

Interdisciplinary perspectives on the management of the unsettled baby: key strategies for improved outcomes

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Abstract. The objectives of this study were to analyse the perspectives of key informants with clinical expertise in the care of unsettled babies in the first few months of life and their families, concerning changes required to improve outcomes. The research used a purposive selection strategy and thematic analysis of key informant interviews of 24 health professionals from 11 disciplines. Informants were selected for extensive experience in the management of unsettled babies and their families. Participants corroborated existing evidence that post-birth care in Australia is fragmented. All held the view that, first, early primary care intervention for unsettled infants and their families, and second, improved cross-professional communication, are vital if the burden of this problem to the infant, family and health system are to be minimised. There was consensus, third, that significant gaps exist in health professionals' knowledge base and management behaviours. The development of education resources, best practice guidelines, shared assessment frameworks for primary care practitioners and strategies for improved cross-professional communication are necessary to improve the health outcomes and decrease the burden of this common yet complex post-birth problem.

Additional keywords: crying baby, excessive crying, infant, infant feeding, post-birth.

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Introduction

Unsettled infant behaviour is among the most common presentations to health professionals in the first months of life, reported by parents of one in five babies (Wake *et al.* 2006). Parental report of unsettled infant behaviour is an indicator of risk post-birth, because babies with cry-fuss problems are at increased risk of long-term behavioural disturbance (Hemmi *et al.* 2011), child abuse (Reijneveld *et al.* 2004) and premature breastfeeding cessation (Howard *et al.* 2006); their mothers are at increased risk of perinatal anxiety and depression (McMahon *et al.* 2001; Vik *et al.* 2009). Unsettled babies are a heterogeneous population with a multifactorial aetiology, arising out of a complex interplay of biologic, psychosocial and cultural factors (Douglas *et al.* 2011). However, simplistic approaches and discipline-specific responses still dominate, leading to inappropriate diagnoses, inadequate management and unintended short- and long-term consequences (Douglas and Hiscock 2010).

Although service provision varies from state to state, parents report dissatisfaction with post-birth care nationwide (Hirst 2005; RACGP 2009; Commonwealth of Australia 2009a). For example, mothers of new babies visit GPs on average 7.7 times in the six months postpartum (Gunn *et al.* 1996) yet 72% of mothers report GPs are not very helpful on baby issues

(Bandyopadhyay *et al.* 2010). Midwifery care, despite recent Medicare initiatives, remains mostly hospital-based and limited to the immediate postpartum. Publicly funded child health clinics provide community care for mothers and babies, but work in isolation from general practice and other primary care practitioners (PCPs), are often unable to offer continuity of care and focus on families with multiple risk factors (Barnes *et al.* 2003; Eronen *et al.* 2011). Practice and pharmacy nurses are also consulted (Flowers 2008). Parents with crying babies complain of receiving conflicting advice, and have high levels of multiple health service use, including of emergency departments (McCallum *et al.* 2011).

Against this background, our study examined the perspectives of health professionals from multiple disciplines who have expertise in the assessment and management of unsettled babies in the first few months of life and their families about what is required to improve outcomes for this common yet complex post-birth problem.

Methods

Approach

The study uses a qualitative research approach, combining documentary analysis and key informant interviews.

Participant selection

A purposive selection strategy was used to identify participants with expertise in managing unsettled infants. Within this focus, we approached 25 representatives from each health discipline contributing to the care of this population across Queensland, New South Wales and Victoria, and one international expert. P. S. D. selected the key informants through her professional networks, by approaching health professionals with prominent reputations locally and nationally (and in one case, internationally), and by referral from other key informants. The informants comprised PCPs, midwives and referral practitioners who provided care to the unsettled infants and their families referred to them (Table 1). Both private and public sectors, and hospital and community-based practitioners were represented. Fourteen participants had teaching or research interests and publications related to the study. One potential informant declined to participate on the grounds that one of the researchers (P. S. D.) had received a school-based scholarship for related research, funded by Bayer pharmaceuticals. The study was approved by The University of Queensland's Behavioural and Social Sciences Research Ethics Committee, and Queensland Health's Royal Children's Hospital Research Ethics Committee.

Data collection

The research used semi-structured interviews conducted by P. S. D, face-to-face, by phone or by Skype, an average of 50 min in duration and digitally recorded and transcribed, or directly transcribed by a stenographer. The questions explored key informants' perspectives on the strengths and weaknesses of existing approaches to the unsettled infant, and their perspectives on what was required to improve outcomes for the infant and family from both a service delivery and management perspective.

