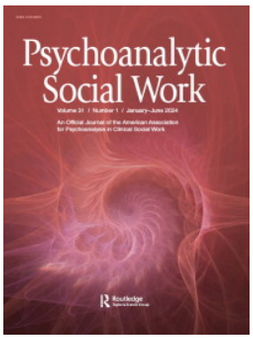

Psychoanalytic Social Work

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/wpsw20

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Nicole Canin & Katherine Bain

To cite this article: Nicole Canin & Katherine Bain (2024) Intersubjectivity in Premature Infant-Mother Dyads: Maternal States of Mind and Premature Infant Responsivity, Psychoanalytic Social Work, 31:1, 21-43, DOI: 10.1080/15228878.2023.2201379

To link to this article: https://doi.org/10.1080/15228878.2023.2201379

Published online: 02 May 2023.

PSYCHOANALYTIC SOCIAL WORK
2024, VOL. 31, NO. 1, 21–43
https://doi.org/10.1080/15228878.2023.2201379

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Intersubjectivity in Premature Infant-Mother Dyads: Maternal States of Mind and Premature Infant Responsivity

Nicole Canin and Katherine Bain

School of Human and Community Development, University of the Witwatersrand, Johannesburg, South Africa

ABSTRACT
Premature birth is implicated in the potential derailment of parent-infant relationships. Using a comparative case study methodology, this paper offers an exploration of developing and disrupted intersubjectivity in two mother-premature infant dyads in the context of a neonatal high care ward in a South African public hospital. Maternal narratives from interviews as well as observational material are used to understand infant responsivity and communication in relation to maternal states of mind. The potential for reciprocity is explored, along with the factors that disrupt this potential.

KEYWORDS
Premature infancy; intersubjectivity; traumatized maternal states of mind; disrupted reciprocity

Introduction

Premature birth occurs, by definition, before 37 weeks' gestation (D'Agata et al., 2017). As a result, premature infants have immature physiological systems and often require intensive, in-hospital medical treatment which can be painful and violating. They usually begin their lives in incubators, separated for large periods of time from their mothers (Mello et al., 2011). Progress in technology has meant that even younger, smaller and more medically compromised infants are viable (Vanderveen et al., 2009).

This difficult beginning is often traumatic and dysregulating for both mother and infant (Borghini et al., 2006; Brazelton & Cramer, 1990; Browne & Talmi, 2005) and can derail optimal parent-infant relationships (Harris, 2005; Ribeiro Batista Gerladini, 2016).The quality of an infant's early experiences and relationships has been shown to have implications for both psychological (Shonkoff et al., 2012; Sroufe, 2013) and physiological (Danese et al., 2011; Fonagy, 2015) development. Aligned with this, the risk factors associated with prematurity are significant and include behavioral, cognitive and social impairments (Cassiano et al., 2016; D'Agata

CONTACT Nicole Canin nic.canin@gmail.com School of Human and Community Development, University of the Witwatersrand, Johannesburg, South Africa.

et al., 2017; Gorzilio et al., 2015). Consequently, the relationship between premature infant and mother, including their ability to interact and connect, is an important area of investigation.

However, a 25-year scoping review on psychoanalytic journal-based articles revealed that remarkably few psychoanalytic papers explore this relationship (Canin, 2022). Nevertheless, the available psychoanalytic literature on prematurity offers a rich framework for thinking about infantile experience, centering around "the container-contained function and how prematurity places this at risk" (Canin, 2022, p. 35). Within this OR model, the newborn infant is portrayed as being frequently overwhelmed by bodily sensations and powerful feelings. These unbearable experiences are managed by projecting them into the mother (Klein, 1946). In order for the infant to feel "contained", (held and integrated), the mother needs to mentally digest these primitive projections as well as the accompanying distress (Bion, 1964; Winnicott, 1965). Psychoanalytic articles on prematurity emphasize the importance of mothers offering this kind of support within the hospital setting, highlighting the psychological risks for premature infants trying to manage overwhelming or traumatic experiences on their own (Blessing, 2006; Botero & Sanders, 2014; Castro, 2011; MacDonald, 2015; Ribeiro Batista Gerladini, 2016).

Psychoanalytic practitioners have attempted to understand the premature infant by exploring the "clinical infant" as well as the "observed infant," terms coined by Stern (1985). The "clinical infant" is theoretical, having been constructed through the analysis of older patients. Thus, the "observed infant" is best placed to offer an understanding of the premature infant's early emotional life, relationships and interactions (McFadyen, 1995). Perhaps it is not surprising that the few psychoanalytic papers which explore interactions within premature mother-infant dyads almost all utilize the psychoanalytic technique of infant observation (Boyer & Sorensen, 1999; Castro, 2011; Lazar & Ermann, 1998; McFadyen, 1995; Mendelsohn, 2005; Miller, 2001; Ribeiro Batista Gerladini, 2016; Steibel et al., 2014). Infant observation has the advantage of incorporating developmental understandings of infant development with the lens of object relations theory, and so offers a deeper exploration of premature mother-infant interaction (McFadyen, 1995).

