



Exploring mothers' perspectives on the early mother-infant relationship to inform midwifery practice: A qualitative study

Cathy Stoodley^{a,*}, Lois McKellar^{a,b}, Jennifer Fereday^a, Tahereh Ziaian^c, Mary Steen^{a,d}, Ian Gwilt^e

^a Clinical & Health Sciences, University of South Australia, GPO Box 2471, Adelaide, SA 5001, Australia

^b Australia Catholic University, Victoria, Australia

^c Justice & Society, University of South Australia, Australia

^d Curtin University, Western Australia, Australia

^e UniSA: Creative, University of South Australia, Australia

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ABSTRACT

Background: The mother-infant relationship plays a crucial role in individual and community health. The nature of the mother-infant relationship can influence the social and emotional development of the infant, impacting their lifelong health. Midwives are key in providing health promotion for women and babies and are ideally placed to support women during the early development of the mother-infant relationship.

Aims: This study aimed to explore new mothers' perspectives on developing the early mother-infant relationship to inform midwifery practice.

Methods: This study is phase one of a mixed-method, exploratory sequential design project. In this phase, 14 women were interviewed within six weeks of birth to explore experiences that influenced the developing relationship with their baby. To support reflection women were provided with a visual prompt activity. These interviews informed the co-design workshops to develop an intervention to support midwives to promote the early mother infant relationship. A research protocol was published prior to undertaking the study, however as this research did not seek to modify or measure any health related outcomes it was not registered as a clinical trial.

Results: Key themes from the interviews included: making moments that matter; the role of the village; feeling like I'm winning; supportive health professionals, and forming a new family. These themes underpinned strategies to support the mother-infant relationship.

Conclusion: The findings from this study offer ways for midwives to support the emerging mother-infant relationship during the early postnatal period. Facilitating mothers to engage with their baby as well as integrating key people is important. Midwives also play a key role in building maternal confidence and competence. Further research is needed to embed and evaluate strategies in midwifery practice.

Background

The relationship between the mother and their infant is central to the infant's early development, significantly influencing their mental, physical, social and emotional health. This relationship is commonly described in terms of bonding and attachment and while these terms are used interchangeably, they have distinct definitions (Nakić Radoš et al., 2024). Maternal-infant bonding is a one-way directional emotional connection from the mother to their infant, beginning during pregnancy (known as the maternal-fetal bond) and gradually developing over the

first year of life (Tichelman et al., 2019; Cuijilts et al., 2019). In contrast, attachment involves a reciprocal relationship between the mother and infant. This attachment is characterised by how the infant uses their mother/caregiver as a source of security while they engage in exploratory behaviours (Tichelman et al., 2019). Developing secure attachment is essential for optimal social and emotional development (Dudek et al., 2020). If secure attachment does not occur, the infant may experience disruption in their developing brain, influencing long-term physical and emotional health (Dudek et al., 2020). Primarily, attachment theories have been based on Western middle-class societies, with

* Corresponding author.

E-mail address: cathy.stoodley@unisa.edu.au (C. Stoodley).

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limited cross-cultural studies. However, it is widely agreed that attachment is a universal concept and culture has a significant role in the demonstration, expression, and meaning of attachment behaviours (Voges et al., 2019).

The maternal-infant relationship develops during pregnancy, birth, and postnatally. Encouraging positive mother-infant contact during these periods can enhance the emerging relationship (Cuijilts et al., 2019; Nakić Radoš et al., 2024). Kennell and Klaus (1984) (p.276) initially identified the 'sensitive period,' from the first few hours or days after birth, as a critical time for the mother-infant relationship. Since then, the sensitive period has been redefined to include pregnancy and the first few weeks and months of life (Nakić Radoš et al., 2024). During pregnancy, the maternal-fetal bond can be cultivated through activities involving the mother communicating with their baby through touch, speech and visualization (Shreffler et al., 2021). The quality of the maternal-fetal bond has a crucial role in the development of the mother-infant bond and maternal sensitivity and responsiveness (Shreffler et al., 2021).

The role of the midwife

Midwives are uniquely positioned to support the mother-infant relationship as they provide care across a continuum, beginning during pregnancy, through to the early weeks after birth (WHO, 2023). Midwifery care engages a partnership model centring care around the woman and family, promoting a positive pregnancy, physiological birth and transition to motherhood (Brady et al., 2019). A report by the Australian Mental Health and Parenting Working Committee on ways to promote infants' social and emotional development and wellbeing in pregnancy and the first year of life, concluded that antenatal and postnatal interventions provided by trained professionals have numerous benefits (NHMRC, 2017). These benefits include improved cognitive and social development, infant mental health, sleep, preventive care/health-promoting behaviours, parents' knowledge of infant behaviour, parenting quality, and reduced maltreatment (NHMRC, 2017). Understanding how midwives might support the mother-infant relationship is important. Commonly, midwifery research in the postnatal period has focused on aspects such as, satisfaction (Johansson et al., 2019; Panth and Kafle, 2018; Lai et al., 2024), parenting self-efficacy and perceptions (Botha et al., 2020), early discharge

(Skarsgaard et al., 2024) and breastfeeding challenges (Feenstra et al., 2018). There has been no research exploring how mothers perceive developing their relationship with their baby and factors that influence this. Gaining this insight could inform how midwifery care can support the emerging mother-infant relationship.

