipple would be the ideal thing, but if a baby's not taking that, then a syringe is probably the next thing, and if a baby has no interest in feeding but needs to have supplementary feeds, perhaps because it's BMs are low, then there's the nasogastric tube. (SHO (1), Q4, L1)*

*I know virtually nothing about such preparations, except for the fact we tend to use a nasogastric tube for babies that we are*

*topping up...and obviously you can give it a bottle and a teat.*  
(SHO (2), Q3, L1 & Q6, L1)

## Syringe feeding

Both the observation and interviews demonstrated that the syringe was not considered appropriate for feeding infants in the NBU, although it was considered acceptable for use on the postnatal ward. However, the reasons for this did not appear to be clear:

*I don't know exactly, it's always been that we don't use them, ever since I've been here.* (Nurse (2), Q2, L1)

Healthcare professionals indicated that they were aware that there is currently little empirical work to inform the use of the syringe as a method of supplementary feeding and expressed some concerns:

*I've never used syringes in my practice before when supplementing feeds, I don't know why, but my theory is that often when you use a syringe it sometimes gets stuck, and also you could force a whole lot of milk down the baby's throat, and so the baby could choke, so I don't consider it as being very safe to do that...There's been no research using a syringe as a method of feeding as far as I know.* (Midwife (13), Q2, L1)

Clearly, there is a need for further research to investigate the use of the syringe as a method of supplementary feeding. Despite the fact it was not considered a suitable method for use on the NBU, pre-term babies were observed being given syringe feeds on the postnatal wards. Clarification as to which groups should not be fed by this method appears to be required and the reasons why this is so.

In addition, there appeared to be some differences of opinion as to the correct technique for syringe feeding. Some midwives discussed that the technique should involve the baby sucking the milk out of the syringe, whereas others mentioned that the milk should be dribbled gently into the baby's mouth. As highlighted earlier, according to Biancuzzo (1999) and Siderfin (2002 – personal communication) the milk should be dribbled gently into the baby's mouth. The following quotes illustrate the varying opinions as to what the correct technique should be:

*It isn't just a case of squirting it in, it's a case of putting it on the baby's tongue really gently... I want to make it clear I'm not just squirting the milk in the baby's throat, it is very much just dribbling it in.* (Midwife (10), Q10, L1 & Q17, L1)



*The baby sucks the milk, the syringe is positioned at the end of the lips and the baby sucks the milk as it comes out. You don't just squirt it in the baby's mouth, the baby sucks as the milk goes on to the lips. (Midwife (1), Q4, L1)*

*The syringe is OK, babies sometimes try to suck the syringe though. (Midwife (2), Q6, L1)*

Observation also revealed different responses to being syringe fed: some infants allowed the milk to be dribbled into their mouths, whereas others sucked the milk from the syringe. Health professionals' views about the correct technique may be largely related to their personal experience.

It is possible to suggest that those babies who sucked at the syringe were also those who 'pursed their lips tightly' when returning to the breast (see 'Kissing the breast' in 'Healthcare professionals' experiences of supplementary feeding methods'). The question arises as to whether they would have fared any better if they had been supplemented by bottle.

A healthcare assistant who had been shown how to use the cup, but not the syringe, discussed that she would like to learn how to syringe feed:

*I think it would be nice, yeah if we had more time to do it, then we could really concentrate on it. I have seen a syringe used before so I probably would be able to do it...I'd like to learn how to use more of the different methods. (Healthcare assistant (1), Q17, L1 & Q18, L1)*

One midwife had been informed about a technique which involved colostrum being expressed directly into a syringe, from which the baby was then fed in order to stimulate its appetite immediately prior to being put to the breast. The midwife did not, however, have practical experience of this technique. Two other midwives also mentioned and had used this technique. (See 'Healthcare professionals' experiences of supplementary feeding methods'.)

*I found recently, through talking to [a midwife with particular expertise], rather than giving a baby a whole supplementary feed, squirt a few mls into the mouth [using a syringe], it makes the baby get hungrier, it will wake the baby up, and then they're looking for it, and then obviously we'll get the baby to the breast after that. (Midwife (17), Q36, L13)*

## Cup feeding

A small number of midwives were of the opinion that it could be difficult to wean babies away from cup feeding and back to the breast.:

*If they've been cup fed a lot, they get used to having the milk ready and there straight away. And if you try them at the breast, especially if mum's a bit anxious, and their let down's delayed for a bit, and if they don't get anything, they pull away and they're screaming. (Midwife (11), Q6, L4)*

This view has been expressed previously by Lang et al. (1994) and Thorley (1997). However, the midwives also considered that such difficulties probably applied to most methods of supplementation:

*A baby may get used to that method whether it's a teat or cup or a syringe, it may then have difficulties going back to the breast. (Midwife (7), Q7, L1)*

One midwife suggested that any method, apart from the supplemental nursing system, might create a preference in the infant for continuing to be fed that way, as the following quote illustrates:

*You've got to overcome the disadvantages that there might be if the baby gets used to the cup, and that might make the transfer onto the breast difficult. And I think really whatever artificial method you use, the ones that we have got at the moment, apart from the nursing supplementer, any of the other ways, you're bound to have difficulties if you use it for any length of time, in moving the baby from that onto the breast, because none of it imitates breastfeeding. So I'm always on the look out for something that might. (Midwife (5), Q9, L2)*

Wilson-Clay and Hoover (1999) are of the same opinion. However, it was considerably more common for midwives to refer to the potential difficulty of nipple-teat confusion than to any possible difficulties following cup feeding. Some midwives appeared to think that the cup was a method that was faultless, and did not mention any of its disadvantages:

*It [cup feeding] is good for breastfed babies and quite easy to use. (Midwife (2), Q7, L1)*

One midwife maintained that especial caution was needed when cup feeding pre-term babies (an issue also raised by Dowling et al. (2002)):

*With cup feeding you have to be very careful, because of the pre-term's swallowing reflexes which may not be fully developed. (Midwife (4), Q3, L14)*

As outlined earlier, term babies were not considered to be as successful cup feeders as pre-term babies, and tended to be far more 'dribbly' and 'spitty'. This suggests that it may be equally as important to adopt a similar level of caution while cup feeding term babies if they are thought to encounter more difficulties.

Several midwives discussed that the syringe is not considered suitable for use on the NBU, although only one midwife gave a similar caution about the cup. Clearly further research is required to establish the best method of supplementing pre-term babies.

### **Knowledge of the baby's actions when cup feeding**

A small number of midwives and nurses assumed that cup feeding required a similar feeding action from the baby as breastfeeding:

*I think with cup feeding, the mouth action is very similar to how it would be on the breast. The baby laps it up like a cat. (Midwife (6), Q7, L1)*

*The good thing about it is it gives the baby the practice in lapping which is used for breastfeeding, it's a similar action, it's encouraging the baby to practice that, so that's a good thing for it. (Nurse (1), Q3, L1)*

This is clearly not the case. Moody (1993) has discussed that the lapping and sucking that occurs during a cup feed is a very different action to the sucking that occurs when breastfeeding.

### **Educational issues**

One midwife thought that the correct technique for cup feeding was not generally used by other staff within the unit:

*You have to really position the baby carefully, it has to be sitting upright, I think that's why a lot of the majority have trouble, they try to nurse it, in their arms, a reclined position, you actually have to do it sitting upright and then tilt its head back, to feed the baby properly, and avoid the baby choking on the milk...As a skill, it's not very well used here. (Midwife (7), Q18, L1 & Q21, L1)*

Some form of practical training in the technique and subsequent support appeared to be needed. Some midwives and nurses described how they found the cup feeding technique difficult to master:

*I find cup feeding hard because it's something you never did in my day, so that's going back a bit, and I think there's a knack to it that I haven't really got yet. (Nurse (1), Q2, L2)*

*I hate the cup...I just can't do it, I can't get the technique right. (Midwife (17), Q4, L1 & Q5, L1)*

None of the SHOs interviewed appeared to be aware that the cup was a method used to supplement breastfed babies. One SHO revealed a clear lack of interest in the method:

*I've heard of the term cup feeding but I don't actually know what they mean by it. It's just one of those things, you think...you know, who gives a \*\*\*\*! (SHO (2), Q9, L1, Q10, L1)*

## Finger feeding

The majority of midwives and nurses had heard of finger feeding and could describe what it involved. However, only a few had actually used it:

*I tried to use it once and I just couldn't...I gave it a go when I first heard about it, I didn't have a lot of knowledge about it, I was probably doing something completely wrong and I thought it was very clumsy, very you know tricky to set up. (Midwife (3), Q7, L2, Q8, L1)*

*No one has told me how to do it, I've not seen it done. I think it's pretty straight forward. I'd like to know how to do it, I might ask to watch someone. I've heard about it in conversation, but I've not come across it. (Midwife (9), Q7, L1)*

It is possible that midwives lacked practical experience because the technique can be awkward to set up and may require two people:

*It was actually quite difficult to do, with one person doing it, it's impossible, you've got to get the tube into the bottle, and then hold the baby and there were like two of us involved, so, no that doesn't happen very often at all, although I think it might have a place in some instances. (Midwife (13), Q6, L2)*

None of the paediatricians and SHOs had heard of finger feeding as a method of supplementary feeding.

## The supplemental nursing system

The majority of midwives and nurses were aware of what the supplemental nursing system involved and the benefits claimed for it:

*It's used for increasing milk production. If the mum's not producing enough milk, it's great for the baby, it can get a good feed on the breast and you're making sure you're giving the baby adequate fluid, but at the same time because the baby's still on the breast, you're stimulating the breast and increasing the milk production. (Midwife (3), Q11, L1)*

However, few had practical experience in setting it up and using it:

*We don't use the supplemental nursing system very often here, and I think that's because staff don't know about it very much...I don't remember about it, I think if I did I would probably use it a bit more. I think it's mostly ignorance on our behalf. (Midwife from the NBU (13), Q6, L6)*

*I've never seen it in use, I've heard of it being used, but never seen it. I don't know if I'd have the confidence myself to just give it a go. If someone was around to help out, I might though...I know you've got two tubes coming down, but I don't know how you rig it up. I'm not sure how it all works. (Midwife (10), Q16, L1 & Q26, L3)*

Some midwives felt that they needed to be trained to use it:

*I haven't used it because I don't know how to. I would want someone to sit down and show me. I feel you need proper training really, rather than just bodging it. (Midwife (15), Q12, L1)*

*I know vaguely (how to use the device), but I would need full instructions. (Midwife (12), Q10, L1)*

As it was not used by many midwives, ensuring continuity appeared to be a particular problem:

*I've shown quite a few people, I've found that I've had great success with it on an early shift, it's worked well, and I've shown the next person how to use it...Then they'll come on and have their own ideas, and it doesn't get used... It can be a bit frustrating. (Midwife (11), Q9, L1 & Q10, L1)*

*It's also difficult to pass on [the care of a mother using it] to other members of staff because if they don't know what they're doing they might be a bit sort of over awed by it and then not like to use it. (Midwife (5), Q10, L6)*

The majority of paediatricians and SHOs had not heard of the supplemental nursing system.

