Original Article

Parental distress around supplementing breastfed babies using nasogastric tubes on the post-natal ward: a theme from an ethnographic study

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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 a subset of the data from an ethnographic study that explored the expectations, beliefs and experiences of mothers and health professionals concerning supplementation, using a variety of methods, of breastfed babies in an English maternity unit in 2002. This paper aims to describe the expectations, beliefs and experiences of mothers and health professionals concerning supplementation by nasogastric (NG) tube on the post-natal ward. Participant observation was carried out on day and night shifts and at weekends over 9 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 post-natal ward is associated with greater breastfeeding success than other methods, the use of the tube 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, post-natal, ethnography.

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Introduction

The major health benefits of breastfeeding to both mother and infant are well documented (Gartner *et al.* 1997; Dermott *et al.* 2006). 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 (NG) and orogastric tubes and devices such as the supplemental nursing system (Walker 2006; Nyqvist 2008). In the UK, supplementation in hospital has consistently been shown to be associated with shortened duration of breastfeeding (Foster *et al.* 1997; Hamlyn *et al.* 2002; Bolling *et al.* 2007). It has been suggested that 'nipple confusion' between breastfeeding and bottle-feeding is one of the factors that could have an adverse effect on the continuation of successful breastfeeding (Biancuzzo 1993; Neifert *et al.* 1995), despite limited 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 (WHO 1998).

This paper reports on the findings of part of a larger ethnographic study that 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 section of the data from the study related to the use of NG tubes to supplement feeds in newborn babies on the post-natal ward and is the subject of this paper. The methods used and themes that emerged have been reported in detail elsewhere (Cloherty *et al.* 2004; Cloherty *et al.* 2005).

Nasogastric 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 on a newborn baby unit during their transition to oral feeds significantly increases the probability of breastfeeding at discharge, 3 days, 3 months and 6 months, there appears no evidence to support the use of NG tubes for term babies on the post-natal ward (Kliethermes *et al.* 1999). Indeed, some researchers were surprised that, given the lack of evidence concerning nipple confusion, 'caregivers sometimes even recommend passing an NG tube rather than give a bottle' (Renfrew *et al.* 2000 p. 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 & Gross 1999). While there appears to be a dearth of evidence related to NG feeding in term infants, NG feeding in low-birthweight 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 (Dodrill *et al.* 2004) and gastroesophageal reflux (Bazyk 1990; Peter *et al.* 2002).

This paper aims to describe the expectations, beliefs and experiences of mothers and health professionals concerning supplementation by NG tube of breastfed babies on the post-natal ward.

Methods

Research design

As there was minimal evidence relating to interactions surrounding the supplementation of breastfed babies, an ethnographic approach was chosen because it provides an 'insider's view' within a specific cultural context (Roper & Shapira 2000; Atkinson *et al.* 2001; Holloway & Wheeler 2002). A previous study relating

to breastfeeding showed that the qualities of ethnography are valuable 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 NG tubes.

Setting and participants

The study was undertaken on the post-natal 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, NG and orogastric tubes and the supplemental nursing system. This paper reports on a subset of the data from the main study relating to 10 mothers whose babies received at least one supplementary feed by NG tube on the post-natal ward; orogastric tubes were not used there. As well as 10 mothers, seven midwives, three neonatal nurses, three health care assistants and three senior paediatricians were interviewed.

Ethical issues

Permission to undertake the study was granted by the Local Research Ethics Committee, the midwifery managers and the directors of obstetrics and paediatrics. Participants were informed that their participation was voluntary, that they were free to withdraw from the study at any time and that 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 from them. All those who were approached to participate agreed to do so.

Mothers whose babies required supplementation were initially provided, by the health professional

caring for them, with a written information leaflet about the study. If they were interested in taking part, they were subsequently seen by the researcher, who talked with them and left 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 upon 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 6-week period of observation to enable her to become immersed in the field, the observation continued for 7.5 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 post-natal 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. Categorizing 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 Table 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 by 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 subgroups emerged. In the first group, 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

Table 1. Babies supplemented by nasogastric tube

Reason given for supplementation*	Type of birth	Gestation at birth (weeks)	Birth weight (kg)
'Essential method' group			
Low BM – no energy	Normal	34	1.84
Low BM – jaundiced	Normal	37	4.5
Low BM	Normal	37	2.27
Preterm and growth retarded	Normal	36	1.84
No energy (twins)	Ventouse	36	2.64 and 2.38
Jaundiced and preterm	Normal	36	3.09
'Chosen method' group			
Phototherapy	Elective LSCS	Term	4.56
Growth retarded (twins)	Normal	38	2.3 and 2.18
Growth retarded	Emergency LSCS	38	1.93
Growth retarded	Normal	37	1.81

BM, blood glucose concentrations measured by the Reagent Strip test; LSCS, lower segment caesarean section; *The words used are as collected in the field.

she [the baby] might get confused if we used the syringe, and for this reason we chose the tube. (Mother 14)

However, while the use of a tube for the reason just cited was advocated by Newman (1990), there does not appear to have been any research investigating 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 vs. other forms of supplemental enteral feeding in newborn babies (Flint *et al.* 2007). There even remains a debate as to whether the phenomenon of 'nipple confusion' actually exists (Fisher & Inch 1996; Renfrew *et al.* 2000).

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

Personally I sometimes feel we overuse tubes . . . Maybe tubes are being used because it's quicker, where it may be better to sit down and either support the mother's breast-feeding, 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 when the NG tube was selected for 'medical' reasons and was considered part of 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 10 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 (Ueda *et al.* 1994; Dewey 2001). With adequate support, the mother's lactation usually returns to its previous level (Watson Genna & Sandora 2008). However, if a distressed woman on a post-natal 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. While 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, well-being 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 while the infant was 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)

While 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 7 months. The importance of maternal confidence for breastfeeding success has been identified in several studies (Dykes & Williams 1999; Blyth *et al.* 2002). Clearly, an NG tube is a very invasive form of delivering a feed. Another form of medicalized 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 to the post-natal 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. However, it may be that such distress arises only after a tube has been in place longer than would be usual on the post-natal 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 post-natal 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 that can result in unexpected complications. It is therefore recommended that, in the absence of any evidence suggesting that the use of NG tubes on post-natal 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. The use of NG tubes primarily to save time should also not be considered acceptable.

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Key messages

- The insertion of, and subsequent feeding of a newborn baby by nasogastric tube on the post-natal 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 also be considered unacceptable.

Conflicts of interest

None declared.

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