This study aimed to explore mothers' perspectives on developing the early mother-infant relationship to inform midwifery practice.

Methods

This study, undertaken as a PhD program of research, employed a three phase, exploratory sequential mixed methods design. Phase one included a scoping review (Stoodley et al., 2023), interviews with mothers, and co-design workshops to explore ways to support the emerging mother-infant relationship. Phase one informed phases two and three in which an intervention was developed and evaluated (Fig. 1). A research protocol was published prior to commencing the study with the initial intent of evaluating a clinical intervention (Stoodley et al., 2021), however based on the findings from the interviews and subsequent codesign workshops, the proposed intervention was not a clinical intervention, rather an educational activity for midwives specifically addressing knowledge, skills and confidence in supporting the early mother-baby relationship. As the intervention did not seek to modify or measure any health related outcomes it was not registered as a clinical trial (Noyes, 2021). This paper reports on phase one, the interviews with women which sought to understand their early postnatal experiences and what influenced the emerging mother-infant relationship.

Participants were recruited in May 2021 from a postnatal ward in a large, multi-cultural, metropolitan hospital in South Australia using nonprobability purposive sampling. Mothers who met the inclusion criteria (Table 1) and consented to participate were asked to complete a short anonymous demographic survey.

Participants were given an activity pack before hospital discharge, with prompts designed to encourage mothers to reflect on early experiences with their baby. These included a Polaroid camera, a visual journal and a pen. The mothers were asked to capture experiences by taking a daily photograph and describing what helped them to get to know and respond to their baby during the first two weeks. The participant's visual diaries and photos were utilized to help prompt their

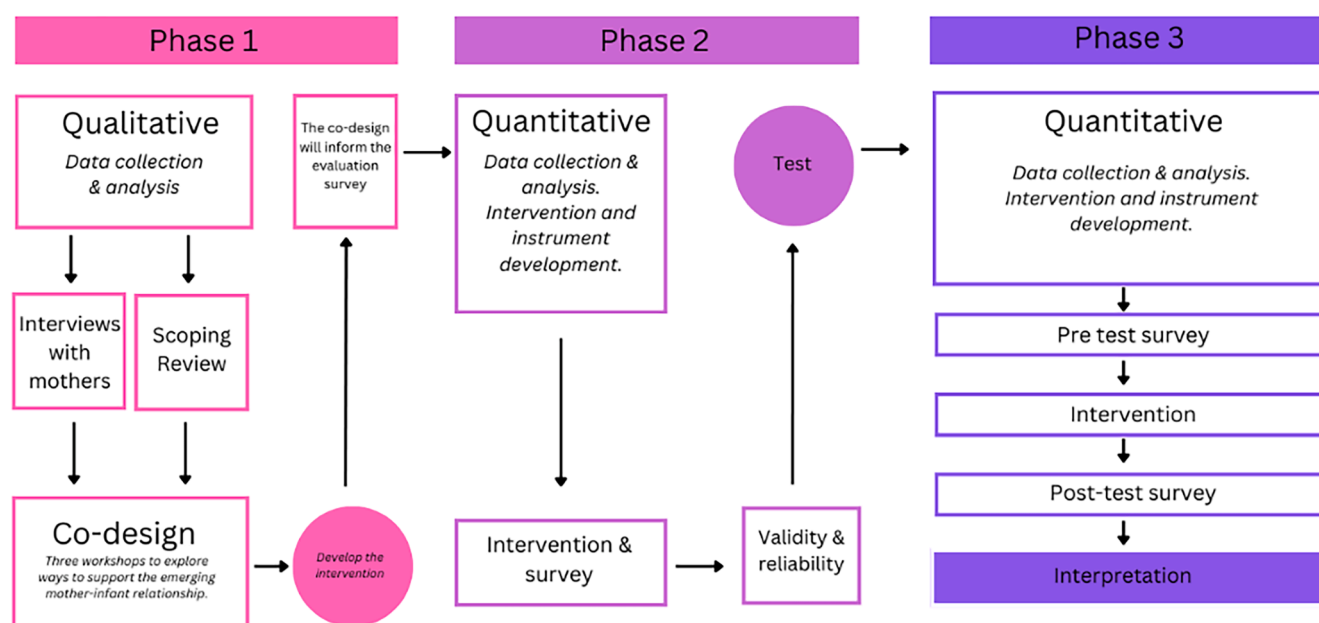


Fig. 1. Mixed method study.