## Nasogastric and orogastric tubes

All paediatricians and SHOs were aware of nasogastric and orogastric tubes as methods of feeding:

*You can give them breast milk via a nasogastric tube for example, and prevent exhausting them, or whatever, just disrupting them or waking them up or whatever, because they get handled so much that you just want to leave them alone. (SHO (2), Q5, L1)*

The observation revealed that healthcare assistants in the NBU were taught how to tube feed, and sometimes gave assistance with this. On the postnatal ward, however, healthcare assistants did not help with tube feeding and had no such training:

Excerpt 4 from field notes (spring 2002):

*I had a chat with two healthcare assistants today and they told me how they had both learnt to tube feed on the NBU, whereas they did not tube feed on the postnatal ward. They both said they were happy to have more involvement with that side of things.*

## Healthcare professionals' understanding of breastfeeding processes

Healthcare professionals were not specifically asked questions concerning the physiology of lactation but several midwives stated that an understanding of the physiology of breastfeeding plays an important role when considering supplementation. Midwives, nurses and healthcare assistants generally appeared to have a good understanding of the physiology, whereas some other healthcare professionals appeared to demonstrate gaps in their knowledge.

## Midwives, nurses & healthcare assistants

Many of the midwives spontaneously demonstrated how their knowledge of the physiological processes related to breastfeeding underpinned their clinical care:

*What I'm supplementing with is the first thing I'd think about because if the baby is breastfed and Mum's intending to breastfeed, I'd be very loathed to give anything other than breast milk if at all possible, cause otherwise you muck up the physiology and biological balance in the gut, probably for at least a month, and they won't revert to the normal sort of breast milk flora in the gut for a month after you've started giving them formula. It also will introduce something other than what the baby gets from the breast, it may reduce the amount of milk that the mother is able to produce cause you're giving the baby something else, so the demand and supply system is mucked up. (Midwife (5), Q1, L2)*

However, while in general a good level of understanding was demonstrated, there was some cause for concern in two areas:

#### **Length of time for breastfeeding to be 'established'**

Some midwives showed an understanding of the length of time it takes to establish breastfeeding:

*People think they're going to have breastfeeding established in two weeks, when it's not, it takes about six weeks to get the whole thing set up. (Midwife (13), Q13, L7)*

However, others had unrealistic expectations, one even appearing to assume that it could be established in two days:

*If I'm on a night shift with a breastfeeding mum, she's had babies before and the baby [is breastfeeding very well] you get this thing, on day two, night two...the mum is tired and she's crying, keeping the whole ward up, and sometimes...I'll just give it a bottle... I'll do that if breastfeeding's established. (Midwife (8), Q14, L1 & L3 & Q15, L3)*

As discussed in 'Healthcare professionals' knowledge of supplementary feeding methods', a significant number of midwives and nurses considered bottle supplementation to be acceptable once breastfeeding was established. However, if healthcare professionals do not understand how long it takes for a mother to establish breastfeeding, and introduce bottle supplementation in the belief that breastfeeding has actually been established, this could prove detrimental and disruptive to the breastfeeding process.

### **The value of colostrum**

Very little was said by midwives about the value of colostrum. This may be a source of concern as it was also found that mothers did not appear to appreciate its value (see 'Mothers' knowledge of supplementation and breastfeeding processes'). This may simply be because the value had not been explained to them, or perhaps that midwives themselves did not fully appreciate its value. However, there were notable exceptions:

*There's a good amount of calories, and a high lot of antibodies, and it's also got a substance in it, a substance in it to help the baby increase its own blood glucose, using other fuels in the body, it sort of mobilises all those fuels, with the stuff that's in the colostrum, so that helps to maintain its blood glucose.*

(Midwife (5), Q6, L17)

### **Education and training of midwives and nurses**

As outlined in 'Healthcare professionals' knowledge of supplementary feeding methods', midwives and nurses appeared to be more knowledgeable and familiar with some methods of supplementation than others. They need the opportunity to be shown, by a healthcare professional with relevant expertise, how to use any supplementary feeding methods that they may use and are not familiar with.

### **Paediatricians and SHOs**

Lengthy and wide-ranging interviews were conducted with three consultant paediatricians, which provided much valuable and detailed information in relation to supplementation.

Many healthcare professionals spontaneously commented that junior paediatricians and obstetric SHOs often lacked knowledge of the breastfeeding process. This is worrying because SHOs, who later go on to work as GPs, may be the first 'port of call' for postnatal mothers experiencing difficulty after being discharged by the community midwife. Participants also expressed the view that doctors in general are in an influential position, which may lead to parents listening to their advice in preference to the guidance offered by midwives, nurses and health visitors. Parents also find conflicting advice confusing and discouraging. This emphasises the importance of all obstetric and paediatric SHOs having an accurate understanding of the breastfeeding process.

One SHO, when asked about supplementing term babies, replied:

*Obviously in circumstances where mum doesn't want to breastfeed, or mum isn't capable of breastfeeding because her milk's not yet come in, you give it to them [a supplement].* (SHO

(2), Q2, L4)



The consideration that the introduction of supplementary feeding might hamper the stimulation of breast milk production was not mentioned.

The midwives' concerns related to a number of issues:

*I think, on the whole, paediatricians wouldn't be so aware of things like confusion and babies getting used to methods, so they might not be so keen to avoid using a bottle, and wouldn't necessarily see why you shouldn't use a bottle, if it needs some food - give it to them. That's just lack of awareness or understanding about breastfeeding and how it works...Certainly the SHOs, aren't the first people we call'. (Midwife (5), Q13, L4)*

*They're stuffing this baby with the milk, they don't seem to be able to think ahead that actually when it gets used to being stuffed with milk, it's never going to go to the breast because it's not going to. (Midwife (8), Q36, L10).*

The observation also indicated that midwives had concerns about the knowledge levels of SHOs:

Excerpt 3 from field notes (winter 2002):

*Today, one midwife was not happy. It was day three for this baby and the baby was jaundiced, and an SHO wanted to supplement the baby. The midwife was upset and told me that sometimes the SHOs just don't seem to understand the processes involved in breastfeeding, and how jaundice can often be a normal physiological process. She clearly didn't think the baby needed supplementing. She said to me that sometimes SHOs don't see the whole picture.*

A considerable number of midwives expressed the view that SHOs were very relaxed about recommending the use of formula milk. However, the interviews with the SHOs provided no evidence of this.

*Quite often, the doctors will suggest having a formula top up, that I think, is the biggest conflict, and the most difficult one to deal with, because if there's a medical need, there's a medical need. Sometimes it can be due to inexperience, and babies often run slightly dry, in the first few days - I think that's the biggest conflict. (Midwife (11), Q18, L3)*

*The doctors want the babies to grow, so they're putting in extra calories, yet breast milk is designed to make babies grow, in a*

*long-term way, whereas with formula milk, the babies put on the weight, up the scales, whereas breast milk has a slow, gradual, increase, and often that's a conflicting scenario with nurses and doctors. (Midwife (13), Q10, L11)*

There is some evidence within the literature to support these views. Lazzaro et al. (1995) carried out a questionnaire study in the USA, which assessed 151 health professionals' attitudes to breastfeeding. Out of the five groups of health professionals, 96% of the group consisting of physicians (specialising in paediatrics, obstetrics or family practice), and osteopaths and physician assistants, responded that they sometimes recommend formula milk to supplement a breastfed baby. They were significantly more likely to do so than the other groups ( $p < 0.05$ ). The authors noted that the response rate in the study was low (33%) and suggested that the health professionals who responded may have been more supportive of breastfeeding than those who did not. Interpretation of the data is, however, difficult because the infant's age was not specified.

## Education and training of SHOs

The SHOs in this study reported having very limited theoretical input about breastfeeding. The following example illustrates this:

*We certainly had a one hour talk when I was doing my paediatric SHO job, that's the only formal teaching in breastfeeding and supplementing. (SHO (1), Q8, L1)*

In addition, the training that they did remember appeared to have placed more emphasis on the use of formula milk rather than breast milk. One SHO, when asked how much training and education were given, replied:

*Pretty much the same as the rest of my chain which is see one, do one, teach one. It's pretty much on the job. We had a lecture, details of which I can't really remember, in an information overload kind of a way, at the start of our six month stint, about different sorts of formula milks. (SHO (2), Q15, L1)*

The literature indicates that this is a widespread view. A questionnaire study involving 104 obstetricians conducted by Howard et al. (1997) in the USA found that obstetricians believed it was their responsibility to provide infant feeding education to mothers but the majority reported they had not had training in this area (59%) or considered that their training concerning infant nutrition was inadequate (19%).

The potential for interprofessional education was highlighted in this study:

*There is a gap in their knowledge, definitely, and that's not to say they're not receptive about being informed about it, so it's probably because it's never been approached. It's something they're open to, and I know the young doctors that come through, they don't know much about breastfeeding anyway, so there needs to be some sort of cross training really, in that field, definitely. (Midwife (13), Q11, L4)*

## Supplementing when the mother is tired or distressed

### Midwife-led supplementation

Several mothers and midwives described situations where the midwife opened up the topic of supplementation because the mother was tired and not because of a medical indication. The midwives appeared to offer a short-term solution to the mother's tiredness or distress.

Some mothers who were tired or distressed and allowed their babies to have supplementary feeds described a positive experience that gave them some relief and allowed them and their babies to get some much needed sleep.

One mother described how she refused a supplementary feed when a midwife introduced the topic of supplementation at night time. However, because she had now become aware of supplementary feeds as an option, she requested a supplementary feed the following night, which her baby was then given. When asked why she requested a supplementary feed, the mother replied:

*...I only knew about this, because the previous night I was offered a supplementary feed for the baby but I said I didn't want him to have one. He had been breastfeeding continuously for about five hours the night they suggested it, and I was very tired and stressed, but I didn't think he needed it...Until they mentioned it on the previous night I was not aware that it was an option... last night I think subconsciously I [again] didn't want him to have the feed, but I gave in, and just suggested it myself. (Mother (2), Q2, L1 & Q3, L4)*

This was the mother's second child and she was confident that the supplementary feed was a 'one off', and did not request any further ones:

*It was a one off, it helped him at the time, it helped me, it settled the baby, but it really was a one-off...I'm back to breastfeeding, with no difficulties at all. (Mother (2), Q9, L6 & Q10, L1)*

However, some mothers revealed that they had requested repeat supplementary feeds on several occasions after a midwife had suggested the first one. One mother gave the following account of her first request:

*The first one the midwife suggested, as the baby was upset and I was so tired, and he would not settle at all...The second time I asked for it, because he was very hungry, my milk's not come in, he'd been feeding three times in a row for 20 minutes, so I suggested it this morning at 5am. (Mother (4), Q1, L4 & L1)*

The mother also highlighted how she was not concerned as to whether her baby was fed using formula:

*...To be honest I didn't care if he had formula because I was really tired, it was 5am in the morning... (Mother (4), Q3, L2)*

On her next request for a supplementary feed, the mother was dissuaded by her midwife from giving her baby another:

*Well, I did ask for another this afternoon, but the midwife told me that you can't give them supplementary feeds too often because he'll get a lot more hungry, she said it was only really for times when you're really desperate, like I was last night. (Mother (4), Q7, L1)*

Another mother described her reaction to a suggestion by her midwife that her baby may need a supplementary feed:

*As soon as they said that I jumped on to that and later I was so tired I just asked can I just feed him by bottle. I was so knackered I didn't care by then. (Mother (12), Q5, L7)*

This mother was given a choice of using a bottle or syringe but she indicated that her lack of sleep and sore nipples may have affected her decision-making in choosing a method to use:

*The midwife asked whether I minded whether they used a syringe or a teat [bottle], I was so exhausted I said I didn't mind. I had had no sleep, and my chest [nipples] was sore...I was really tired so it was a bit of a relief, and I could get some sleep that way, so it was a good experience for me at the time. (Mother (12), Q4, L1 & Q11, L1)*

However, in this case, initiating the topic of supplementation by the midwife led to the baby being given a bottle feed on this and at least five subsequent occasions. The baby was not supplemented because of a medical indication but because the mother felt tired.