Despite this, very few psychoanalytic papers spotlight the infant's ability to actively participate in this relationship. Empirical infant research has uncovered an infant that is not only "oriented toward the outside world" (Fonagy, 2015, p. 356), but motivated to establish relationships from birth (Beebe et al., 2003; Trevarthen & Aitken, 2001). Within the field of developmental psychology, analysis of mother-infant "proto-conversations" suggest that infants are driven to actively engage with their caregivers (Beebe et al., 2003; Trevarthen & Aitken, 2001). In keeping with these advances,

there has been a theoretical shift within certain developmentally and relational focused branches of psychoanalysis to include the "innate interpersonal skills of the baby" (Balbernie, 2007, p. 310).

The concept of "intersubjectivity" has become one of the leading theories of relational interaction in both psychoanalytic and developmental literature (Beebe et al., 2003). Within developmental literature, it refers to the dyadic interaction as well as the psychological overlap between an infant and caregiver. It describes a process of shared experience and meaning-making that is concerned with both the caregiver's emotional attunement as well as the infant's capacity for shared affective experience (Balbernie, 2007; Beebe et al., 2003). This conceptualization differs somewhat from the more traditional psychoanalytic use of the term intersubjectivity, utilized in the context of shared subjective experiences amongst adults. The term is used, predominantly to describe experiences within the therapist-patient relationship. Within this framework, intersubjectivity often denotes a highly specific treatment modality that focuses on the co-creation of processes and transferences occurring between analyst and patient (Beebe et al., 2003).

The developmental conceptualization of intersubjectivity is therefore pertinent for this particular paper, highlighting the reciprocal nature of communication within the mother-infant dyad (Beebe, 1982; Beebe et al., 2010; Meltzoff & Moore, 1998; Stern, 1985; 2005; Trevarthen & Aitken, 2001). In this context, other similar terms are used to describe this bi-directional interaction, including synchronization (Stern, 1985) and reciprocity (Brazelton et al., 1975). They all refer to deliberate efforts at engagement by both mother and infant (Balbernie, 2007). However, this dimension represents a gap in the psychoanalytic literature on prematurity as very few papers explore the premature infant's capacity for intersubjectivity and reciprocity (Canin, 2022).

The reasons for this lack of research are likely multi-faceted, highlighting once again divergent theoretical focuses, but perhaps also reflect the complexity of the intersubjective potential of premature infants. Premature infants have been found to be capable of reciprocal communication and interaction (Trevarthen & Aitken, 2001; Tropiano et al., 2017). However, this can be impacted by the premature infant's medical challenges as well as their initial birth weight. Premature infants are categorized as being low birth weight (weighing less than 2500 g) very low birth weight (weighing less than 1500 g at birth) and extremely low birth weight (weighing less than 1000 g) at birth (Moster et al., 2008). The lower the birth weight, the greater the likelihood of long-term medical complications, prolonged physical developmental delays, as well as their ability to focus and sustain attention (Anderson & Doyle, 2004). However, neurodevelopmentally all premature infants are described as having a compromised ability to "perceive the external world, show their needs and to build their internal

world" (Ribeiro Batista Gerladini, 2016, p. 45). In addition, their difficult early experiences can negatively interfere with their developing capacity to communicate and self-regulate (Browne & Talmi, 2005; Gorzilio et al., 2015; Vanderveen et al., 2009).

What is known from developmental research is that interaction comes at an increased cost to their physiological and regulatory systems and therefore needs to be thoughtful and appropriate (Nugent et al., 2014). Trevarthen and Aitken (2001) suggest that "even an infant born two months before term can begin to share dynamic proto-conversational motives … by exchanging facial expressions, vocalisations and gestures of the hands with a sympathetic partner" (p. 7). This suggests that the premature infant's capacity to interact is related to the sensitivity of their companion, in most cases the mother. The impact of the mother's parenting on the premature infant's intersubjectivity is therefore an important to consider.