Data analysis

To enhance rigour, a sample of seven transcribed interviews was independently analysed by P. S. D. and two independent researchers. Conceptual saturation was reached when no new codes were generated. The key themes and categories were then compared (Hansen 2006), and following discussion and consensus, reconciled (Baxter and Eyles 1997). Using these themes, R. E. M. then analysed the entire dataset, with P. S. D. cross-checking the analysis against the agreed coding.

The final report was reviewed and validated by all key informants (Whittemore *et al.* 2001).

Results

To preserve participant confidentiality, a category with a code number was assigned to each key informant based on the following designated groups: PCPs, midwives, allied health professionals (AHP), non-GP medical specialists, and family therapists and counsellors (Table 1).

Early intervention in the primary care setting is vital

All Australian participants identified that poor co-ordination of care and major gaps in health service provision post-birth impact negatively on outcomes for unsettled infants and their families: 'There are a lot of facilities that are available but the consistency isn't there. It is a bit of a postcode lottery' (AHP 5). Services are 'not staffed well enough [so that the] child doesn't get the proper service when they are there' (AHP 6). All midwives emphasised the need for continuity of care provided by a primary care model.

Without a doubt continuity of care through pregnancy, birth and postnatal period leads to better breastfeeding, more settled babies, less postnatal depression. (Midwife 4)

Most of the health professionals expressed concern that both maternal and infant distress are rapidly entrenched if treatable problems are not identified and managed in the first days and weeks post-birth.

All the evidence, all the neuro evidence, everything points to [the need for] a good early start. (Family therapist 2)

You do have to move as quickly and as expertly as you can, in order that the baby and the mother haven't got into a huge pattern of distress. Delay in intervention cause problems to become integrated in the [family's] mental representation of the baby. And it gets harder to change. (Medical specialist 2)

If we could just put a few things into place [for unsettled babies and their families] a lot earlier, we wouldn't have some of the things that the babies are presenting with at a later stage. (AHP 2)

[Health professionals] in the community have the early contact with families and they have the ability to help. I think of how many kids who have complex issues who

Table 1. Key informants by professional category

	Health professional groups	Abbreviations	Health disciplines	Total number
Primary care practitioners (PCP)	General practitioners	GP	General practice, lactation consultancy, child health nursing	5
	General practitioners qualified as lactation consultants	GP-IBCLC		
	Child health nurses	Child health nurse		
Midwives	Midwives	Midwife	Midwifery	6
Referral Practitioners	Allied health professionals	AHP	Occupational therapy, speech pathology, paediatric physiotherapy	7
	Medical specialists (other than GPs)	Medical specialist	Paediatrics, perinatal psychiatry	3
	Family therapists and counsellors	Family therapist	Social work, psychology	3

started out without them and they could have been helped. [Primary care intervention] has the potential to greatly reduce the number of children coming into tertiary services. I think it is a much better investment of time. (AHP 6)

This consensus of opinion among key informants is consistent with evidence that shows that by the time unsettled babies and their mothers present to hospital outpatient departments, or are admitted to expensive tertiary residential units, most have tried multiple health services (McCallum *et al.* 2011). This consensus of opinion is also consistent with evidence that biological and psychosocial risk factors in mother and baby interact early on to interfere with mutual regulation, habituating disrupted mother–child dynamics. A small but significant proportion of these infants are then at risk of developing childhood feeding disorders, and long-term psychological disturbance including deficits in adaptive behaviour and social skills in the preschool years (Schmid *et al.* 2010, 2011; Hemmi *et al.* 2011).

Improved cross-professional communication is required

Accessing cross-professional support for the families of unsettled babies was reported to be a time-consuming and difficult process by many participants. For example, one informant explained that crying babies who were referred to outpatient speech pathologists needed to go through hospital paediatricians and were subject to lengthy delays: ‘Often GPs may have wanted to refer for other opinions and can’t so they stopped trying’ (AHP 5).