The following quote illustrates that when a midwife suggests a supplementary feed to a mother, especially when a mother is feeling vulnerable or in a state of panic, she is likely to accept the suggestion, but may then later regret it:

*I regretted letting him have the cup feeds, if I'd done my homework better I wouldn't have let him have them. I panicked that he hadn't got enough milk from me...Breastfeeding went slightly backwards after the cup feeds...I opted for it as I was in a panic. (Mother 21, Q7, L1 & Q18, L2 & Q9, L1)*

Several mothers described situations where their babies were supplemented in the evening or at night because they 'were too tired to care'. These examples highlight that once the topic of supplementation has been broached by a midwife because a mother is tired, it is likely to be followed by further maternal requests. What was intended to be one supplementary feed can lead to requests for several more, and supplementary feeds can become an option that a mother begins to rely on. The mother's confidence in her ability to breastfeed, which is known to be an important factor if she is to succeed (Dennis & Faux 1999), may be lost.

On some occasions where a mother has requested a supplementary feed, a midwife may have provoked this request:

*...Sometimes I do hint at it, but I leave it to the mum to say 'do you think a bottle would be a good idea', and I'll say yeah. (Midwife (8), Q20, L7)*

Several midwives were asked whether they would ever suggest a supplementary feed to a mother who was tired. The following accounts were given:

*If I could see the mother was very tired but she didn't ask for a supplement, but her baby was breastfeeding a lot, I'd ask her if she needed any help, and give her plenty of opportunity to ask. If she didn't ask I wouldn't usually bring it up due to allergies and nipple confusion. (Midwife (14), Q10, L1)*

*No, I don't ever suggest it...I would say, you're baby just wants to feed, it's hungry...work on the supply and demand, the more they feed, the more you produce, therefore that's what your baby's trying to do, is up your [supply]. And then I'll leave it up to them. (Midwife (11), Q12, L1)*

One midwife highlighted how important night-feeds are in the process of lactation:

*If a baby's going to do a job, it's to stimulate the mother's lactation, it could just go a little bit backwards, because the baby's not being stimulated during the night, we know that lactation is much better in the early hours of the morning, and if baby's having a bottle feed and the mother's sleeping, the baby's not benefiting and the mother isn't either. (Midwife (13), Q13, L1)*

The handbook *Successful Breastfeeding* (Royal College of Midwives 1991) discusses how milk production continues as efficiently at night as it does in the day, and if the milk is not taken from the breast as it is formed, the volume of milk in the breast will exceed the capacity of the alveoli. The authors refer to the work of Dawson (1935) and suggest that this could then result in engorgement of the breast and the tendency to suppress milk production.

## Mother-led supplementation

One third-time mother (who had not successfully breastfed before) asked for her baby to have a supplementary feed by bottle and discussed how supplementing in this way was an easy solution in times of tiredness and was a method for relieving her anxiety. There was no indication that her midwife tried to deter her from giving a supplementary feed, although the midwife involved had mentioned the cup as an alternative to the bottle:

*If you can't do it [breastfeed] I think sod it, you've tried your best, you know that they'll get fed by the bottle, and if you're tired too, it's a quick solution...He had the bottle to set my mind at rest. He's had a feed [breastfeed] since the bottle. (Mother (7), Q2, L3 & Q4, L1)*

A number of mothers mentioned that their babies were taken away from them over night for several hours so that they could get some sleep:

*Sometimes I think we get so pro-breastfeeding that we forget about the whole kind of psychological thing, so mums just get so wound up about it, and it becomes such a pressure, that they*

*become, you know, it's a real problem. If you can just give them a night's sleep and say, you know 'I'll take your baby'. You know, give them a bottle over night. (Midwife (8), Q20, L1)*

It is possible to suggest that taking a baby away from its mother over night may result in supplementation if the midwives are reluctant to wake the mother. The observation work that was carried out on two nights did not shed any further light on this situation. On these two nights no babies were supplemented or separated from their mothers. However, the interview data indicate that these issues require some consideration.

Several midwives were asked how they would deal with a request for supplementation from a mother who was tired. Many quotes bore witness to the considerable efforts midwives made to support the women:

*It tends to happen at night, when they say 'I've had enough, I can't do this anymore, this isn't for me, it's not working' and it's usually...day two night, just before the milk comes in, and they just, I think they envisage this is how it's going to be forever, so I think it's just saying 'hold on a minute, you're tired, it's night' and explain the reasons why, and sometimes I'll suggest, 'do you want me to calm your baby for a bit, just so you can get a few hours sleep and bring him back?' Sometimes that's enough and they'll say 'yep, that's great', and then that doesn't involve formula. (Midwife (11), Q13, L1)*

*I'd try and talk her out of it. It's a very difficult time for them if they're sleep deprived, but if she wanted some 'kip', I'd suggest cuddling the baby and getting the baby in bed with her for a bit. Or I'd take the baby for a couple of hours, but not supplement it. If she insisted I wouldn't refuse because they are intelligent people and we have to respect their wishes. It makes your heart sink though. (Midwife (15), Q15, L1)*

*If mum was absolutely shattered I would grant her request. If she's very tired it would be cruel to deny her that. After all she'll do what she wants when she gets home anyway. (Midwife (14), Q12, L1)*

## Protecting the mother from distress

On several occasions, midwives appeared to be 'protecting the mother' from any distress with breastfeeding by making remarks that may have provided some short-term relief or comfort. However, sometimes these remarks appeared to encourage or recommend that the mother chose supplementation rather than persist with breastfeeding.

One example was an event described by a mother who had been suffering from sore nipples:

*A midwife put her finger in his mouth and he had such a hard suck, she said even she herself wouldn't breastfeed a baby with that suck. (Mother (6), Q3, L4)*

This event took place the evening before the mother was interviewed and, by the time of the interview, the baby had been given eight bottles and the mother had stopped breastfeeding completely. The midwife may have been concerned because the mother was in pain with her sore nipples, and may have been trying to comfort and reassure her. However, this remark may have contributed towards reducing her confidence in her ability to feed her baby. Centuori et al. (1999), Righard (1998), and Righard and Alade (1992) stressed that mothers with sore or cracked nipples need guidance and support on positioning and latching, and suggest that this is the most effective intervention. It is impossible to determine whether this mother received adequate guidance with positioning and latching, as she made no mention of it in her interview. Also, she felt that she had breastfed for long periods of time:

*Well I wasn't sleeping, not enjoying breastfeeding, he would suck for an hour and a half, or two hours on each side, with an hour between feeds. (Mother (6), Q3, L1)*

## Making it easy to give up

Some midwives felt that it was their responsibility to make it easy for a woman to discuss giving up breastfeeding:

*My gut feeling is that she may well want to bottle feed [rather than breastfeed], and we will discuss this with her when he is due another feed. (Midwife (1), Q1, L16)*

Making it easy for a mother to give up may do more harm than good in the longer-term. Chezem et al. (1997) explored maternal feelings after cessation of breastfeeding. Women who did not feed their babies as they planned to antenatally felt more sadness, depression and guilt compared with women who achieved their planned method of feeding. Similarly, Mazingo et al. (2000) in their phenomenological study (see 'Mothers' knowledge of supplementation and breastfeeding processes') argued that healthcare professionals need to understand that women who stop breastfeeding early on, may feel guilty some considerable time later.

In the view of at least one midwife (Clarke 1995) midwives have a moral responsibility to ensure that the baby is positioned correctly at the breast



and that the mother learns for herself how to do this. The author expressed the view 'that when mothers give up breastfeeding they often tell people that they could not do it, that they had sore nipples, or that they had insufficient milk'. If these mothers believe themselves to be failures, they must surely experience considerable damage to their self-esteem. The author suggested that it is the midwives who have failed the mothers, and not the mothers who have failed. This may seem a harsh view but it cannot be denied that a midwife's role is to ensure that a baby is correctly latched on to a mother's breast, and this is the fundamental skill that should be focused on.

### Protecting the mother from feelings of guilt

On occasions, midwives attempted to avoid inducing feelings of guilt in mothers and so, for example, did not always warn mothers about the negative effects that supplementation might have on breastfeeding. Providing mothers with this information might magnify their feelings of guilt if they decide to supplement as the following excerpt illustrates:

Excerpt 16 from field notes (summer 2002):

*Over the past week I noticed that a couple of midwives did not discuss the disadvantages of supplementation with all mothers. The two mothers who were involved seemed to be quite emotional so perhaps the midwives didn't want to add to their distress by informing them about the negative effects supplementation might have on breastfeeding, particularly if the mother wanted her baby to be supplemented. I think they were also short staffed that week and they may have been so busy that they didn't have much time to spare.*

One healthcare professional showed an awareness of the potential for mothers to experience feelings of guilt about breastfeeding decisions and also referred to her own personal experience of supplementing by bottle:

*Sometimes people want to stop breastfeeding, but they need to be told there's a medical reason for it. It then gives them an excuse to stop, and that's fine, it takes away some of the guilt...I must admit...I felt guilty as sin going out and buying artificial teats [to supplement with]. I felt awful. (Healthcare professional discussing personal experience of own baby (2), Q7, L3)*

Protecting the mother from feelings of guilt appeared to be closely related to protecting the mother from tiredness and distress. Midwives appeared to have an underlying belief that mothers who breastfeed are under a considerable amount of pressure and therefore felt they should not add to this, and must try to protect them from any potential feelings of guilt about

deciding to supplement or giving up breastfeeding. Supplementation was considered by some midwives as 'fair' or 'a mother's right', and to deny a mother of this option was 'cruel'.