The ability to offer supportive mothering requires specific states of mind and mental capacities (Bruschweiler-Stern, 2009; Slade, 2005; Stern, 1995; Winnicott, 1956). Offering containment requires the emotional capacity to fully experience the infant's projected emotions without becoming overwhelmed. In addition, mothers need to utilize cognition and insight to reflect what might be causing the infant distress (Shuttleworth, 1989). The ability to see an infant as intentional builds on the notion of offering containment, demanding an individualized recognition of not only infant needs but infant personhood (Fonagy et al., 1991, Slade, 2005) and communication (Balbernie, 2007). The combination of these factors then guides the mother's response to the infant, leading to a shared emotional experience and synchrony within the mother-infant dyad. Stern (1985) referred to this as an "attuned" response. The presence of attunement allows for the infant to become more regulated and subsequently promotes infant responsivity (Feldman, 2006; Field, 1994). A lack of attunement, however, challenges infant development, with negative implications for regulation, self-control and cognition (Feldman, 2006; Feldman et al., 1999).

Raphael-Leff (2018) describes how maternal capacities are often disrupted when mothers are unable to complete the crucial psychological preparation of the last trimester of pregnancy. The experience of giving birth prematurely and the ensuing in-hospital experience is also portrayed as being overwhelming, emotionally taxing and traumatic for mothers (Anscombe, 2008; Cantle, 2013; Steinberg, 2006, Vanier, 2017). Some mothers become preoccupied, anxious and hyper-vigilant (Harris, 2005; Mendelsohn, 2005). Others utilize defence mechanisms such as detachment or even dissociation to avoid feeling pain (Camhi, 2005; Mendelsohn, 2005). Traumatized mothers are more likely to misinterpret or cut off from the infant's distress signals (Cohen, 2003; Mendelsohn, 2005). This is amplified by the fact that the infant's suffering is often the main trigger

for dissociated states of mind (Berthelot et al., 2015). Premature infants are also less alert and responsive, offering minimal eye contact and clarity of cues (Trevarthen & Aitken, 2001). In this way, mothers may be prevented from getting to know their infants and offering attuned responses. Those mothers with a history of unresolved trauma or loss are believed to be even more at-risk (Lemma & Levy, 2004; Vanier, 2015). Cohen (2003) explains how previous unresolved traumas, and their associated memories and feelings, can be reactivated by a premature birth, further dismantling a mother's capacity to be open to receiving her infant's communications and reflective about them.

Psychoanalytic literature on prematurity provides helpful explanations of why premature birth may prevent mothers from entering into states of mind that are conducive to sensitive mothering (Negri, 2018; Vanier, 2015). However, most of these papers rely on the clinician or observers' perceptions of maternal states of mind, rather than accessing maternal narratives in order to gain a more detailed understanding of a mother's reflections about herself, her trauma and her premature infant - for exceptions, see Keren et al. (2003) and Wijnroks (1999). Further research is required as the more that can be understood about premature dyads, the more likely that effective therapeutic interventions can be developed to support this potentially compromised relationship (Melnyk et al., 2008).

This paper offers an exploration of the developing reciprocity between mothers and their premature infants in the context of a neonatal high care ward in a South African governmental hospital. Maternal narratives from interviews as well as observational material are used in a comparative case study methodology. In this way intersubjectivity and bi-directional interactions between mothers and premature infants are explored, taking into account maternal states of mind as well as infant responsivity and communication.

Methodology

Case study methodology is an in-depth exploration that aims to capture complexity and uniqueness within a "real-life" context (Simons, 2020). This paper investigates two cases that document the relational experiences of two particular mothers and their premature infants. These two cases were purposively selected as they allow for clear comparison of the potential impacts of maternal states of mind on intersubjectivity. Participation was voluntary and ethics clearance for the study was granted through the University of the Witwatersrand's Human Research Ethics Committee. The researcher ensured that the participants were informed verbally and in writing about the nature of the study. The participants provided signed consent to participate in all aspects of the study.

Pseudonyms are used to respect the mothers' and infants' rights to confidentiality.

The participants in this study were sourced from a local Johannesburg Mother and Child Hospital. This hospital services an ethnically diverse population from the surrounding lower socio-economic areas that have been racked with violence, poverty, gangs and drug abuse for decades. It is important to acknowledge that there were cultural differences between the researcher and the participants which may have influenced the comfort and trust levels established as well as openness to sharing intimate information. In order to address this, much effort was made to establish rapport, being mindful to ensure that the relationship was not felt to be disempowering in anyway. The participants seemed to be comforted by the knowledge that the researcher was also a mother, which seemed to create a shared identity. Nevertheless, it is acknowledged that cultural differences may have influenced what the participants felt they could reveal.

Within the hospital setting itself, there is a lack of human and medical resources, and a limited availability of hospital beds. Despite these challenges, the doctors working in the neonatal high-care unit where the research was conducted are dedicated to their patients. Within the unit, mothers were given much responsibility regarding the practical care of their infants such as feeding and changing of nappies.