Table 1
Phase 1 inclusion and exclusion criteria.

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> Primiparous woman Over 18 years old ANRQ^a <23 and EPDS^b <13 (completed at first antenatal visit) Baby Direct Room (DRI) (Zero separation) Term labour and birth The word 'birth' is inclusive of: <ul style="list-style-type: none"> Physiological Vaginal Birth Instrumental (ventouse or forceps) Caesarean Section (emergency or elective) 	<ul style="list-style-type: none"> Multiparous woman Under 18 years of age Inability to give informed consent. ANRQ^a >23 and EPDS^b >13 Preterm labour and/or birth Complications that may influence bonding. Baby is an inpatient in Special Care Nursery (SCN) or Neonatal Intensive care (NICU) Any previous mental illness history

^a ANRQ: Antenatal Risk Questionnaire; Antenatal Risk Questionnaire is a self-report 12-item psychosocial assessment screening tool administered during the antenatal period, which aids in predicting women who may develop postnatal depression. A score of 23 or more may suggest the presence of significant psychosocial risk factors that require consideration in mental health care planning (Austin et al., 2013).

^b EPDS: Edinburgh Postnatal Depression Scale; the Edinburgh Postnatal Depression Scale is a self-report 10-item measure designed to screen women for symptoms of emotional distress during pregnancy and the postnatal period, reflecting the woman's experience in the last seven days. A score of 13 or more and/or a positive answer to question 10 also needs to be considered as potentially clinically significant; therefore, mental health care planning should be considered (Cox et al., 1987)

reflection during the interview and were not included in the formal analysis. Photo elicitation is a research tool used to generate data by capturing the participants' lived experiences and was used in this study to guide the discussion during the interviews. Using visual images during an interview can enrich communication between the researcher and participant, providing richer and more profound insights (Glegg, 2019).

Data collection

The semi-structured, individual interviews were conducted four to six weeks after birth by the lead author (CS) in June and July 2021. The participants were given the option to have their interviews conducted in person in their homes or via Zoom. The mothers discussed their visual journey and reflections, prompted by a few guided questions to understand what they found helpful and/or unhelpful in getting to know their baby and supporting the emerging mother-infant relationship (Table 2). The participant's visual diaries and photos were utilised to prompt their reflection during the interview and were not included in the formal analysis. The interviews were audio-recorded and transcribed verbatim, preserving the participant's experiences (Braun et al., 2018).

Data analysis

The interviews were de-identified and exported into NVivo 12. The data was analysed using thematic analysis using the six phases outlined by Braun et al. (2018) (reading, familiarisation of the data, generating codes, constructing themes, reviewing themes, defining and naming

themes and writing: finalizing analysis a report). The data was read and reread by the lead researcher (PhD candidate, CS) to identify codes and themes and reviewed by the second author (Supervisor, LM) (Braun et al., 2018). Then all authors discussed the findings, and a final consensus was reached.

Ethics

The study was approved by the Human Research Ethics Application Women's and Children's Health Network approved the study on February 11, 2021 (application: 2020/HRE01717; (HREC/20/WCHN/154). In addition, the University of South Australia Human Research Ethics Committee also approved this project (Ethics Protocol 203776).

Researchers' characteristics and reflexivity

The first author, a PhD student, received training in qualitative interview techniques to strengthen credibility and conducted all the interviews. All other authors have post-doctoral qualifications and have significant experience with qualitative research methods. All authors had no prior relationship with the participants.

Findings

Fourteen mothers participated in this study, 13 undertook the interviews in person and one online. The demographics of the participants are presented in Fig. 2. The age of the mothers ranged between 26 to over 36 years, with most mothers aged between 31 to 35 years. This is consistent with Australian demographics, with a rise in maternal age (Australian Institute of Health and Welfare, 2023). with many receiving care in a midwifery group practice model and more than 50% experiencing a physiological vaginal birth. Interestingly, seven mothers (50%) represented a variety of cultural backgrounds.

Themes

Throughout the data, there were clear themes about factors influencing the mother-infant relationship. Five main themes, with associated subthemes, were identified (Fig. 3). These included: making moments that matter, the role of the village, feeling like I'm winning, supportive health professionals and forming a new family. The themes and subthemes are presented with verbatim quotes.

Making moments that matter

The women described important moments of connection that facilitated the relationship with their baby. These moments of connection were between the mother and baby but also included their partner and family members. Notably, these moments were often enhanced through culturally influenced activities. There were four sub-themes within this theme.

Connection moments between mother & baby

The first moments together after birth and in the early postnatal period were particularly memorable for the mothers, with many describing their thoughts and feelings.

Table 2
Semi-structured interview questions with example probes.

