Parental distress around supplementing breastfed babies using nasogastric tubes on the postnatal ward: a theme from an ethnographic study.

Abstract

There is abundant evidence of the benefits of breastfeeding. In the UK, supplementation in hospital has consistently been shown to be associated with shortened duration of breastfeeding. This paper reports on one theme that emerged from an ethnographic study that explored the expectations, beliefs and experiences of mothers and health professionals concerning supplementation of breastfed babies in an English maternity unit in 2002. It relates specifically to a subset of the data, ten mothers whose babies received at least one supplementary feed by nasogastric (NG) tube on the postnatal ward. Participant observation was carried out on the postnatal ward on day and night shifts and at weekends over nine months. Mothers, midwives, neonatal nurses, health care assistants and senior paediatricians were interviewed. Categories and themes were generated. The researchers’ constructs of ‘the essential method’, when the tube was the method needed for medical reasons, and ‘the chosen method’ when other methods of oral feeding should have been possible, emerged. The latter included time pressures and the avoidance of any form of oral activity that might perhaps make return to the breast more difficult. The data concerning the use of NG tubes for supplementation yielded the specific theme of parental distress. In the absence of evidence that supplementation by NG tube on the postnatal ward is associated with greater breastfeeding success than other methods, its use to avoid any form of ‘oral confusion’ should be discontinued. Its use primarily to save time should not be considered acceptable.

Keywords: breastfeeding, maternal confidence, feeding problems, complementary feeding, postnatal, ethnography.

Introduction

The major health benefits of breastfeeding to both mother and infant are well documented (Dermott et al. 2006, Gartner et al. 1997). If supplementary feeds
are required, the use of a variety of alternative feeding methods has been widely discussed; these methods include cup, bottle, finger-feeding, syringe, nasogastric and orogastric tubes and devices such as the supplemental nursing system (Watson Genna 2008, Walker 2006). In the UK supplementation in hospital has consistently been shown to be associated with shortened duration of breastfeeding (Bolling et al. 2007, Hamlyn et al. 2002, Foster et al. 1997). It has been suggested that 'nipple confusion' between breast and bottle feeding is one of the factors that could have an adverse effect on the continuation of successful breastfeeding (Neifert et al. 1995, Biancuzzo 1993), despite a dearth of evidence to support this. Nevertheless, global recommendations are that parents should be informed of the risks of using a bottle and teat and offered an alternative method of feeding breastfed infants when supplements are required (Vallenas & Savage 1998).

This paper reports on the findings of part of a larger ethnographic study which was undertaken specifically to explore the expectations, beliefs and experiences of mothers and health care professionals concerning supplementation of breastfed babies as no previous study had reported on these issues. One of the themes that emerged from the study related to the use of NG tubes to supplement feeds in newborn babies on the postnatal ward, and is the subject of this paper. More detail about the methods used and other themes that emerged have been reported in detail elsewhere (Cloherty et al. 2004; Cloherty et al. 2005)

Nasogastric (NG) tubes are commonly used in the UK as a means of giving supplementary feeds if a baby is unable to feed orally, or has significantly increased metabolic requirements such as one who is premature or has congenital heart disease (Page-Goertz & Riordan 2005). In early discussions around the phenomenon of 'nipple confusion', Newman (1990) proposed the use of an NG tube, even when other oral methods were feasible, to avoid breast refusal and the subsequent problems that might ensue. Despite evidence demonstrating that using an NG tube as opposed to a bottle to supplement preterm babies during their transition to oral feeds on a newborn baby unit significantly increases the probability of breastfeeding at discharge, 3 days, 3
months and 6 months, there appears no evidence to support its use for term babies on the postnatal ward (Kliethermes et al. 1999). Indeed surprise has been expressed that, given the lack of evidence concerning nipple confusion, ‘caregivers sometimes even recommend passing a NG tube rather than give a bottle’ (Renfrew et al. 2000: page 44). Moreover, a recent systematic review comparing cup feeding with other forms of supplemental enteral feeding for newborn infants unable to fully breastfeed did not identify any studies that included the use of NG tubes (Flint et al. 2007).