*Sometimes I think we get so pro-breastfeeding that we forget about the whole kind of psychological thing, so mums just get so wound up about it, and it becomes such a pressure, that they become, you know, it's a real problem. If you can just give them a night's sleep and say, you know 'I'll take your baby'. You know, give them a bottle over night. (Midwife (8), Q20, L1)*

It appeared that, at times, supplementation was made more accessible to mothers because some of the midwives did not want to 'over-promote' breastfeeding as they considered that this could make mothers feel pressurised to continue. Furthermore, if a mother decided to supplement because she was tired, it is possible that the disadvantages would not always be explained because this could contribute to a mother's guilt about her decision. Because not every mother appeared to be given the disadvantages of supplementation, it could be argued that they were therefore not always able to make an informed decision. It is possible that if some of the mothers were given this information they may have decided not to supplement.

Although the mothers were not directly asked whether they were aware of the disadvantages of supplementation, no mothers spontaneously mentioned the disadvantages of supplementation in general. Instead, they tended only to refer to how the bottle could cause 'nipple-teat' confusion, and did not seem aware that supplementation in general could cause subsequent difficulties.

However, one midwife felt it was 'cruel' to deny a mother the option of a supplementary feed, but stressed the importance of ensuring the mother's awareness of the possible disadvantages of supplementation:

*I think it's cruel in some ways to deny a mum the opportunity of a supplementary feed if that's what she wants and she's aware of the disadvantages of doing so. I think sometimes one bottle would be a sanity for the rest of a breastfeeding career. (Midwife (3), Q18, L9)*

Even a midwife who said that she would never suggest a supplement to a tired mother indicated that this caused her some distress:

*No, never. That sounds really cruel doesn't it? I definitely wouldn't bring the topic up. I do feel a bit mean though.* (Midwife (15), Q8, L1)

Barrowclough (1997), a midwife, expressed the view that midwives will readily encourage a woman through labour (when for example, she says she wants to give up and have intervention to deliver the baby) but view their role differently when encouraging a woman to continue breastfeeding. Midwives, in an attempt to establish their role as independent practitioners, might have focused on being 'with woman', as opposed to their responsibility to promote breastfeeding and long-term health. In their concern for the immediate psychological health of mothers, midwives may lose sight of the consequences supplementation may have on long-term health. At times, it appeared that midwives felt they had a primary duty to mothers to make the postnatal stay as enjoyable as possible, and therefore did not want to 'over-promote' breastfeeding and make mothers feel guilty if they did decide to give their baby a supplement, or give up breastfeeding.

Protecting the mother from feelings of guilt has been previously referred to in the literature. Healthcare professionals are, at times, reluctant to discuss the health benefits of breastfeeding and encourage it because of concerns about making women feel guilty if they fail (Beeken, 1990). It has been suggested that doctors advise their patients about the importance of eating healthily and exercising regularly, avoiding alcohol and smoking, without any concern for the guilt they might create because of the importance of the issue (Lawrence, 1999). The promotion of breastfeeding has an equally important impact. Midwives are indeed there to provide emotional support to the mother but, at the same time, have a duty to promote breastfeeding and longer-term health. Smale (1998) suggested that such reluctance to promote breastfeeding because of concern for making mothers feel guilty requires exploration.

## RECOMMENDATIONS

### Clinical practice recommendations

1. Unless required for medical reasons, careful thought should be given before supplementation is discussed with mothers. It may be perceived that the midwife is giving a recommendation. Supplementation should always be considered as an intervention.
2. A policy is needed to determine which method of supplementation to suggest in which situation. This may serve to lessen the likelihood of mothers receiving conflicting advice.
3. Each time a supplementary feed is given, the reason for it should be recorded.
4. The method by which a supplement is given, and the reason for using that particular method should be recorded. The reason for any subsequent change in methods should also be recorded.
5. Mothers should always give consent for their baby to have a supplementary feed and should, as far as possible, have the opportunity to be involved in such decision-making. They should also have the opportunity to be involved in the decision about which method of supplementation is to be used.
6. A full discussion about the possible advantages and disadvantages of supplementation must take place with mothers, and also about the method to be used.
7. Mothers benefit from being given a full explanation of why their baby needs a supplementary feed and for how long such feeds are likely to be needed. They should also be regularly updated.
8. Mothers who have successfully breastfed before may need special support as supplementation may shake their confidence in their ability to do so again.
9. All equipment required for supplementary feeding should be readily available, including any sterilised equipment. Consideration should be given to the provision of cups by the sterile supplies system, where appropriate.

10. If a baby is likely to need long-term supplementation, the mother (and possibly other adult family members) should be offered the opportunity to be taught how to use the method concerned. This is most likely to be the case on the NBU. Where, however, it is intended that the supplementation should be of short-term duration, consideration needs to be given as to whether teaching the mother this skill may make her think she will need it in the longer-term. This may perhaps become a self-fulfilling prophecy.

11. Mothers whose babies are being tube fed on the postnatal wards appear to find this particularly distressing and it should probably be avoided if at all possible.

12. Mothers' anxieties about feeding tubes may increase if their babies are transferred from the NBU to the postnatal ward with one in situ. Additional support is required.

13. Close and regular liaison between the NBU and postnatal ward is essential.

14. Mothers need to be provided with accurate information about the physiology and processes of breastfeeding. It is especially important that mothers who perceive themselves as having insufficient milk, or are concerned about their babies' frequent feeding, are made aware of the supply and demand nature of breastfeeding.

15. Mothers need to be informed of the value of colostrum.

16. It is essential that sufficient support and guidance are given to mothers, particularly with early breastfeeds. It is therefore important that healthcare professionals are enabled to have enough time for this activity. The mother's confidence in her ability to breastfeed her baby should be encouraged at all times.

17. Ways should be considered to provide healthcare professionals with information about the longer-term feeding outcome for mothers who have had their breastfed baby supplemented. Healthcare professionals expend much energy in providing support to these women and such feedback might increase the satisfaction they derive from this.

18. It is essential that all healthcare professionals have accurate knowledge about the physiology of breastfeeding.

19. Healthcare professionals must receive both practical and theoretical education in relation to any method of supplementation that they are expected to use. Ongoing support and updating also need to be given.

20. Interprofessional education for midwives, nurses on the newborn unit, healthcare assistants and SHOs seems highly desirable.

## Recommendations for Future Research

1. This study highlights the need for a randomised controlled trial to determine the relative efficacy of the wide variety of methods used to give supplementary feeds. Term and pre-term babies should not be considered as comparable groups. Long-term follow up postnatally would be important.

2. An exploration of the experience of, attitudes towards, and the decision-making processes surrounding supplementation for women of non-Caucasian origin is desirable.

3. There would be considerable advantage in increasing the detail concerning supplementation in hospital that is collected by the triennial UK Infant Feeding Survey. Currently, it only asks whether a breastfed baby was given any milk (apart from expressed breast milk) by bottle and how often it was given. Detail concerning other methods of supplementation certainly seems desirable.

4. The work of Dowling et al. (2002) concerning the mechanics and safety of cup feeding in pre-term babies should be replicated in term babies.

## REFERENCES

- AAMODT, A.M. (1982). Examining ethnography for nurse researchers. *Western Journal of Nursing Research*, 4, 209-221.
- BAILLIE, L. (1995). Ethnography and nursing research: a critical appraisal. *Nurse Researcher*, 3, (2), 5-22.
- BARROWCLOUGH, J. (1997). The practice of promoting breastfeeding. *Midwives*, 110, (1319), 292-294.
- BEEKEN, S. (1990). An evaluation of professionals' attitudes and practices concerning breastfeeding. Undergraduate dissertation, University of Newcastle upon Tyne. Cited in: Smale, M. (1998) Working with breastfeeding mothers: the psychosocial context. In: Clement, S. (ed.) *Psychological Perspectives on Pregnancy and Childbirth*. Churchill Livingstone, Edinburgh: Chapter 10, 183-204.
- BIANCUZZO, M. (1999). *Breastfeeding the newborn. Clinical strategies for nurses*. Mosby, Missouri, USA.
- BLUFF, R., HOLLOWAY, I. (1994). 'They know best': women's perceptions of midwifery care during labour and childbirth. *Midwifery*, 10, 157-164.
- BOWLER, I.M. (1993). Stereotypes of women of Asian descent in midwifery practice: some evidence. *Midwifery*, 9, (1), 7-16.
- BREWER, J.D (2000). *Ethnography*. Open University Press, Buckingham.
- BROWN, S.J., ALEXANDER, J.M, THOMAS, P. (1999). Feeding outcome in breastfed term babies supplemented by cup or bottle. *Midwifery*, 15, 92-96.
- BURDEN, B. (1998). Privacy or help? The use of curtain positioning strategies within the maternity ward environment as a means of achieving and maintaining privacy, or as a form of signalling to peers and professionals in an attempt to seek information or support. *Journal of Advanced Nursing*, 27, (1), 15-23.

CENTUORI, S., BURMAZ, T., RONFANI, L., FRAGIACOMO, M., QUINTERO, S., PAVAN, C., DAVANZO, R., CATTANEO, A. (1999). Nipple Care, Sore Nipples and Breastfeeding: A Randomised Trial. *Journal of Human Lactation*, 15 (2), 125-130.

CHEZEM, J., MONTGOMERY, O., FORTMAN, T. (1997). Maternal feelings after cessation of breastfeeding: influence of factors related to employment and duration. *Journal of Perinatal and Neonatal Nursing*, 11, (2), 61-70.

CHRISTMAS, J. (1995). Cup-feeding: an alternative for mothers and babies. *British Journal of Midwifery*, 3, (8), 434-436.

CLARKE, R. (1995). Ethics and midwifery practice. *Midwives*, 108 (1292), 300-301.

DAWSON E.K. (1935). Feeding the baby at night. *Edinburgh Medical Journal*, 42, 569.

DENNIS, C.L., FAUX, S. (1999). Development and psychometric assessment of the breastfeeding efficacy scale. *Research in Nursing and Health*, 22, (5), 399-409.

DIVISION OF CHILD HEALTH AND DEVELOPMENT (1998). *Evidence for the ten steps to successful breastfeeding*. World Health Organisation, Geneva.

DOWLING, D.A., MEIER, P.P., DIFIORE, J.M., BLATZ, M., MARTIN, R.J. (2002). Cup-feeding for pre-term infants: mechanics and safety. *Journal of Human Lactation*, 18, (1), 13-20.

DYKES, F., WILLIAMS, C. (1999). Falling by the wayside: a phenomenological explanation of perceived breast milk inadequacy in lactating women. *Midwifery*, 15, 232-246.

EDGEHOUSE, L., RADZYMINSKI, S.G. (1990). A device for supplementing breastfeeding. *Maternal Child Nursing*, 15, 34-35.

FIELDING, N. (1993). 'Ethnography'. In: Gilbert, N. (ed.) *Researching Social Life*. Routledge, London, pp. 154-172.

FISHER, C., INCH, S. (1996). Nipple confusion – who is confused? *Journal of Pediatrics*, 126, 174-175.



FOSTER, K., LADER, D., CHEESBROUGH, S. (1997). *Infant Feeding 1995*. Social Survey Division of the Office for National Statistics, The Stationery Office, London.

FREER, Y. (1999). A comparison of breast and cup feeding in pre-term infants: effect on physiological parameters. *Journal of Neonatal Nursing*, 5, (1), 16-21.