How did you find the activity?
What did you find that was easy in getting to know your baby? (Could you share why you chose to take this picture and/or words)?
What did you feel was tricky in getting to know your baby?
What was your favourite picture?
Looking back at what you did, what do you think about the experience now?
Do you think doing this activity was helpful in getting to know your baby? If no/yes, why?
There are a few other questions I would like to explore; do you remember having skin-to-skin after birth?
Reflecting on your time in the hospital and when you first came home, was there something midwives could do to help support you in getting to know your baby?

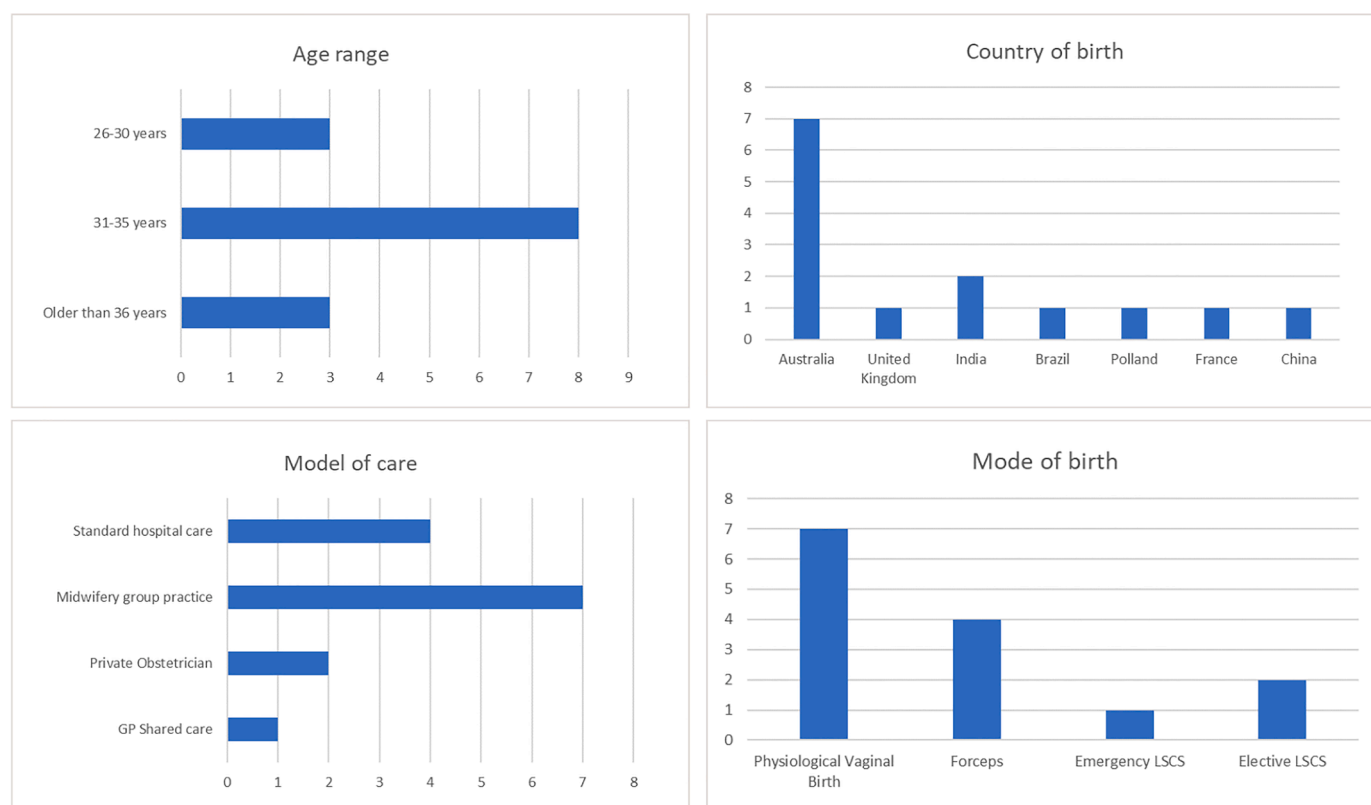


Fig. 2. Participant demographics.