There is not a great transition of care between any of the players. Sometimes when they are co-located it can work better. The way the system is set up – we don’t have universal records. There is not good communication. The information flow-back to GPs is not as good as it could be. In some areas we do better than others. In smaller towns it is sometimes easier. It is incredible the breakdown in communication that occurs every step of the way and how that adds health system risk. (Midwife 4)

Two medical specialists discussed their involvement in multidisciplinary residential programs for unsettled babies and their mothers, and a child health nurse described the delivery of group programs for new mothers by multidisciplinary teams. A family therapist in a tertiary setting described the benefits of conducting joint consultations with an AHP as they dealt with unsettled babies and their mothers, and two GPs, including one of those qualified as a lactation consultant, described successful collaboration concerning this problem with co-located practice nurses. However, these examples of positive cross-professional collaborations either occurred in tertiary or residential settings, or are not widely available and easily accessible in the community. All health professionals that we interviewed agreed that improved outcomes for unsettled babies and their families requires improved cross-professional communication.

Deficits in primary care practitioners’ knowledge base and management behaviours need to be addressed

Midwives, medical specialists and referral practitioners expressed concern about factors contributing to unsettled infant

behaviour that were often not adequately identified and managed in the community.

[It] depends too much on variations in interest and quality variations in providers. There is no system of quality care in postnatal care. (Midwife 2)

Each referral practitioner and medical specialist tended to emphasise the factors relevant to their own disciplinary focus. A non-IBCLC GP explained that after organic disturbance was excluded, she offered reassurance and emotional support. Midwives, medical specialists and referral practitioners acknowledged that most GPs and child health nurses offered conscientious care in time-pressured environments, but these key informants also emphasised what they considered to be serious limitations to existing primary care approaches. They identified five topics about which PCPs required more education. These topics were:

- avoidance of inappropriate medicalisation
- identification and management of feeding difficulty
- identification and management of perinatal anxiety and depression
- benefits of cue-based care
- benefits of adequate opportunities for sensory integration.

Avoidance of inappropriate medical diagnoses

Most informants complained that inappropriate medical diagnoses cause health professionals to overlook other treatable factors that contribute to the problem of infant crying.

We have this array of quasi-, pseudo-diagnoses that we give mothers and baby – lactose intolerance, colic, reflux – and a range of remedies, both complementary, over the counter and prescribed including [surgery], that don’t address the needs of baby and mum. (Midwife 2)

A lot of what we do is very mechanistic, [because we believe] there’s got to be a solution for this. Recognising that there’s not a solution often and that you’re in there for the long haul [is what’s important]. (Midwife 1)

Most participants considered that the diagnosis of gastroesophageal reflux disease in otherwise healthy, full-term infants with persistent crying under 3–4 months of age is usually mistaken, a perspective consistent with the evidence (Vandenplas *et al.* 2007; Sherman *et al.* 2009; van der Pol *et al.* 2011). However, the word ‘reflux’ was intermittently used as a synonym for ‘unsettled’, e.g. ‘reflux baby’, by six health professionals, four of whom had had their own offspring diagnosed with infant gastroesophageal reflux disease. This suggests that ‘reflux’ remains a popular explanatory narrative, still deeply entrenched in even very experienced clinicians. This tension between the evidence and a persistent medicalised discourse may be complicated by the higher proportion of prematurely born infants – commonly diagnosed with gastroesophageal reflux disease (Golski *et al.* 2010) – presenting with unsettled behaviours to hospital-based referral practitioners. It is also possible that a legitimate diagnosis of gastroesophageal reflux disease in an older infant is retrospectively extrapolated

backwards, to become an explanatory model for cry-fuss problems in the first few months of life (Douglas 2005).

Identification and management of feeding difficulty

There was consensus among key informants that unidentified and unmanaged feeding difficulty quickly entrenches maternal anxiety, unsettled infant behaviours, disrupted mother–infant relations, and, in some cases, feeding difficulties long term.

Feeding is something that one week is a little issue, but if it is not addressed, it can really escalate and become a big issue. (AHP 6)

I think some [unsettled] babies are weaned too early from the breast, and put on cow's milk protein formula. And therefore if, for example, the baby has allergy, they would have been much better kept on the breast with mother restricting her diet. So I've seen some babies that have ended up on tube feeding because there's very early weaning, and then they don't take to the bottle. So rather than re-establishing breastfeeding, they've [changed] formula, [changed] formula, [changed] formula. The baby's not having a bar of it ... then the mothers understandably get anxious and start doing slight force-feeding, and then it's more forceful. And what they report to me is they get told to make sure the baby gets 'x' amount. So somehow they think that magically best is to swallow for the baby and it's their job and [the baby will get] better; and there's no help with all that. And then they end up with a nasogastric tube, and then an awful time trying to wean them off it. (Family therapist 3)