GICHIA, J.E. (2000). Mothers and others. African-American women's preparation for motherhood. *The American Journal of Maternal Child Nursing*, 25, (2), 86-91.

GLASER, B.G., STRAUSS, A.L. (1967). *The Discovery Of Grounded Theory*. Aldine, Chicago.

GOLD, R.L. (1958). Roles in Sociological Fieldwork. *Social Forces*, 36, 217-23.

GREEN, J.M., COUPLAND, V.A., KITZINGER, J.V. (1998) Great expectations: a prospective study of women's expectations and experiences of childbirth. Childcare and Development Group, University of Cambridge, Cambridge.

HAMLYN, B., BROOKER, S., OLENIKOVA, K., WANDS, S. (2002). *Infant Feeding 2000*, The Stationery Office, London.

HAMMERSLEY, M., ATKINSON, P. (1995). *Ethnography: Principles in Practice*. Second Edition. Tavistock, London.

HANNON, P.R., WILLIS, S.K., BISHOP-TOWNSEND, V., MARTINEZ, I.M., SCRIMSHAW, S.C. (2000). African-American and Latina adolescent mothers' infant feeding decisions and breastfeeding practices: a qualitative study. *Journal of Adolescent Health*, 26, (6), 399-407.

HARRISON, L., CAMERON-TRAUB, E. (1994). Patient perspectives on nursing in hospital. In: Waddlee, C., & Peterson, A.R. (eds.) *Just Health: Inequality in Illness, Care and Prevention*. Churchill Livingstone, Melbourne.

HENDERSON, C. (1984). Influences and interactions surrounding the decision to rupture the membranes by the midwife. *Unpublished MA dissertation*, University of Warwick.

HILL, P. (1992). Insufficient milk supply syndrome. *NAACOG's Clinical Issues in Perinatal and Women's Health Nursing: Breastfeeding*, 3, (4), 605-612.

HILTON, A. (1987). The ethnographic perspective. *Research Awareness Open Learning Programme Module 7*. London, South Bank Polytechnic Open Learning Centre.

HOLLOWAY, I. (1997). *Basic Concepts for Qualitative Research*. Oxford, Blackwell Science Ltd.

HOWARD, C., SCHAFFER, S.J., LAWRENCE, R.A. (1997). Attitudes, Practices and Recommendations by Obstetricians About Infant Feeding. *Birth*, 24, (4), 240-270.

HOWIE, P.W., FORSYTH, J.S., OGSTON, S.A., CLARK, A., FLOREY, C.D. (1990). Protective effect of breastfeeding against infection. *British Medical Journal*, 300, 11-16.

HUGHES, C.C. (1992). Ethnography: what's in a word – process? product? promise? *Qualitative Health Research*, 2, 439-450

JONES, E. (1994). Breastfeeding in the pre-term infant. *Modern Midwife* 4, (1), 22-26.

JUNKER, B. (1960). *Field Work*, Chicago, University of Chicago Press.

KUROKAWA, J. (1994). Finger feeding a preemie. *Midwifery Today and Childbirth Education*. 29, 39.

LANG, S. (1994). Cup feeding: an alternative method. *Midwives Chronicle and Nursing*, 107, (1276), 171-176.

LANG, S., LAWRENCE, C.J., L'E ORME, R. (1994). Cup feeding: an alternative method of infant feeding. *Archives of Disease in Childhood* 71, 365-369.

LAWRENCE, R.A. (1999). *Breastfeeding. A Guide For The Medical Profession*. Fifth Edition. Mosby, Missouri, USA.

LAZZARO, E., ANDERSON, J., AULD, G. (1995). Medical Professionals' Attitudes Toward Breastfeeding. *Journal of Human Lactation*, 11, (2), 97-101.

LEININGER, M.M. (1987). Importance and uses of ethnomethods, ethnography, and ethnonursing research. In: Cahoon, M.C. (ed.). *Recent Advances in Nursing: Research Methodology*. Churchill Livingstone, Edinburgh.

LOTHIAN, J.A. (1995). It takes two to breastfeed: the baby's role in successful breastfeeding. *Journal of Nurse-Midwifery*, 40, (4), 328-334.

MACHIN, D., SCAMELL, M. (1997). The experience of labour: using ethnography to explore the irresistible nature of the bio-medical metaphor during labour. *Midwifery*, 13, (2), 78-84.

MARTIN, J., WHITE, A. (1988). *Infant Feeding 1985*. HMSO, London.

MAYS, N., POPE C. (1995). Observational methods in healthcare settings. *British Medical Journal*, 311, 182-184.

MCCORMACK, B. (1993). How to promote quality of care and preserve patient autonomy. *British Journal Of Nursing*, 2, (6), 338-41.

MOODY, J. (1993). A revolution in baby feeding. *Midwifery Digest*. 3, (4), 450-451.

MOORE, W. (1996). And how are we feeling today? *Health Service Journal*, 28, 28.

MOSLEY, C., WHITTLE, C., HICKS., C. (2001). A pilot study to assess the viability of a randomised controlled trial of methods of supplementary feeding of breast-fed pre-term babies. *Midwifery*, 17, (2), 150-157.

MOZINGO, J.N., DAVIS, M.W., DROPPLEMAN, P.G., MERIDETH, A. (2000). Women's experiences with short-term breastfeeding. *Maternal Child Nursing*, 25, (3), 120- 127.

POPAY, J., WILLIAMS, G. (1994). *Researching the People's Health*. Routledge, London.

REID, B. (1991). Developing and documenting a qualitative methodology. *Journal of Advanced Nursing*, 16, 544-551.

RIGHARD, L. (1998). Are breastfeeding problems related to incorrect breastfeeding technique and the use of pacifiers and bottles? *Birth*, 25, 40-44.

RIGHARD, L., ALADE, M.O. (1992). Sucking technique and its effect on success of breastfeeding. *Birth*, 19, (4), 185-189.

RIORDAN, J., AUERBACH, K.G. (1993). *Breastfeeding and Human Lactation*. Chapter 1 'Slow weight gain and failure to thrive'. Jones and Bartlett Publishers International, Boston.

RIORDAN, J., AUERBACH, K.G. (1996). *Pocket Guide to Breastfeeding and Human Lactation*. Jones and Bartlett Publishers International, London.

ROSSITER, J.C. (1998). Promoting breastfeeding: the perceptions of Vietnamese mothers in Sydney, Australia. *Journal of Advanced Nursing*, 28, (3), 598-605.

ROYAL COLLEGE OF MIDWIVES (1991). *Successful Breastfeeding. Second Edition*. Churchill Livingstone, Edinburgh, pp30-31.

SAARINEN, U.M., KAJOSAARI, M. (1995). Breastfeeding as prophylaxis against atopic disease: prospective follow-up study until 17 years old. *The Lancet*, 346, 1065-1069.

SAMUEL, P. (1998). Cup feeding - how and when to use it with term babies. *The Practising Midwife*, 1, 12, 33-35.

SCHUBIGER, G., SCHWARZ, U., TONZ, O. (1997). UNICEF/WHO baby-friendly hospital initiative: does the use of bottles and pacifiers in the neonatal nursery prevent successful breastfeeding? *European Journal of Pediatrics*, 156, 874-877. Cited in Renfrew, M., Woolridge, M., McGill, H. (2000). *Enabling women to breastfeed - a review of practices which promote or inhibit breastfeeding with evidence based guidelines for practice*. The Stationary Office, London.

SIDERFIN, A. (2002) Midwifery Sister with specialist infant feeding role, Salisbury NHS Trust. *Personal Communication*.

SMALE, M. (1998). Working with breastfeeding mothers: the psychosocial context. In: Clement, S. (ed.) *Psychological Perspectives on Pregnancy and Childbirth*. Churchill Livingstone, Edinburgh: Chapter 10, pp183-204.

STERN, P.N. (1994). Eroding Grounded Theory. In J.M. Morse (ed.). *Critical Issues in Qualitative Research Methods*. Newbury Park, CA: Sage, pp212-223.

THORLEY, V. (1997). Cup feeding: problems created by incorrect use. *Journal of Human Lactation*, 13, 1, 54-55.

TUCKETT, D., BOULTON, M., OLSON, C., WILLIAMS, A. (1987). *An approach to sharing ideas in medical consultation meetings between experts*. Tavistock, London.

VICTORIA, C.G., BEHAGUE, D.P., BARROS, F.C., OLINTO, M.T., WEIDERPASS, E. (1997). Pacifier use and short breastfeeding duration: cause, consequence, or coincidence? *Pediatrics*, 99, (3), 445-453.

WHITE, A., FREETH, S., O'BRIEN, M. (1992). *Infant Feeding 1990*. HMSO, London.

WICKHAM, J. (1995). Cup feeding. *New Zealand College of Midwives Journal*, 13, 22-23.

WILSON-CLAY, B., HOOVER, K. (1999). *The Breastfeeding Atlas*. LactNews Press, Texas, USA.

## APPENDIX A

### Introduction to the Ethnographic Approach

#### The ethnographic approach

Ethnography focuses on understanding the perspective of the people under study and observing their activities in everyday life. Fielding (1993) defined 'ethnography as the study of behaviour in natural settings'. Hammersley and Atkinson (1995) considered ethnography to involve the researcher participating in people's daily lives for an extended period of time, watching what happens, listening to what is said, asking questions and collecting data to throw light on the issues that are the focus of the research. According to Baillie (1995), ethnographers believe that human behaviour can best be understood within the context in which it occurs, as it is assumed that a person's behaviours is linked to the meaning that a situation has for them. Ethnography involves the researcher becoming culturally sensitive and in a position to identify the social influences on the individual and group being studied. Holloway (1997) has discussed how ethnography can be used to improve or inform practice.

#### Data collection methods

Informal and formal interviewing and observation are the key data collection methods used in ethnography, although researchers may also rely on the analysis of documents such as diaries, patient notes, records and charts. In addition, Fielding (1993) has recommended that effort to 'think' oneself into the perspective of the members within the culture assists in making sense of the experience.

#### Observation

Junker (1960) and Gold (1958) distinguished between the 'complete participant', 'participant-as-observer', 'observer-as-participant', and 'complete observer'. In the 'complete participant' role the ethnographer's activities are wholly concealed, and the researcher acts as an ordinary member of the group but with the purpose of conducting research. This may occur when the researcher is already a member of the group that he or she decides to study. The 'complete observer' has no contact at all with those he or she is observing. Hammersley and Atkinson (1995) discussed how complete observation shares many of the advantages and disadvantages of complete participation. Both roles may limit the questioning of participants, as well as what can be observed. Hammersley and Atkinson (1995) have discussed that decisions about the sort of role to adopt in a setting will depend on the purposes of the research and the nature and setting, although most field research tends to lie somewhere between these two roles. According to Fielding (1993), the known observer (i.e. 'participant as observer' or 'observer as

participant') is able to move about the setting more freely, to ask questions which are clearly research related and to withdraw when they want to write notes. However, the role may still present problems, for example, when people know research is taking place they will be keen to discover whether the researcher is investigating on behalf of the organisation within which they work. Fielding (1993) discussed how difficulties may arise when research is being carried out specifically for the organisation, or is related to the internal divisions of the organisation in which the study is taking place.