Themes

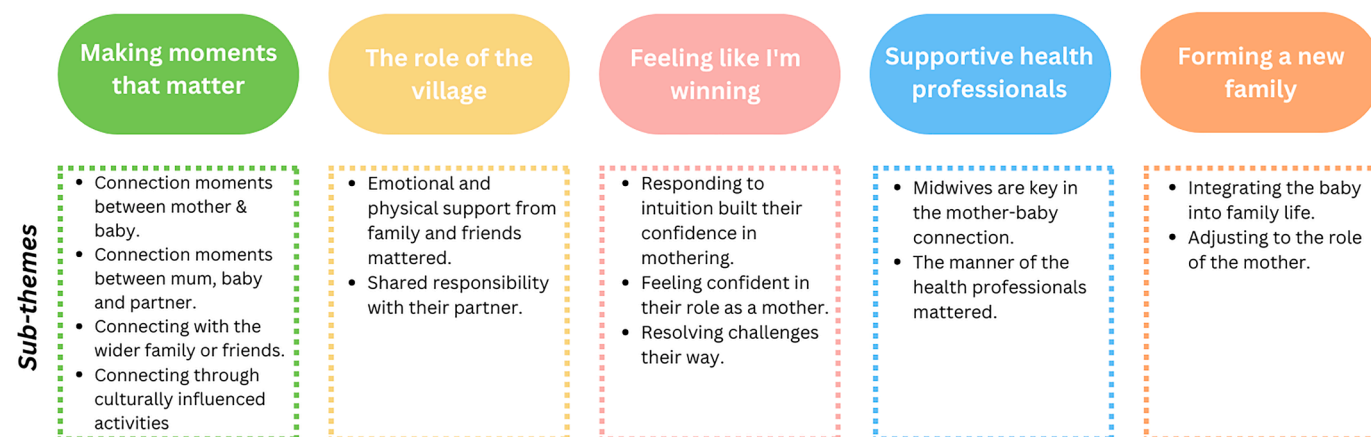


Fig. 3. Themes and subthemes.

009: They put this wriggly little, like warm little thing on you, and I was just – she was just warm.... And I remember just looking at her fingers, and her fingernails were coming off, and I just have that picture in my head.

Initial skin-to-skin was recalled, with some mothers commenting on how they continued with intentional 'skin-to-skin' during the postnatal period, which also provided an opportunity for the partner.

013: We were doing skin-to-skin every day as much as we could, but both of us were actually....[we] put a blanket of top of each other and just deliberately lay in bed together focusing on that moment. I think we were doing that the first week more, first couple of weeks more consistently.

The first night together was special for many mothers as it provided time alone with their baby and space to reflect and connect. Feeding, cuddling and close physical contact made a difference. Many women acknowledged that eye contact with their baby and sensing the baby communicating with them influenced the relationship.

002: Sometimes I get emotional when he looks for me, I feel like oh my god, finally my baby knows who's his mum and his dad.

Importantly, all mothers described that spending time with their baby through everyday activities helped them get to know and bond with their baby.

004: *Spending time with him and caring for him is just what makes you get to know him, and then you get to see all the little quirks and like, the little faces that he makes.*

Connection moments between mother, baby and partner

Time together with the partner and baby as a family was also reported as positively influencing the mother-baby relationship. This involved spending time together and sharing 'firsts'.

001: *we've had a few moments where we've kind of all just been snuggled up on the couch or things like that and then [partner] being home for the whole six weeks as well was really helpful in building that relationship as well.*

008: *That's pretty much what this [journal] is filled with – all the first times that we did a lot of things.*

Involving the partner in regular activities such as bath time, feeding and reading to the baby also appeared to support the mother-infant relationship and gave the partner a chance to bond.

011: *We'd started the bath from when got home, every night as a bedtime routine and I think that really helped me bond with her and also helped [partner] bond with her. Because that was something he could be involved with as well.*

Connecting with the wider family/friends

For many mothers, connecting with the broader family was also valued.

003: *My mum and my brother.... they came over so that was special time... My bond with my mum is very strong so it means a lot that she will have a strong bond with [baby].*

During this study, Covid-19 restrictions impacted interstate/inter-national family's visits. Therefore, several families relied on digital means such as Facetime to connect and share memorable moments.

006: *I'm from Poland he's from Malaysia. So we are, all the time on the phone, Facetime it's, is lifesaver..., he was bathing her, he was taking care of everything. And I was only the person with the phones, just calling to one grandparent, second grandparent just to connect.*

Connecting through culturally influenced activities

The mother-baby relationship was enhanced by connecting through cultural activities. Several mothers described how they intentionally spoke their native language when interacting with their baby.

004: *I'm really invested in speaking Portuguese to him and getting him to learn the language, so that's something that I'm really mindful of.*

While some mothers discussed how cultural activities such as music, reading and toys enriched their bond.

012: *I bought some books from where I come from and some toys. I will start to – like to do some reading to him even though he doesn't understand much. Yes. And we're trying to ... like a bilingual.*

The role of the village

The mothers described how support from family and friends helped them develop their relationship with their baby. This included: emotional and physical support, guidance from people with experience and shared responsibility with their partner.

Emotional and physical support from family and friends matters

Having emotional and physical support from family and friends made a significant difference such as time to rest and help with meals,

002: *when my family was there,it was a very easy day and I think we build a good bond especially me because I got a much, much time to relax for sleep then I can spend the quality of time with my baby.*

Others spoke about how this support contributed to positive mental health,

011: *Well, it helps my mental health because I'm not stressed and I've got some more energy and then it just gives me one on one time with my baby to get to know her, have more cuddles, lay on the mat together, read more stories....I wouldn't be able to do all of it if I was trying to juggle all of the cooking and housework as well.*

Mothers also highlighted the need for guidance from people who had lived experience and could offer help and advice.