NG placement is believed to cause a substantial amount of discomfort and distress to the baby (Wilson-Clay & Hoover 1999), and despite being a common clinical procedure, can produce unexpected complications through misplacement or perforation of the oesophagus, posterior pharynx, stomach or duodenum (Niermeyer and Gross 1999). Whilst there appears a dearth of evidence related to NG feeding in term infants, nasogastric feeding in low birth weight infants has been associated with reduced minute ventilation and tidal volume, poor suckling ability (Shiao et al. 1995; Hawdon et al. 2000) which may delay the establishment of normal feeding patterns, nasal irritation (Sporik 1994), altered oral sensitivity (Doddrell et al. 2004) and gastroesophageal reflux (Bazyk 1990; Peter et al. 2002).

**Methods**

**Research Design of the Wider Study**

As there was minimal evidence relating to interactions surrounding the supplementation of breastfed babies, an ethnographic approach was chosen as it provides an ‘insider’s view’ within a specific cultural context (Roper & Shapira 2000; Holloway & Wheeler 2002). The qualities of ethnography have been demonstrated to be valuable in a previous research study relating to breastfeeding, because of their importance in revealing concepts that cannot be uncovered through other methods, such as questionnaires alone (Victoria et al. 1997). An enhanced understanding of routine practices used in relation to supplementation of breastfeeding was sought, which included the use of nasogastric tubes.
Setting and Participants

The study was undertaken on the postnatal ward and neonatal unit of a maternity unit in the South West of England (UK) with an annual rate of 2500 births, and where a wide variety of approaches were used to give supplementary feeds to breastfeeding babies. These included cup, bottle, finger-feeding, syringe, nasogastric and orogastric tubes and the supplemental nursing system. This paper reports on a subset of the data from the main study relating to ten mothers whose babies received at least one supplementary feed by NG tube on the postnatal ward; oro-gastric tubes were not used there. Seven midwives, three neonatal nurses, three healthcare assistants, and three senior paediatricians were interviewed.

Ethical Issues

A favourable opinion from the Local Research Ethics Committee was gained and permission was granted by the midwifery managers and the directors of obstetrics and paediatrics. Participants were informed that their participation was voluntary, they were free to withdraw from the study at any time and their identity would be protected, although some of their words might be quoted. Mothers were assured that if they declined to take part their care would not be affected in any way. Health professionals were informed that their professional competence was not being judged and that their clinical decisions would be respected.

Health professionals were provided with both written and verbal information and written consent was obtained. All those approached to participate agreed.

Mothers whose baby's required supplementation were initially provided with a written information leaflet about the study by the health professional caring for them. If they were interested in taking part, they were subsequently seen personally by the researcher who talked with them, leaving a consent form to be collected later. One mother declined to take part.
The full interview tapes were only accessed by the research assistant and the grant holders and were destroyed on completion of the study. To guarantee anonymity pseudonyms were used and, specific grades of staff were not identified.

Observation

The researcher was actively present as a ‘participant observer’ within the field, (Dewalt & Dewalt, 2002). After an initial six week period of observation to enable her to become immersed in the field the observation continued for seven and a half months for periods during the day, night and weekends. The researcher specifically noted communication between health professionals and mothers, using a combination of formal interviewing and casual conversation. The latter was particularly helpful in establishing good relationships. Field notes were recorded of all observations.

As the researcher was not a health professional she was able to ask naïve questions, allowing participants to enrich the data by explaining their thoughts and feelings in detail. Additionally, because she was not a health professional, role conflict did not occur and she was not expected to perform any health care duties, which enabled her to withdraw easily when necessary to write up field notes.

Interviews

Depending on the mother’s choice, interviews were conducted on the postnatal ward, in a private room or by the bedside with the curtains drawn around. Sometimes interviews followed a period of observation when health professionals’ and mothers’ interactions were observed prior to or during a supplementary feed being given using an NG tube. To facilitate an open discussion allowing the participant freedom to control the focus of the conversation, the interview technique was interactive and unstructured. Interviews with mothers were initiated by asking them to tell the researcher about the experience of their baby being given an NG feed.
Interviews with health professionals were undertaken in a private room within the hospital. A similar interactive, unstructured technique was employed, with an opening question asking the health professional to tell the researcher about their experiences and views of giving supplementary feeds to breastfed babies; this included giving feeds by NG tubes.

Data Analysis
Where relevant the researcher contemplated potential meanings of the emerging data during the time between observation and interview, thus allowing questions to be asked about issues that remained unclear. She then examined and re-examined the field-notes and interview transcripts, until definite ideas emerged. Categorising and coding of ideas enabled related concepts to be identified and grouped together to form themes. To ensure credibility and trustworthiness of the research, a second member of the research team reviewed the analysis of each transcript, and then finally a peer-review of the data was undertaken (Lincoln & Guba 1985) by two midwives with known specialist breastfeeding expertise from a different area of the UK.