## Interviewing

The researcher will observe participants, their actions and the ways in which they interact with each other, but also interview members of the culture or group to gain their interpretations (Holloway 1997). Interviews are a very important source of data and may allow the researcher to gather information that may otherwise be difficult to obtain – including events observed and participants' perspectives. There are advantages in combining participant observation with interviews because the data from each can be used to complement and inform the other. What people reveal in interviews may lead the observer to understand differently what is seen in observation, and what one sees as an observer can have an important effect on how one interprets what people say in interviews. Interviews may range from being spontaneous, informal conversations, to being formally arranged (Hammersley & Atkinson 1995), and often relate back to the ethnographer's observation notes. Researchers may not understand what they observe and can ask members within the culture to explain it to them. Participants can then reveal their interpretations of events, rules and roles to the interviewer.

As the focus in ethnography is on quality data, an important concept is the key informant (Baillie 1995). Key informants are chosen for their knowledge, insight, and willingness to talk about the situation. They may supply much of the information required or complement data gathered by observation. While recognising the value of interviewing people with knowledge and insight, it is important to note that informants chosen for their enthusiasm for the research may have their own motivation for agreeing to be interviewed. They may wish to influence the researcher in some way, or draw attention to specific problems in the setting. Interviewing is reliant on the honesty of participants, and the researcher has to believe that the information provided is accurate. Individuals who are especially sensitive to the area of concern may also be chosen as key informants. Ethnographers usually interview a range of people, but some people may need to be interviewed more than once, for example, when the checking of previously supplied information is required, or to acquire further information. Key informants in the current study included

individuals with particular expertise in relation to supplementation who appeared to play a central role in the culture. This included the lactation consultant on the postnatal ward and the senior sister on the NBU.

### **Difficulties in using ethnography**

There are several difficulties which may be encountered for researchers using ethnography. The researcher's presence as an observer will inevitably affect the social situation (Hilton 1987). This could lead to a disruption in client care, or healthcare professionals feeling their practice is being judged or evaluated. This problem may be overcome in part by the researcher spending time in the study area prior to formal data collection (Baillie 1995). Reid (1991) for example, spent the first two months in the field observing and introducing herself. Hammersley and Atkinson (1995) also discussed that interviewing people with whom one has already established a relationship, through participant observation, has the advantage of requiring little further work to build rapport.

A further difficulty the ethnographer may encounter is how to record field notes. Writing while observing may upset the observation process, but notes do need to be written soon after observation to allow accurate recording (Baillie 1995).

The observer may also experience role conflict when conducting ethnography. Hammersley and Atkinson (1995) suggested that being seen as a nurse or midwife researcher may lead to difficulty in asking apparently naive questions. They discussed how conflict may occur if incorrect practice is noticed, and the midwife researcher must consider how to respond to such a situation. Furthermore, the midwife researcher may experience guilt at 'observing' rather than 'doing', particularly if the area is short of staff, or very busy. Hammersley and Atkinson (1995) claim that ethnography involves living simultaneously in two worlds – that of the researcher, and that of participant. They noted that if the ethnographer feels too much at ease, it must be questioned whether the researcher has become too complaisant, and is not approaching difficult or appropriate subjects.

### **Ethical issues surrounding ethnography**

There are a number of ethical issues that must be considered in ethnographic research. Mothers on a maternity ward can be vulnerable to exploitation. The researcher who is observing or interviewing mothers must obtain their consent and must ensure that their presence does not affect the quality of care. Mothers may feel obliged to give their consent to taking part in the research, and may take part even though they do not wish to. Mothers must therefore be informed that their participation is



voluntary and will not affect their standard of care. Baillie (1995) has suggested that obtaining 'informed' consent is often problematic due to the exploratory nature of qualitative research; participants cannot always be fully informed at the beginning because what the research will uncover is not always known. Hilton (1987) discussed how ethnographers often have to exploit relationships for a purpose that cannot be fully revealed to informants. Holloway (1997) argued that participants' anonymity could be at risk due to the detailed description of the research process, the data, and the sample, but must be safeguarded.

### **Use of ethnography in midwifery research**

Ethnography has been used by researchers working within the maternity setting, with research topics ranging from women's preparation for motherhood (Gichia 2000), to the experience of labour (Machin & Scamell 1997). A study by Burden (1998) was carried out after midwives on a maternity ward had noted that interactions between women within the ward had started to decrease, and women were spending long periods of time behind curtains drawn around their bed space. An ethnographic approach was used incorporating the use of documentary evidence, participant observation, field maps and field notes. The findings of the study centred around the use of curtain positioning, subsequently referred to as 'signalling'. The strategies employed by women included complete closure of curtains for total withdrawal, semi-closure for seeking support or information, and partial closure for periods of solitude or rest. The author discussed how these findings have implications for both general and maternity hospital wards but, in particular, wards shared by women in labour and ante or postnatal women, and postnatal wards where there are both breast and bottle feeding women.

Bowler (1993) investigated the delivery of maternity care to women of Asian descent in Britain. The main method of data collection was non-participant observation, which took place in antenatal clinics, labour and postnatal wards in a teaching hospital maternity unit. The observations were supported by data from interviews with midwives. It was found that midwives commonly used stereotypes of women in order to help them provide care. The stereotype of women of Asian descent involved four main themes: communication problems, failure to comply with care and service abuse, making a fuss about nothing, and a lack of normal maternal instincts. The authors subsequently highlighted the effects these findings may have on service provision in the areas of family planning and breastfeeding.

Ethnographic studies have also looked more specifically at breastfeeding and infant feeding decisions. Rossiter (1998) used the ethnographic

approach to explore the experiences of Vietnamese mothers in Sydney concerning infant feeding and the attributes of nurses, midwives, other healthcare professionals and the healthcare system that were considered important in encouraging these women to breastfeed. The findings highlighted the significance of social, cultural and economic factors which influenced the women's decisions and continuance of breastfeeding. A study by Hannon et al. (2000) involved African-American mothers' perceptions of breastfeeding and the influences on infant feeding choices. This ethnographic study identified that women's perceptions of the benefits and the problems associated with breastfeeding influenced infant feeding decisions as well as the influence of significant others, such as the women's mothers or midwives involved in their care.

Victoria et al. (1997) carried out an epidemiological and ethnographic study in southern Brazil to look at the complex relations between pacifier use and breastfeeding duration. The ethnographic analysis showed that pacifier use was widely regarded as a positive behaviour and that mothers often strongly stimulated the infants to accept one. Although few mothers openly admitted that pacifiers might shorten breastfeeding, a significant number effectively used pacifiers to get their infants off the breast or to increase the interval between feedings. This group also had rigid breastfeeding styles that increased maternal-infant distance, had low self confidence, had important concerns about rapid growth and mechanical development of their child, were highly sensitive to infant crying and tended to compare themselves unfavourably to other mothers. The epidemiological analysis confirmed that pacifier use was more closely associated with breastfeeding duration among non-white mothers and for vaginally delivered infants. The authors concluded by recommending that breastfeeding promotion campaigns aimed specifically at reducing pacifier use would fail, and should provide support for women facing the challenges of nursing and address their anxieties.

Ethnography has been used widely in nursing research, and in a variety of settings, and Hughes (1992) identified adaptability as a characteristic of the ethnographic approach. Aamodt (1982) suggested that complex human responses such as nurse-patient interactions can only be studied appropriately through ethnography. The ethnographic approach results in the collection of in-depth data, providing detailed accounts of healthcare related phenomena or experiences within the context in which it occurs. Leininger (1987) has considered other methodologies to be insufficiently detailed to effectively influence professional care decisions. The author considered that detailed and descriptive accounts derived from ethnography form a sound base for developing nursing theory. We suggest that this is true of midwifery also.

## APPENDIX B

### Description of Methods of Supplementation

(As used in the maternity unit concerned)

#### Syringe

(Biancuzzo 1999; Siderfin 2002)

A regular syringe ranging from 2ml to 10ml can be filled with formula milk or expressed breast milk, then squirted slowly and gently into the newborn's mouth. An appropriate sized syringe should be used to accommodate the amount of milk that the newborn is expected or required to consume. For example, a pre-term infant may consume only a few millilitres of colostrum, so a 2ml syringe would work well. The care-giver is in control of this method of feeding, however, and must be cautious not to overwhelm the infant with too great a volume.

#### Finger Feeding

(Biancuzzo 1999; Siderfin 2002)

Finger feeding is a method in which the mother or midwife allows the infant to suck on a finger while food is being delivered. It can be accomplished using a feeding tube and a syringe.

Finger feeding involves taping a feeding tube to the middle finger of the care-giver's hand and inserting it into the infant's mouth, pad side up towards the infant's palate. The feeding tube is then attached to a syringe (with the plunger removed). The syringe is then filled with breast milk or formula and, as the baby sucks, it will be rewarded with every suck. The infant should not exert suction on the tube; the idea is to have a troughed tongue like breastfeeding. (If the infant does not first lower and then trough his tongue, slight downward pressure on the posterior part of the tongue is applied, then released.)

If preferred, it is also possible for the care-giver to control the rate at which the feed is delivered, by leaving the plunger in the attached syringe, and gently delivering about 0.5ml of milk for the infant to swallow at every third suck.

#### Cup Feeding

(description developed from a leaflet produced by Ameda)

The cup can be used by parents who primarily wish their baby to be breastfed, but who occasionally need an alternative method of feeding. It is most successful when the baby is awake and interested. Expressed breast milk is the ideal milk to use but formula milk may also be given.

##### **How to cup feed**

- The method of cup feeding is the same for any baby.
- Wrap the baby securely, to prevent its hands knocking the cup, and place a napkin under its chin.
- Support the baby in an upright position on your lap, so that you are

both comfortable.

- Have the cup at least half full (if possible).
- The cup should be tipped so the milk is just touching the baby's lips. It should NOT be poured into the baby's mouth.
- Direct the rim of the cup towards the corners of the upper lips and gums, with it gently touching/resting on the lower lip. Do not apply pressure to the lower lip.
- Leave the cup in the correct position during the feed. Do not keep removing it when the baby stops drinking. It is important to let the baby take as much as it needs in its own time.

### **The baby with special needs**

*General reasons for its use:*

- To provide a positive oral experience for the baby.
- To provide an alternative method of feeding when the mother is not able to breastfeed her baby.
- To avoid nipple/teat confusion, which can arise from the early and inappropriate introduction of bottles.
- To reduce the need for nasogastric or orogastric tubes.

*Advantages:*

- The baby paces its own intake in time and quantity.
- It requires little energy expenditure.
- It stimulates the suck and swallow responses.
- It stimulates saliva, lingual lipases and more efficient digestion of the milk.
- It stimulates tongue and jaw movements.
- Less fat is lost with a cup than via gastric tubes.
- Very easy to maintain eye contact, the baby is held close for the feed.