001: *I've got probably three or four friends who know what I'm going through because they're going through the same kind of thing. So, it's good to talk to them about it because as much as everyone goes oh yeah, we understand and it must be really difficult, they actually know what it feels like.*

Shared responsibility with their partner

Many participants spoke about the significance of having their partner engaged and learning together, and how this impacted their confidence.

011: *He had a couple of weeks off, which again was lovely for the bonding time, because I just felt more confident having him around. I think I would have felt quite scared if I was going completely by myself.*

Others commented on the benefit of practical support from their partners, which gave them time to just hold their baby.

014: *we didn't have any family come round cook meals or do cleaning. So, I would hold [baby] and [partner] did all of the cooking and cleaning for the first few weeks.*

Some mothers talked about the positive impact of sharing the responsibility of feeding and caring with their partner.

013: *I couldn't imagine doing it by myself. I was clearly really needing him we were definitely a team. I don't think I would have been able to get through the first two weeks without him.*

Feeling like I'm winning

The mothers identified that feeling 'successful' through this transitional time positively influenced the relationship with their baby. This included: responding intuitively, feeling confident in their role and resolving challenges in their way.

Responding to intuition builds confidence

Several mothers described the importance of drawing on their instincts when developing their mother-baby relationship.

008: *I think the bonding initially was more instinct, and I guess, as an early childhood teacher myself, I remember thinking, I haven't read to her yet, I should read to her, but then part of me thought, she's not ready for reading.... So, I mainly talked to her in the first couple of weeks, so that was more instinct.*

Some acknowledged the importance of trusting their instincts rather than following advice that they felt wasn't relevant to their situation.

011: *I think you – we don't tap into our instincts enough. I think there's too much information now and it gets you, an information overload gets you second guessing yourself and comparing your baby to others. And they really are so individual.*

Feeling confident in the role of mother

Many mothers highlighted the role confidence played, explicitly describing how important it was to them to learn more about their baby's needs.

007: We sort of had a routine going and then all of a sudden you know, as babies do, they change ... So yes, we were very confident and then you know... It changes with every time they change. You know, when they change you think oh right another lesson; I've got to learn something new. I've got to adapt and change.

Many recognised that breastfeeding impacted their confidence, especially when they felt they could manage it well.

006: Second night when we, we got it, we got it. And before that I wasn't very confident to leave the hospital And I think my milk supply came that day, and that's why, that's why it was easier.

Resolving challenges their way

Resolving challenges and experiencing some 'wins' influenced the mother-baby connection positively.

008: Together, we are figuring out the best way to do things, because that's what it felt like at the time, just trial and error, and now she loves bath time, now that I've figured out how to do it properly....

Many women reported a sense of achievement and greater connection when they felt they had 'worked out' their baby's needs.

014: It just means that once she's settled and I've figured out what she wants, I feel like I've done my job as her mum and – it's so hard in those first two weeks, because they don't know what they want, and you don't know what they want. So once you figure out what it is and she's calm, you feel like you can connect with her a bit more, because you're not stressing about what she wants.

Being in control and making their own decisions about the baby also seemed significant, particularly after they became more confident in their role as a mother after the first few weeks.

011: We were just inundated with visitors and I just didn't feel confident enough to say no initially. And I realized that – that really affected our journey in the first couple of weeks. So since then I've been putting my foot down a bit more and just having quieter days, scheduling in less stuff.

Supportive health professionals

Several mothers described the support they received from health professionals helped the mother-baby connection. This included midwives, Child and Family Health Nurses (CAFHS) and lactation consultants. Being available, interested, warm, caring, knowledgeable and reassuring were important attributes.

Midwives are key in the mother-baby connection

Providing emotional and/or physical support during midwifery care gave mothers space to focus on their baby.

007: I think just knowing that they were looking after me so that I could focus on him... Like they were checking my wound and they were giving the medication ... so that I didn't have to, there was just someone helping me, not just my baby or helping me so that I could help my baby.

Some of the women appreciated having a variety of midwives provide care as they obtained various perspectives.

011: I just wanted to get lots of opinions, expert opinions, because you read a lot of, I've got a million books and I don't think those books build your confidence at all.... And just gave us a lot of tools, so we felt like we had a few things in our toolkit, so if one thing wasn't working, we could

try a different position or a different settling technique. So, giving us a bit more confidence and power was really helpful.

While others found that continuity of midwifery care was beneficial.

010: I was placed in Midwifery Group Practice, and they would not care about the time. They just helped with everything. It was very personalized.

The manner of the professionals mattered

The mothers also reported that they valued the health professional being available and interested in supporting them.

014: There was one the next day and she was really good, she asked if I wanted her to settle [baby] because she was crying, and I said, that would be fantastic, and she did. One of them offered to change her, which was really helpful. They offered to wrap her and show us how to do it.

Many women discussed how warm and caring the midwives were and how much it meant to have this support as they transitioned to becoming a mother.