Each mother was interviewed on three separate occasions using a semi-structured interview format based on the principles of Cartwright's Cartwright (2004) psychoanalytic research interview. They were invited to speak in an open-ended way in order to obtain subjective narratives. Topics such as their experience of the pregnancy and birth, as well as their time in the unit; their perceptions of their infants, and their family histories were explored. Close attention was paid to emotional responses in the participants and in the interviewer during and between interviews. These affective responses are believed to provide insights into aspects of the participant's experience that are less available to narration (Holmes, 2014; Stromme et al., 2010). Moments of heightened affect or conversely the avoidance of affect were noted (Cartwright, 2004, p. 226). In addition to interviews, the technique of infant observation was used to collect data on interactions and intersubjectivity within the mother-baby dyads. Two observations were conducted for sixty minutes each, on two separate occasions, in between interviews. Note was taken of maternal behavior and attunement toward the infants, as well as infant responsivity. Particular attention was given to moment-to-moment changes in each infant's movements and physiological responses including eye gaze behavior, changes in skin color, breathing patterns and muscle tone. This was believed to provide valuable insights into the infant's experience, ability to cope and regulation (Cohen, 2003; Mendelsohn, 2005). This methodology has been

adapted specifically for use within hospital settings (Cantle, 2013; Castro, 2011; Cohen, 2003). As with the interviews, the observations included a conscious effort to be aware of the observer's emotional responses and identifications from moment to moment, as this information, when reflected upon and triangulated with other sources of information, can often illuminate non-conscious dynamic interpersonal processes (Cartwright, 2004; Rustin, 2006). It is acknowledged that attempting to interpret the experiences of premature infants, given their primitive, preverbal nature, requires caution. However, there is an established precedent of attempting to infer the meaning of a premature infant's behavior on the basis of in-depth observation (Cohen, 2003; Mendelsohn, 2005). This study will therefore attempt to consider the infant's experience in an exploratory and tentative way.

Analysis of the interviews followed Cartwright's (2004) guidelines. The content of each mother's narrative was triangulated with the observational material, and the emotional dynamics of the process, including the interviewer/observer's responses. Close attention to the interviewer/observer's feelings and thoughts can aid in contextualizing and highlighting the emotional impact of interviews and the observational material (Cartwright, 2004). For this reason, the emotional responses of the participants and the interviewer/observer have been included in the material described in the two vignettes presented below. These case studies have been written from the first-person perspective of the interviewer/observer, and include direct quotes from the interviews as well as notes taken during the observations.

Betty and Ryan: 'I ask myself, will I be able to manage with it?'

Betty is a 31-year-old mother who delivered her baby Ryan at 33 weeks, weighing 1250 g. Ryan was considered a very low birth weight baby. The pregnancy was described by Betty as unplanned but wanted. It had been a complicated pregnancy which placed both their lives at risk. However, from birth, Ryan had been medically stable and was considered healthy and robust by the doctors. Betty had been told that Ryan would be discharged upon reaching the necessary weight. Ryan was no longer connected to any equipment or tubing. His body was thin, but I thought he seemed more substantial than many of the other babies around him. He had thin wisps of black hair and was dressed only in nappy. My first impression of Betty was that she looked older than her years. Her face was lined, with sunken cheeks and a pasty complexion. Betty had been in a long-term relationship with Ryan's father and they were now engaged. I experienced the interviews with Betty as chaotic and exhausting. It felt difficult to hold onto my mind while attempting to make sense of what she was sharing.

My impression was that Betty's birthing experience had overwhelmed and traumatized her. She would say things like, "*It's when I'm on my own and then…I've got all these things going through your mind ….*" Throughout the interview, painful feelings seemed to continually bubble up and overwhelm her. However, she appeared to constantly try to dismiss, distort or inhibit what she was feeling. She made comments like "*Will I be fine? Will the baby be fine? Will we both be fine and stuff like that so, but I didn't worry about myself. I was worried about the baby and I was just praying non-stop, but so I know that it will be okay. God is good, definitely.*" Betty's narrative was confusing and full of contradiction. It felt as if she was not able to engage fully with her experience. This kind of chaotic narrative is suggestive of the use of dissociative defenses, one of the most common symptoms in mothers of premature infants (Jubinville et al., 2012). Developmental psychoanalysis understands dissociation as a psychic defence in response to trauma that results in failures of integration, (Bailey & Brand, 2017; Bromberg, 1994) making the capacity for dialogue as well as the construction of a coherent narrative difficult (Gurevich, 2014; Lemma & Levy,; 2004). Schimmenti and Caretti (2016) suggest that dissociation is activated during childhood trauma in order to prevent the child from being overwhelmed by unbearable experience; later in life, these dissociative processes may be re-activated when trauma overwhelms one's defenses. Prior to Ryan's birth, Betty had experienced significant relational trauma. She had grown up with an alcoholic father who had physically abused her mother. She explained, "*It was hard because my dad started being an abusive person, so he was hitting my mom and I was always in between when my mom has to run away.…*" From the age of 17 Betty was also married to a man who became alcohol dependent and abusive. It took many years for that relationship to end.