Results and discussion
The mothers and health professionals were asked for their understanding of the reason for the supplementation (further details of this and of the babies concerned are given in appendix 1). Because of the focus of the study, access to medical records had not been requested from the Ethics Committee and no verification of the information provided was sought. The researchers formed the tentative opinion that the babies could be divided into those who were supplemented by NG tube because it had been decided that for ‘medical’ reasons it was essential to use this method, and those who could arguably have been supplemented using other methods of oral feeding but the NG tube had been specifically chosen. Thus the researchers’ constructs of ‘essential method’ and ‘chosen method’ emerged. The existence of these two
‘groups’ was supported and further illuminated by the observation and interview data.

In relation to its use as the ‘chosen method’ two sub-groups emerged. In the first the NG tube was used, as previously alluded to by Renfrew et al. (2000), in order to avoid any form of oral activity connected with supplementation that might perhaps ‘confuse’ the baby and therefore possibly make a subsequent return to breastfeeding more difficult.

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

However, whilst use of a tube for this reason was advocated by Newman (1990), there does not appear to have been any research to investigate its effectiveness other than with preterm babies in the newborn baby unit (Kliethermes et al. 1999). Indeed, no studies were included in a recent systematic review evaluating cup feeding versus other forms of supplemental enteral feeding in newborn babies (Flint et al. 2007). There even remains debate as to whether the phenomenon of ‘nipple confusion’ actually exists (Fisher & Inch 1996; Renfrew et al. 2000).

In the second sub-group, it appeared that issues relating to time pressures on staff played at least some part in the decision. Indeed, several health care professionals expressed the view that tubes were easy and less time consuming than other methods of supplementation.

“Personally I sometimes feel we over use tubes…Maybe tubes are being used because it’s quicker, where it may be better to sit down and either support the mother’s breastfeeding, which midwives do very well, but often there just isn’t time, or to try methods like cup feeding, syringe feeding”. (Paediatrician 3)

“They’re so easy, I love them for their easiness. I’m terrible, but you know, when …. 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)

The following is an example of the use of an NG tube as the ‘essential
method’ group:
“For preterm babies, who aren’t very awake and get tired quickly what I’ll do is
put a tube down because you want to try them as often as possible on the
breast, and that wears them out, and so does any other method of feeding
probably…and more often than not they need regular feeding, especially during
the first few days, so I’ll put a tube down and supplement them that way, (a) to
save their energy and (b) to make sure they get the fluids they’re supposed to
have”. (Midwife 5)

Data from the mothers of the babies who had received supplementary tube
feeds contributed to the themes identified by the study as a whole, however a
specific theme, parental distress, emerged relating to this particular method of
supplementation. Distress was mentioned spontaneously by five of the ten
mothers interviewed and also by three of the health care professionals.

This distress occurred at the time that the tube was inserted:
“It was traumatic when a student [midwife] was trying to fit a tube and there was
blood coming out of twin 1’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 9 of growth retarded twins)

“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)

However distress also continued if the tube was left in place:
“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 9)
The adverse effects of maternal distress on lactation are well documented with evidence demonstrating that psychological distress can impair the milk ejection reflex causing a reduction in the release of oxytocin (Dewey 2001, Ueda et al. 1994). With adequate support the mother’s lactation usually returns to its previous level. However, if a distressed woman on a postnatal ward is attempting to breastfeed or to express her milk to initiate and maintain lactation, the milk supply could at least temporarily be adversely affected. Whilst many women are subject to transient low mood in the first few days post birth, this study highlights the importance of providing information, reassurance and support to breastfeeding women in order to prevent additional distress which may subsequently have a detrimental effect on their mental health, wellbeing and ability to breastfeed.

One baby born by elective caesarean section at term had an NG tube left in situ to facilitate the giving of supplementary feeds whilst receiving phototherapy; the baby weighed 4.56 Kg. The mother said:

“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…” (Mother 5)

Whilst it was true that there may well have been a variety of reasons for the very considerable anxiety expressed by this mother who subsequently stopped breastfeeding completely, the NG tube certainly seemed to have caused her great distress and knocked her confidence in her ability to breastfeed. She had breastfed her previous baby for seven months. The importance of maternal confidence for breastfeeding success has been identified in several studies (Blyth et al. 2002, Dykes & Williams 1999). Clearly an NG tube is a very invasive form of delivering a feed. Another form of medicalised intervention with breastfeeding, visual charting of weights by health visitors, has also been found to have an adverse effect on breastfeeding success (Sachs et al. 2006).
For another mother the context of care appeared to influence her and her partner’s feelings about the NG tube.