014: She was easy going, friendly... she's just beautiful. Like, I just would like her around all the time. She felt like a mum.

The mothers also valued having knowledgeable health professionals who were reassuring and could give them 'tips and tricks'.

015: It's difficult for me and my husband if she's crying... Then a midwife, she gave us the tricks and tips that what to do with the baby if she's doing like this, if she's not feeding well, how to handle her, how to position her during feeding, even in the bath, how to handle her.

Forming a new family

An important aspect of the mother-infant relationship was creating a new family and a new normal, which mostly happened through shared activities. The sub-themes included integrating the baby into family life and adjusting to the role of 'mother'.

Integrating the baby into family life

Each family was unique, some mothers found that doing activities together created a close bond.

011: My parents have a hobby farm up in the hills. So, they don't live there, so myself and [baby] and my partner went up there a couple of times, so it was just the 3 of us, no-one around, completely quiet. So, we took a couple of pictures of that and that really helped my bonding with her.

While other mothers reported that sharing time with their pets helped bring their family together.

001: just those moments where we were kind of all getting to know each other as a family and I know that he wasn't really, like he wasn't registering the animals. But like [dog], because he's my dog, the cat's [partner's] It was really nice when we kind of connected all of the family.

Going out and returning to pre-baby activities was beneficial, such as walking.

013: I normally would do a beach walk with [partner]. We obviously weren't at the beach, we walked around here., I think I was trying to grab onto some – create the routine –... but for me I think I needed some sort of – I can only put it down to regularity – like adding something back in and that was we went to see friends.

Adjusting to the role of 'mother'

Several mothers described their feelings as they embraced their new role as a mother. Particularly feeling a sense of purpose and excitement about being a mother.

012: It's my picture with my boy in the backyard.... We took this picture because it's a backyard and it's a sunny day and this is our first house since we moved back. And I feel so settled in Australia and all the joy, you know, come together, like the house and moving, everything's new and the baby. I think it's a really good picture I had with him, have that smile.

Self-care also seemed to be essential to developing the mother-baby connection.

014: When I was finally able to go – start going for walks, that definitely helped. Being able to get out of the house because of my delivery being the episiotomy with forceps, I was quite in a lot of pain for the first week. So finally, being able to leave the house and feel like a normal person again and capturing that definitely helped.

Discussion

This study aimed to explore mothers' perspectives on developing the early mother-infant relationship. The findings from the interviews informed the co-design workshops to develop an educational activity for midwives to support the mother-baby relationship.

The mother-infant relationship appeared to be nurtured through moments of connection throughout the day. These moments occurred between the mother and infant and included their partner and supportive people, such as family or friends. Recognising and facilitating these moments as early as possible is important. This study identified that keeping the baby physically close through cuddling, skin-to-skin or carrying helped to facilitate a connection with the baby. In their foundational work, Kennell and Klaus (Kennell and Klaus, 1984) emphasized the importance of physical proximity and skin-to-skin contact to promote the parent-infant relationship. Notably, in this research, the mothers recognised that engaging in skin-to-skin postnatally as well as immediately after birth was helpful. Continued close physical contact has been advocated by numerous researchers, highlighting contact with the baby as critical for attachment (Norholt, 2020), emotional closeness and bonding (Williams and Turner, 2020) and to enhance responsiveness to infant cues and interactions (Little et al., 2018). The mother's awareness of their baby's needs increases when they engage in close physical proximity (Johnson, 2013). This closeness may also encourage the mother to respond more quickly to their infant's needs (Little et al., 2018). Alongside supporting mothers to engage in close contact with their baby, facilitating the partner to be physically close to their infant can strengthen the parent-infant bond (Scism and Cobb, 2017). Providing space and time for mothers to connect with their baby is important, however, this can sometimes be overlooked in the early postnatal period, particularly while in hospital.

Notably, in this study, moments of connection were influenced by cultural practices. Language appeared to be a common way mothers introduced their baby to their culture. This occurred during daily activities like talking, reading and singing to their baby. Language, including how the infant is spoken to and what is said, is a powerful mechanism used in the culturalization of the infant as it conveys messages about cultural norms, values and expectations (Kuchirko and Tamis-LeMonda, 2019). Being cognizant of cultural influences and encouraging mothers to integrate their culture into daily activities can support the mother-infant relationship.

Practical and emotional support from their partner enabled the mothers to connect with their baby. In particular, the participants reported that supportive partners who shared household and parental responsibility enabled them to focus on getting to know their baby. Cuijilts and colleagues (Cuijilts et al., 2019) suggest that the most protective factor for encouraging the mother-infant bond is the partner's support during pregnancy and the postnatal period. Kinsey et al. (2014) also identified the importance of the partner engagement with the infant in supporting the developing mother-infant bond. Encouraging partners to share family responsibility can support new mothers so that they can

spend time developing their early relationship with their baby. Additionally, involving both parents in activities supporting shared responsibility benefits bonding for both parties. Scism and Cobb (2017) conducted an integrative review that identified that bonding was also promoted when the fathers were actively involved in caregiving activities.