### **The pre-term baby**

A cup can be used to feed a baby from 32 weeks gestation. A cup may be appropriate when:

- A pre-term baby is wide awake and restless at feed times.
- Shows signs of wanting to suck.
- Is not satisfied by gastric tube feeds.
- A baby is not yet able to feed directly from the breast, or has only enough energy to satisfy part of its total nutritional needs at the breast.

The majority of pre-term babies receive their milk via nasal or oral gastric tubes. Cup feeding may be commenced when 2-3 hourly bolus tube feeds are required.

When the baby is initially being introduced to the breast, an occasional

cup feed may be given if supplementation is required. It may be a useful compromise to give the baby gastric tube feeds overnight and alternate the breast with cup during the day. Otherwise, the cup should be used intermittently when the baby is able to go to the breast successfully on three or more occasions a day. This can be continued overnight as appropriate. The gastric tube should be removed at this time but should be replaced if there is any concern over the baby's weight gain.

#### **The term baby**

Cup feeding is ideal when a gastric tube is unacceptable or inappropriate, particularly at times when the mother is not available for all breastfeeds. It can be used as a method of supplementation in a number of situations, such as jaundice, and giving oral drugs to a breastfed baby.

#### **The baby with a cleft lip and/or palate**

Cup feeding may be used if there is a possibility that the baby will be able to breastfeed. It can be used in the period during which establishment of breastfeeding is taking place. It is helpful to give an initial small amount by cup so that the baby is less frustrated initially at the breast, or it can be used to supplement a baby's feed.

#### **The baby who cannot suck**

Cup feeding has a particularly important role with babies unable to feed from either the breast or bottle. Once this difficulty is established, cup feeding should be considered as an alternative to the long-term use of gastric tubes. Rather than suck, a baby sips or laps milk from a cup; those with neurological problems are also capable of this. Not only does cup feeding encourage the movement of the tongue and muscles of the mouth, but also allows the baby to enjoy its feeds and strengthens the relationship between parent and child. Early positive oral experiences are likely to lead to successful weaning.

#### **How much should the baby take?**

This will depend on a number of factors:

- Initially, a pre-term baby may only take a small amount from the cup, maybe 5-10ml.
- A baby at any gestation may want very little milk at one feed and a lot at the next. Whether the baby requires topping up or not depends on your knowledge of the baby and its circumstances.
- In the case of the baby who is capable of breastfeeding but not yet able to satisfy all its needs, allow it to have a cup **after** the breast. The amount it takes should not be regulated unless the baby is fluid restricted or the breastfeed was unsatisfactory.
- If a pre-term (or term) baby initially 'fights' at the breast, settle the

infant by giving a small amount of milk by cup **before** the breastfeed.

## The Supplemental Nursing System

(Edgehouse & Radzynski 1990; Siderfin 2002)

A supplemental nursing device can offer supplemental nourishment but does not interfere with establishing lactation. The supplemental nursing system is a device with tubes that are placed on the mother's nipple. Hence, the infant who has a weak suck or requires extra calories gets more rewards by using this device, which can be filled with breast milk or artificial milk.

Conditions that might necessitate use of the device are often interrelated. A variety of factors may interfere with the production of hormones that promote 'let down' of milk, including pain, high anxiety, and inadequate breast stimulation.

A mother may not breastfeed frequently enough because of pain or because she is tired, and the inadequate stimulation interferes with hormone production. As a result, poor 'let down' may occur, followed by a reduced milk supply, inadequate nourishment, and a frustrated infant at the breast who is likely to lose weight. If that occurs, maternal anxiety and frustration increase, and the cycle continues a downward spiral as hormone production is further decreased.

A supplemental nursing system may offer an answer to the problem. Because the infant is suckling the breast, it stimulates milk production. The device encourages the infant to suckle, because each suck is rewarded. The mother too can see that her baby receives food, and anxiety can be reduced.

A simple version of the device can be constructed with a feeding tube with one end of it in a bottle (filled with milk), and the other end slipped into the baby's mouth once it is latched onto the breast. Once the baby suckles at the breast, it will draw milk from the bottle. If the baby requires encouragement initially, a few drops of milk can be put on the breast.

## Nasogastric or Orogastric Tube

Feeding (Wilson-Clay & Hoover 1999)

A small tube is passed via the nose (nasogastric) or via the mouth (orogastric) directly into the stomach.

Usually, if only a few feeds are anticipated, the tube is inserted each time. For very ill infants, however, the tube is usually not removed for each feed.

## APPENDIX C

### Mothers' Information Sheet

(On headed Trust notepaper)

#### **Information sheet for mothers**

My name is Michele Cloherty. I am a research assistant carrying out a research study and am employed by Bournemouth University. My background is in psychology.

I would like to invite you to take part in the research project. This is some information to help you decide whether or not to take part. Please take time to read the following information carefully and discuss it with friends, relatives and your doctor if you wish. Please take time to decide whether or not you wish to take part. Thank you for reading this.

#### **What is the study about?**

Supplementary feeding for breastfed babies.

#### **What is its purpose?**

The purpose of this study is to gain insight into the decision-making process surrounding supplementation, the different methods used and the experiences and beliefs of mothers and healthcare professionals about supplementation. We know little about these things at present.

#### **Why have you been chosen?**

The healthcare professional caring for you is giving you this information sheet because your breastfeeding baby is thought to need supplementary feeding. We are likely to invite 10-20 mothers to take part, some based on the postnatal ward and some on the newborn unit. If you decide not to take part, this will not affect the standard of care you receive. Having taken time to consider the matter, if you would be interested in talking to me about the study, please inform the person caring for you.

We will also be asking to interview staff about their experiences and beliefs about supplementation.

#### **Who is organising the study?**

The study is being paid for by the Department of Health and carried out by Bournemouth University; no one is being paid for including you in the study. The entire study will take about a year.

**What will happen to you if you agree to take part?**

I would like to watch while healthcare professionals discuss supplementation with you and while your baby is given supplementary feed(s). I may then ask if you would be happy to discuss this experience with me at your convenience shortly afterwards and possibly to have that conversation tape-recorded by me; if you prefer I could take notes instead. This conversation could take place in a quiet room near the ward, or at your bedside if you preferred, however the latter might not be very private. The records and summaries of the observations and typed transcript of any interview will not identify you as an individual.

The other researchers (Jo Alexander - Reader in Midwifery; Immy Holloway - Reader in Health and Community Studies; Kate Galvin - Head of Research) will read these but they will not know who you are. If you do decide to take part, you are free to withdraw from the study at any time without giving a reason.

We are using this ethnographic research approach (that is, observation and interviews) because little is known about the whole topic.

**Are there any disadvantages to taking part in this study?**

If we ask to interview you, this may take about half an hour of your time.

**What are the possible benefits of taking part?**

You will not receive any direct benefit from taking part in the study but we hope that the information we get will help us to improve our service in the future.

**Confidentiality - who will know that you are taking part in the study?**

Those with you when the observations are being carried out. All information that is collected during the course of the study will be kept strictly confidential. Quotes from the interviews may be used to illustrate the study findings, but any information about you will be anonymised so that you cannot be recognised from it.

The study has been approved by the Salisbury Research Ethics Committee.

**What will happen to the results of the study?**

The work will help to produce guidelines about the support of mothers whose babies need supplementary feeding; these will be included in a final report written for the Department of Health. We also hope to publish some journal papers about the work. If you would like us to send you a summary of the results, please tick the box on the consent form.



**Where can you get further information?**

If you would like to talk about this study further, Jo Alexander (Reader in Midwifery at Bournemouth University) would be very pleased to talk to you on 01202 xxxxxx.

**What happens now?**

If you might like to take part, please ask for me to come to answer any questions you might have and to offer you a consent form.

If you do not wish to take part, there is nothing you need do.

Thank you for considering taking part in this study.

## APPENDIX D

### Mothers' Consent Form

#### CONSENT FORM

**Title of Project: Supplementing Breastfed Babies.**

Name of Researcher: Professor Jo Alexander

Please initial box

1. I confirm that I have read and understand the information sheet dated 5.9.01 for the above study
2. I understand that my participation is voluntary and that I am free to withdraw at any time without my medical care or legal rights being affected.
3. I agree to take part in the above study.

\_\_\_\_\_  
Name of patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of person taking consent  
(if different from researcher)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

1 for patient; 1 for researcher; 1 to be kept with hospital notes.

If you would like to be sent a summary of the results of this study, please enter your name and address below:

(The study will take about a year to complete).

## APPENDIX E

### Healthcare Professionals' Information Sheet

(On Bournemouth University headed notepaper)

#### **Information sheet for healthcare professionals**

My name is Michele Cloherty. I am a research assistant carrying out a research study and employed by Bournemouth University. My background is in psychology.

I would like to invite you to take part in the research project. This is some information to help you decide whether or not to take part. Please take time to read the following information carefully, to discuss it with whoever you wish and to decide whether or not you wish to take part. Thank you for reading this.

#### **What is the study about?**

Supplementary feeding for breastfed babies.

#### **What is its purpose?**

The purpose of this study is to gain insight into the decision-making process surrounding supplementation, the different methods used and the experiences and beliefs of mothers and healthcare professionals about supplementation. We know little about these things at present.

#### **Why have you been chosen?**

I am inviting you to take part because you are assisting a breastfeeding mother whose baby is thought to need supplementary feeding. We are likely to invite about ten healthcare professionals to take part from the postnatal ward and the newborn unit. If you decide not to take part, this is no problem. We will also be asking to interview mothers about their experiences and beliefs about supplementation.

#### **Who is organising the study?**

The study is being paid for by the Department of Health and carried out by Bournemouth University; no one is being paid for including you in the study. The entire study will take about a year.

#### **What will happen to you if you agree to take part?**

I would like to watch while you discuss supplementation with mothers and while their babies are given supplementary feeds. I may then ask if you would be happy to discuss this experience with me and possibly have that conversation tape-recorded by me; if you prefer, I could take notes

instead. You could choose where we talked. The records and summaries of the observations and any interviews will not identify you as an individual. The other researchers (Jo Alexander - Reader in Midwifery; Immy Holloway - Reader in Health and Community Studies; Kate Galvin - Head of Research) will read these but they will not know who you are. If you do decide to take part, you are free to withdraw from the study at any time without giving a reason.

We would like to assure you that your competence is not in question and there is no intention to question your professional decisions; the aim is rather to gain an insight into the practices and beliefs surrounding supplementation. We are using this ethnographic research approach (that is, observation and interviews) because little is known about the whole topic.

**Are there any disadvantages to taking part in this study?**

If we ask to interview you, this may take about half an hour of your time.

**What are the possible benefits of taking part?**

You will not receive any direct benefit from taking part in the study but we hope that the information we get will help to inform policy guidelines about supplementation.

**Confidentiality - who will know that you are taking part in the study?**

Those with you when the observations are being carried out. All information that is collected during the course of the study will be kept strictly confidential. Quotes from the interviews may be used to illustrate the study findings, but any information about you will be anonymised so that you cannot be recognised from it.