“I didn’t mind over in the newborn unit, but we both found it quite stressful over here because you don’t expect it over here on the postnatal ward”. (Mother 10)

It seems likely that most staff would not have expected this increased anxiety about the NG tube, as the transfer of a baby from the newborn baby unit (NBU) to the postnatal ward is generally taken as an important positive milestone that should reduce parental anxiety.

One paediatrician felt that the parents’ feelings needed to be taken into account more when the decision as to whether to pass an NG tube was being made.

“We as health professionals who use tube feeding at the drop of the hat, it’s no big deal to put a tube down, though 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 overuse tubes”. (Paediatrician 3)

Given that the mothers may well have seen other methods of giving supplementary feeds in use, it is perhaps surprising that none of them expressed the view that an NG tube should not have been used. As with another study exploring women’s perceptions of care received in labour (Bluff & Holloway 1994), they appeared to believe that the health care professionals ‘knew best’.

Wilson-Clay & Hoover (1999) suggest that babies find tube feeding uncomfortable and, given this, it is also surprising that no mother or health care professional made reference to having observed any signs of this. It may be however, that such distress arises only after a tube has been in place longer than would be usual on the postnatal ward.
Conclusion

With a dearth of evidence, this work, despite the small sample size, has particular importance in drawing attention to the distress that parents experience when their babies are given supplementary feeds by NG tube on the postnatal ward. In the remainder of this study, reported elsewhere (Cloherty et al. 2004, Cloherty et al. 2005), no other method of supplementation was found to cause the parents to express the same level of distress. It is an invasive procedure which can result in unexpected complications. It is therefore recommended that, in the absence of any evidence suggesting that the use of NG tubes on postnatal wards is associated with better breastfeeding outcomes than other methods of supplementation, their use, solely in order to avoid any form of ‘oral confusion’, should be discontinued. Their use primarily to save time should also not be considered acceptable.

Key messages

The insertion of and subsequent feeding of a newborn baby using a nasogastric tube on the postnatal ward can cause distress and anxiety to parents.

If a nasogastric tube is necessary, women may need support to maintain confidence in their ability to breastfeed. This may be especially important if the tube is left in situ.

The use of nasogastric tubes, solely in order to avoid any form of ‘oral confusion’, should be discontinued.

The use of nasogastric tubes primarily to save time should be considered unacceptable.
References


### Appendix 1  Babies Supplemented by Nasogastric Tube

<table>
<thead>
<tr>
<th>Reason given for supplementation*</th>
<th>Type of birth</th>
<th>Gestation at birth (weeks)</th>
<th>Birth weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Essential Method' Group:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low BM- no energy</td>
<td>Normal</td>
<td>34</td>
<td>1.84</td>
</tr>
<tr>
<td>Low BM- jaundiced</td>
<td>Normal</td>
<td>37</td>
<td>4.5</td>
</tr>
<tr>
<td>Low BM</td>
<td>Normal</td>
<td>37</td>
<td>2.27</td>
</tr>
<tr>
<td>Preterm &amp; growth retarded</td>
<td>Normal</td>
<td>36</td>
<td>1.84</td>
</tr>
<tr>
<td>No energy (twins)</td>
<td>Ventouse</td>
<td>36</td>
<td>2.64 &amp; 2.38</td>
</tr>
<tr>
<td>Jaundiced &amp; preterm</td>
<td>Normal</td>
<td>36</td>
<td>3.09</td>
</tr>
<tr>
<td>'Chosen Method’ Group:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phototherapy</td>
<td>El LSCS</td>
<td>Term</td>
<td>4.56</td>
</tr>
<tr>
<td>Growth retarded (twins)</td>
<td>Normal</td>
<td>38</td>
<td>2.3 &amp; 2.18</td>
</tr>
<tr>
<td>Growth retarded</td>
<td>Emerg LSCS</td>
<td>38</td>
<td>1.93</td>
</tr>
<tr>
<td>Growth retarded</td>
<td>Normal</td>
<td>37</td>
<td>1.81</td>
</tr>
</tbody>
</table>

*The words used are as collected in the field*