I'm particularly upset when I hear of mothers who've been told they need to use formula supplementation without somebody watching a feed. (PCP 2)

This concern that feeding difficulties are often unidentified and unmanaged in crying babies is corroborated by a growing body of evidence concerning the neural bases of mother–infant interactions, the neuroplasticity of the infant brain and the links between aversive feeding behaviours and infant cry-fuss problems (Evans *et al.* 1995; Miller-Loncar *et al.* 2004; Davies *et al.* 2006; Swain *et al.* 2007; Ammaniti *et al.* 2010; Schmid *et al.* 2010; Barrett and Fleming 2011; Douglas and Hill 2011).

Most medical specialists, family therapists and child health nurses expressed concern that overly zealous breastfeeding advocacy accentuates maternal guilt. The consensus that feeding difficulty is an important, often overlooked factor contributing to unsettled behaviour in both breast- and bottle-fed infants is also consistent with the evidence that doctors, nurses and midwives – even those with positive attitudes to or personal experience with breastfeeding – have significant knowledge deficits concerning infant feeding (Cantrill *et al.* 2003; Brodribb *et al.* 2008; Flowers 2008; Feldman-Winter *et al.* 2010). The Australian National Breastfeeding Strategy 2010–15 calls for the provision of training to facilitate consistent evidence-based breastfeeding advice and support by health professionals, and collaborative partnerships between lactation services and health professionals (Commonwealth of Australia 2009b), strategies that have important implications for unsettled infants and their families.

Identification and management of perinatal anxiety and depression

All informants stated that in their experience, maternal anxiety both contributes to, and results from, infant distress, and that this is a widely underestimated factor.

They've never seen a baby, they've never had a baby, they don't know what babies do, so that there's this whole continuum that we need to consider before we immediately put everyone into a more medical model of assessment, I think. (PCP 5)

I hesitate to say normalise feeling bad, but to at least put it into the, 'Hey it's normal to feel stressed'. Of course a lot of the women you're talking about won't be depressed; if we can get in early, hopefully they won't be depressed; so we don't probably want to use that term. But to talk about stress, because if its mum's anxiety about baby adding to the babies being unsettled, whilst it may not be the cause, it's certainly not going to help. And that's the thing that I think is not dealt with all that well. (Medical specialist 1)

Our informants agreed that screening for perinatal anxiety and depression and psychosocial risk in the mothers of unsettled babies is vital. McCallum *et al.* (2011) found that new mothers with perinatal anxiety and depression are now more inclined to seek the help of their GP and more likely to receive satisfying help. However, most informants also cautioned that unnecessary medicalisation may disempower mothers, stressing the need for PCPs to be educated in appropriate application of screening tools.

Informing parents about the benefits of cue-based care

Almost all of the 24 health professionals interviewed strongly advocated cue-based care in the first few months of life (though varying terms for this were used), often referring to recent research in neurodevelopment. These health professionals expressed concern that popular regulatory (or behavioural) approaches, applied prematurely, not only fail to settle babies, but may trigger cycles of stress between mother and baby, and should not be advocated for this population. One participant commented:

I think sometimes as health professionals we demonstrate how not to read their cues. (AHP 6)

The family therapists emphasised that it can be very difficult to read the cues of an unsettled baby, and that professional help may be necessary. Three informants argued for behavioural approaches to infant sleep from six weeks, findings that point to inter-professional tension over sleep approaches. Although most thought that sleep regulation may have a place when the child is older, the appropriate age to commence behavioural methods remained highly contested, and was generally thought to be a matter best weighed up according to the unique needs of each family, and not suitable for crying babies in the first months of life.

Our great focus really is on helping parents to better understand their babies and see them as intentional beings and to support their relationships with their babies, so that

they can more better manage, more easily manage the struggles they're having. Or perhaps they can see their baby in a different way, or perhaps even start to think about [how] what they bring affects their babies as well. (Family therapist 2)

The key informant's advocacy of cue-based care is consistent with evidence that early introduction of behavioural approaches to sleep do not improve infant crying (St James-Roberts *et al.* 2001; Symond *et al.* 2005); that cue-based breastfeeding is more likely to succeed (Hill *et al.* 2005; Kent *et al.* 2006; McCormick *et al.* 2010); and that cue-based care combined with ample physical contact from birth, applied even moderately, is associated with more settled infant behaviour (St James-Roberts *et al.* 2006; Wolke *et al.* 2011).