The study has been approved by the Salisbury Research Ethics Committee.

**What will happen to the results of the study?**

The work will help to produce guidelines about the support of mothers whose babies need supplementary feeding; these will be included in a final report written for the Department of Health. We also hope to publish some journal papers about the work.

**Where can you get further information?**

If you would like to talk about this study further, Jo Alexander (Reader in Midwifery at Bournemouth University) would be very pleased to talk to you on 01202 xxxxxx.

**What happens now?**

Having taken time to think about this, if you might like to take part, please ask me to answer any questions that you might have and to offer you a consent form.

If you do not wish to take part, there is nothing you need do.

Thank you for considering taking part in this study.

## APPENDIX F

### Healthcare Professionals' Consent Form

#### CONSENT FORM

**Title of Project: Supplementing Breastfed Babies.**

Name of Researcher: Professor Jo Alexander

Please initial box

1. I confirm that I have read and understand the information sheet dated 5.9.01 for the above study.
  
2. I understand that my participation is voluntary and that I am free to withdraw at any time without my legal rights being affected.
  
3. I agree to take part in the above study.

\_\_\_\_\_  
Name of Healthcare Professional

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of person taking consent  
(if different from researcher)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

1 for healthcare professional; 1 for researcher.

## APPENDIX G

### Transcription Sample

#### **Supplementing Breastfed Babies**

#### **Interview with midwife from the labour ward: Transcription 10**

*Details about midwife:*

This midwife has been working at Salisbury for several years. She has worked mainly on the antenatal and the labour ward but also has experience working on the postnatal ward.

*In what circumstances would you supplement a breastfed baby?*

In the pre-term infant, or in the hypoglycaemic infant. Any unhealthy infant who needs to be fed, an infant who has some sort of medical condition.

*What methods do you use with breastfed babies?*

Well obviously there's the bottle, cup, actually, it wasn't my idea but I tried out a tube feed over the finger...

*A finger feed...*

A finger feed with a tube attached to it, is that right?

*Yes...Oh right, and how did you find it?*

I thought it was really good actually.

*When did you do that?*

Several months ago, you know, it was something that [Name] had sort of introduced for a baby, and it worked really well.

*I see, so she [Name] introduced it...*

Yes, it was just what was being done, I didn't actually do it myself, but I was supporting the mother in her doing that, so it wasn't something that I instigated, if that is what the question is.

*So the mother was doing the finger feeding then...*

Yes, she was.

*And it seemed to work well for her...*

Yes, it did.

*Right, and did you say you've used the cup as well. How do you find that?*

Quite good, a bit messy, but quite good. I quite like that.

*And how do you find the syringe?*

I think also that's OK actually, it isn't just a case of squirting it in, it's a case of putting it on the baby's tongue really gently.

*You squeeze it do you into the baby's mouth...*

Yes, just squirt; well dribble it in really.

*Just dribbling it in, not squirting it all in the mouth...*

Oh no, no, just a few dribbles on the baby's tongue.

*Did you say you also use the bottle with breastfed babies?*

I have done.

*And how do you find that?*

OK, a lot of people think it's always easy to use, but that's not always the case. It's not always the easy option, not all babies take to the bottle, especially where mums have had problems getting the baby onto the breast. Sometimes it's not always easy to get a baby onto the bottle.

*And how do you actually feel about using the bottle?*

Personally, I would go with what the mothers say, because if I feel the baby needs some form of supplementation, for the reasons discussed, and I would put it to the mother, that there is this suggestion that when you give a baby a bottle they say it can make it difficult to go back to the breast, but I'd also mention the other methods. We've had tubes and bottles years ago and lots of women would have preferred the baby to have the bottle as opposed to the distress of having a tube, but now we've got the options of the cup, and that sort of thing. I don't do a lot of postnatal, I mean some women are quite happy to just go and give it a bottle, it's not something I would choose whereas before, it was bottle or tube. But now we've got more methods to try. I'm not convinced that there is an effect on the breastfeeding, but it's not something I would go to, unless it's the mother's choice.

*Have you used the supplemental nursing system?*

No I haven't. I've never seen it in use, I've heard of it being used, but never seen it. I don't know if I'd have the confidence myself to just give it a go. If someone was around to help out, I might though.



*Do you have a preference for a certain method?*

I think I like the cup feeding along with the syringe feeding, but I want to make it clear I'm not just squirting the milk in the baby's throat, so it is very much just dribbling it in.

*Right, so it could still be quite time consuming...*

Oh, yes, I suppose you could argue that it's quicker with the syringe, but in actual fact, it's not really, because if you put too much in, it just comes out anyway.

*And cup feeding, how do you find that in terms of time or practical use?*

That's quite time consuming, some babies are quick and some aren't so quick.

*Some are better than others...*

Yes, but it's a bit messy, but it's quite sweet, and I quite like to do it, when they're lapping it up.

*How ideally do you think the decision to supplement should be made?*

*Who should it involve?*

Well, the mother, it's her baby. Do you mean the decision to supplement or the method?

*Both, really, the decision to give a baby a supplementary feed, and also who chooses the method to use?*

I think, ultimately, the decision, or the advice that the baby needs a supplementary feed is going to be geared by either the doctors, paediatricians, or the midwives, because we're going with certain criteria, for example, this baby might be extremely small, pre-term, that sort of thing. There are criteria that we are advised to meet, to look out for, and then advise if they need supplementing. But then it's about explaining that to the mother, and why you're actually wanting to do that, or recommending it. I guess ultimately, it's up to the mother about the choice of method.

*So would you usually talk to the mother, tell her what methods there are, and let her decide?*

Yes, although, I suppose so, but most women don't really know what methods there are, most women are quite happy for their baby to be supplemented, if the baby isn't well. I guess, I might say 'how about a cup feed? Let's try a cup feed, we could try these options'. I guess that's what I would do first of all. Thinking about it, it should be the mother's choice of the method, but I'd probably suggest a method first...

*I see, and if the mother didn't want to do a cup feed...*

Then I'll say what the options are. I think if I'm being honest, I don't actually say, well we can do this, or this way, or this way. Quite often, I'll say let's do a cup feed, they can often be quite good at it, but it can be a bit messy though. I'll say there is the potential for bottles for example, but there's the suggestion it can have a negative impact on breastfeeding, so that's how I'll put it.

*It's difficult because sometimes you don't want to give mothers a whole range of options, because they may be overwhelmed by the whole thing, and they want someone who knows what they're doing...*

Yes, I think also, for example, the nursing supplementer, the baby's actually got to be feeding well, it's got to be latching on well for you to be able to use it. And if you're needing to supplement a baby because it's not feeding very well, or maybe you've got problems with fixing, or because his blood sugar's low, that's a vicious circle then, and then that's not the ideal thing. My thoughts say that the baby has got to be able to fix well to use the supplementer, but as I said I've not used it.

*Because you've got to get the nipple and the tube into the baby's mouth...*

Yes and getting the nipple and tube in is not the problem, sometimes, it's getting the nipple in that's the problem! It's not easy, some babies don't fix well, and it's a bit of a struggle, and I guess if he wasn't actually fixing well. I know you've got two tubes coming down, I don't know how you rig it up, but, I'm as I said not sure how it all works.

## APPENDIX H

### Parent's Cup Feeding Leaflet

#### **Cup feeding your baby**

Parents who primarily wish their baby to breastfeed, but who on occasion need an alternative method of feeding can use the cup. Expressed breast milk is the ideal milk to use but formula milk may also be given.

#### **The baby with special needs**

*Reasons for its use:*

- To provide an oral experience for your baby.
- To provide an alternative method of feeding when you are not available to breastfeed your baby.
- To avoid nipple/teat confusion which can arise from the early and inappropriate introduction of bottles.
- To reduce the need for feeding tubes.

*Advantages:*

- The baby paces its own intake in time and quantity.
- It requires little energy output.
- It stimulates the suck swallow responses.
- It stimulates tongue and jaw movements.
- Less fat from the expressed milk is lost with a cup than via gastric tubes.
- Very easy to maintain good eye contact as the baby is held closely for the feed.
- IT IS VERY EASY – for you as parents to do.

*Disadvantages:*

- Term babies tend to dribble.
- Term healthy babies can become addicted to the cup if they cannot go to the breast regularly.

The cup must not replace breastfeeding without very good reason.

#### **The pre-term baby**

A cup can be safely used to feed a baby from 32 weeks gestation!

A cup may be appropriate when:

- A pre-term baby is wide-awake and restless at feed times.
- Shows signs of wanting to suck.
- Is not satisfied by tube feeds.
- A baby is not yet able to feed directly from the breast or has only

enough energy to satisfy part of its total nutritional needs at the breast.

Cup feeding may be commenced when 2-3 hourly tube feeds are introduced or established. It is not appropriate whilst hourly feeds are required.

#### **The term baby**

Cup feeding is ideal when the feeding tube is unacceptable or inappropriate, particularly at times when the mother is not available for all breast feeds.

#### **The baby with a cleft lip and/or palate**

Cup feeding may be used if there is a possibility that the baby will be able to breastfeed. It can be used in the period during which establishment of breastfeeding is taking place.

#### **The baby who cannot suck**

Cup feeding has an important role with babies unable to feed either from the breast or bottle. Once this difficulty is established, cup feeding should be considered as an alternative to the long-term use of feeding tubes. Rather than sucking, a baby sips or laps milk from a cup.

Cup feeding allows the baby to enjoy its feeds and strengthens the relationship between parent and child. Early pleasant sensations via the mouth are more likely to lead to an easy transition to breastfeeding and successful weaning later in the baby's development.

#### **How much should the baby take?**

This is dependent on a number of factors:

- Initially, a pre-term baby may only take a small amount from the cup.
- A baby at any gestation may want very little milk at one feed and a lot at the next.
- In the case of a baby who is capable of breastfeeding but not yet able to satisfy all its needs, offer the baby a cup feed after the breast.
- If a pre-term or term baby 'fusses' at the breast it may be appropriate to settle the baby by giving a small amount of milk by cup **before** the breastfeed.

#### **How to cup feed**

The method of cup feeding is the same for any baby.

- Wrap the baby securely in a blanket to prevent its hands knocking the cup. Place a bib under baby's chin as dribbling usually occurs.

- Support the baby in an upright sitting position on your lap, so that you are both comfortable.
- Fill cup to halfway mark if possible.
- The cup should be tipped slightly so the milk is just touching the baby's lips. It should **NOT** be poured into the baby's mouth.
- Direct the rim of the cup towards the corners of the upper lip and gums, with it gently touching/resting on the lower lip. Do not apply pressure to the lower lip.
- Leave the cup in the correct position during the feed. Do not keep removing it when the baby stops drinking. It is important to let the baby take as much as it needs in its own time.
- 'Wind' baby as necessary.

**How to clean the cup?**

- Wash in warm soapy water.
- Rinse in clean water before sterilising.

Author: Luisa Cescutti-Butler (with thanks to Ameda Egnell).

Date written: April 2002.