Taking time to create a family unit in the first few weeks contributed to building the mother-infant relationship. Many of the mothers highlighted the positive impact of having their partner present in the early days, being there for the 'firsts' and creating moments together, as they felt that this was critical in becoming a family. Similarly, Schobinger et al. (2022) found that having the partner present in the early moments helped create a family unit and to adjust to their new roles as parents. In this study, the mothers commented on the benefit of their partner being able to take parental leave from work as it helped establish the family and supported shared responsibility. Parental leave provides partners with the opportunity for a deep, immersive experience with their infant (Beglauber, 2021).

The importance of the broader social network, including support from family and friends was also critical. Social support refers to the social resources that are available to the individual and can consist of emotional, appraisal [affirmational], informational and instrumental [practical support] (McLeish and Redshaw, 2017). Support can be provided by partners, family, peers, colleagues and/or other community volunteers. A lack of social support is a significant risk factor for experiencing perinatal depression and anxiety (McLeish and Redshaw, 2017), which in turn can be associated with poorer mother-infant bonding (Kinsey et al., 2014). In this study, mothers identified that emotional support provided encouragement, reassurance and compassion, whereas practical support such as cooking meals, cleaning or being available, provided time for the mother to engage with their baby. Many mothers also appreciated advice from other mothers in their support network, explicitly stating they valued guidance from people who had lived experience. McLeish and Redshaw (2017) found that peer support helped normalise parenting concerns. Notably, several mothers had migrated to Australia with previous social networks not readily available. These mothers appeared to build new networks for practical support while also accessing emotional support by connecting digitally with their family overseas. Supporting mothers from migrant, refugee or asylum-seeking backgrounds is essential because they are at risk of experiencing challenges as a result of relocation, such as distance from their support networks, language barriers, and discriminatory or culturally insensitive maternity care (Hennegan et al., 2015).

Developing confidence in their role as a mother and resolving parenting challenges promoted self-efficacy and was identified as necessary for building the mother-infant relationship. Many of the mothers accepted that they were learning and that it was important to 'give things a go' while also feeling in control of their parenting decisions. Other studies also found that when mothers were supported to undertake tasks independently, this helped to develop their skills and confidence in caring for their baby, which empowered them (Schobinger et al., 2022). Midwives can play a key role in supporting mothers in the early postnatal period to build self-efficacy, while also encouraging intuitive mothering.

In the interviews, mothers described positive interactions with healthcare professionals, particularly midwives, as very important. Attributes such as being available, interested, warm, caring, knowledgeable and reassuring appeared to foster a relationship with the mother, which helped their early transition to mothering, positively supporting their mother-infant relationship. Razurel and Kaiser (2015) found that mothers relied on the knowledge and expertise of the midwives to guide them in the early days, while being valued and supported was also crucial to developing self-efficacy (Razurel and Kaiser, 2015). In addition, acknowledging the mother's emotions while providing reassurance when needed was also highly regarded (Schobinger et al., 2022).

Strengths and limitations

This study provides insights into the lived experience of mothers' developing their early mother-infant relationship using a novel technique (photo-elicitation). Additionally, the sample was diverse, as 50% of the participants represented a variety of cultural backgrounds. The study's primary limitation was that it was conducted in one metropolitan hospital with a small sample size, limiting the transferability of the findings. Further, while embedding co-design within a mixed methods study ensures stakeholder collaboration it does present a number of challenges, particularly undertaking the study as a PhD student. The intervention was not predetermined; therefore, ethics approval was sought and required at each phase of the study prolonging the study timeline. Additionally, the proposed intervention was an education focussed activity and due to the non-clinical nature was not registered as a clinical trial. On reflection, this may be considered a limitation of the study, any further evaluation would be pre-registered as a trial.

Conclusion

Midwives are well placed to support the emerging mother-infant relationship in the early postnatal period. This can be achieved through integrating activities into practice, such as facilitating moments between the mother and baby and key people. Recognising the need for some mothers to connect with their baby through cultural activities. Encouraging the mother to involve their broader social network, particularly in the early postnatal period as the mother adjusts to motherhood. Building confidence and competence through activities specifically focusing on achievable success whereby the woman can feel in control and supported by others. It is recommended that midwives be provided with education to broaden their knowledge and skills to support the mother-infant relationship. The findings of this study have informed the development of a web-based, interactive package to educate midwives on how they can support the early mother-infant relationship.

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CRedit authorship contribution statement

Cathy Stoodley: Writing – review & editing, Writing – original draft, Visualization, Validation, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Lois McKellar:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Methodology, Formal analysis, Conceptualization. **Jennifer Fereday:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis, Conceptualization. **Tahereh Ziaian:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis, Conceptualization. **Mary Steen:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis, Conceptualization. **Ian Gwilt:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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