Informing parents about the benefits of adequate opportunities for sensory integration

All health professionals emphasised the importance of optimising sensory integration in this population, though various terms were used for this concept. Sensory integration refers to the neurological processes that organise input from multiple sensory modalities so that the body functions effectively in its environment. There was consensus among participants that inadequate opportunities for sensory integration contribute to unsettled infant behaviour. 'Then you think, what am I missing here? And a lot of the time, its actually sensory neglect' (AHP 2). Allied health professionals detailed the importance of supporting parents in confident and plentiful handling and carrying of their infant, offering rich opportunities for sensory integration; of allowing intermittent prone time while the baby is awake, and of assessing him or her for sensory hyper- or hypo-reactivity.

[We] also work very closely with mothers to help them understand the sensory processing style the child has. How sensory processes can influence state. Again these are autonomic signs of stress. There are more specific questions which we go through, whether they like movement, whether they cope with lots of noise around them, with textures, what sort of handling they like, feel it out a little bit more and what you get is a spectrum [and] if there is really averse behaviour at either end of the spectrum. (AHP 1)

These findings are consistent with evidence that skin-to-skin contact settles babies in the immediate postpartum (Moore *et al.* 2007); that oral motor dysfunction and later sensory processing problems are associated with unsettled infant behaviour (DeSantis *et al.* 2004; Miller-Loncar *et al.* 2004); that inadequate sensory and motor nourishment compromises the developing architecture of the infant brain (Sweeney *et al.* 2010); that wrapping and infant massage may have benefits for some unsettled babies and their families (Underdown *et al.* 2006; van Sleuwen *et al.* 2007); and that babies who are carried regularly in combination with cue-based care from birth – importantly, even at moderate levels – are more settled (St James-Roberts *et al.* 2006; Wolke *et al.* 2011).

Conclusion

This study is limited by a small number of participants, so the perspectives of the key informants in our study may not be

representative of their disciplines. Nevertheless, while previous research in this topic has been characterised by discipline-specific approaches (Douglas and Hiscock 2010; Douglas *et al.* 2011), this study provides a first attempt to elucidate and synthesise the perspectives of PCPs, midwives, AHPs, medical specialists and family therapists involved in the management of unsettled infants and their families.

International evidence demonstrates the benefits of cross-professional collaboration in maternity care (Downe *et al.* 2010; Martin and Kasperski 2010). The Australian Government is calling for research to develop local strategies for integrated multidisciplinary care for mothers and babies (Commonwealth of Australia 2009a), a priority now endorsed by National Health and Medical Research Council (2010) guidelines. Significantly, however, current responses have focussed almost exclusively on antenatal and intrapartum care, despite evidence that parents are dissatisfied with post-birth care nationwide. Unsettled infant behaviour is associated with increased use of multiple health services, including of emergency departments (McCallum *et al.* 2011), and is a marker of maternal and infant distress. Although an Australian study has not been performed, a 2001 analysis in the UK found that professionals' time devoted to unsettled infants aged 1–3 months cost the National Health Service £66 million annually (Morris *et al.* 2001). By the time the family of an unsettled baby reaches expensive tertiary or residential services, maternal and infant distress is often entrenched. Our study adds weight to the argument that a focus on improving service delivery and the management behaviours of PCPs dealing with the unsettled baby is a vital way of improving service delivery and management post-birth (Douglas and Hiscock 2010; McCallum *et al.* 2011). There was consensus among our key informants that implementation of three key strategies will improve outcomes: early, primary care intervention; better cross-professional communication; and education that improves the knowledge base and management behaviours of PCPs.

We conclude from our analysis that the development of education resources, best practice guidelines and shared assessment frameworks for PCPs who deal with unsettled infants in the first few months of life and their families, and the development of strategies for improved cross-professional communication, are required to improve the health outcomes and decrease the burden of this complex post-birth problem. Informed by these findings, a new interdisciplinary primary care clinic for unsettled babies, located in Brisbane, Queensland, is currently undergoing evaluation.

Conflicts of interest

In 2010 the corresponding author received a \$10 000 school-based scholarship administered by the Children's Nutrition Research Centre, The University of Queensland, and funded by Bayer Australia, to develop training materials for health professionals dealing with crying babies.

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