Throughout the interviews and the observations, Betty appeared to move in and out of dissociated states which, in turn, seemed to interfere with her ability to reflect on and engage emotionally with Ryan. At times, she empathized with the distress he experienced in hospital. She had said, "*when he was on the drip it kept on coming out and I know how it felt because I was on drips the whole time, so, and then that was breaking my heart.*" At other times, Betty minimized the challenges he had experienced, emphasizing what a "good" and "happy" baby he was: *"He is not crying too much, not at all. I hardly hear him crying. He only cries like when they like hurt him with needles.*" The blunted tone she used when describing these experiences highlighted how disconnected she was with the trauma of this experience for him.

It is notable that Betty appeared preoccupied with her own trauma, with descriptions of Ryan's experience often becoming tied up with or lost in narrations of her own experience ("…*Will the baby be fine? Will we*

both be fine…"; "…he was on the drip… I was on drips the whole time"). Perhaps this contributed to that fact that Betty was not always able to recognize Ryan as a separate person. When she described being able to hold him for the first time, she said "*it was like a big part of me being back into my body again.*" The inability to see an infant as separate has been linked in the literature to parental self-blame and guilt. Where parents feel accountable for having "damaged" their baby, the infant may become a representation of the parent's inadequacies (Amez & Botero, 2000; Mendelsohn, 2005). Betty described her guilt regarding her role in Ryan's premature birth, "*you know that is it my fault that the baby didn't grow properly and stuff like that.*" Betty also spoke about her fears that Ryan might die because she feared she was not competent enough to take care of him, "*[being in the ward is] you know, better than being at home and you can't look after him and then you don't know what to do with the baby and then he will be, like, not survive and then you gonna have that guilt on you for…like forever.*" Likely as a result of her traumatized state of mind as well as her difficulty with appreciating Ryan's personhood, Betty also hadn't been able to recognize Ryan's subtle attempts at engaging with her. During the interview, she had suggested: "*He doesn't even give me a sign like that he knows that I'm there because he is sleeping most of the time so I had to like kiss him and cuddle him to make sure he knows I'm there.*"

Observation: Betty and Ryan

Ryan (R) was lying on his side in mom's left arm, wearing only a nappy. She was rubbing his back. She then placed a tissue on her shoulder and placed R on the tissue. She began to pat his back. She adjusted the position of his head and rubbed his back again. R moaned and then fussed a little. Mom put him on his back in her arms again. She lifted his head slightly and then with her right hand lifted the feeding cup to his mouth. She poured the milk slowly into his mouth. R's eyes were closed. Mom watched him for a few seconds. He arched his body and lifted himself back a little. He moaned. Mom turned him onto his side. Color flushed his face and he turned red. He made a grunting sound. R opened his mouth, stretching as he did so and then cried a little. Mom lifted him back up on her shoulder and rubbed his back and then over his nappy. She looked down at him. He raised his left hand and took hold of the tissue. He lifted his head and grunted. R shifted his body into his mom, as if snuggling into her. Mom looked up and away from him. She rubbed up and patted with her right hand, looking around the room. I thought to myself her expression seemed vacant.

After a few minutes, mom looked down and spoke softly to him. She placed him on his back again, facing her, and murmured, "Hey." She tried

to feed him with the cup again. R's body shook, and his hands came up interfering with the cup. Mom pulled the cup away, watched for a few seconds and then brought it back down again to his mouth. R moved his hands and kicked his legs. He sucked gently on the cup. Mom looked down at him. R pushed his head back away from the cup. His body shuddered and shook. I felt myself becoming anxious. Mom brought the cup back to his lips. R pushed it away with his hands. "Wait, don't push it away" she said in a serious but gentle voice. After a few seconds she said, "Now we're finished." I felt overwhelmed at this point, and I became aware that my body felt "over-heated." It felt hard to concentrate. I forced myself to focus again on mom and R. R's eyes opened and he vomited a little. He then surprised me by snuggling into her and putting his hands into her top. I was very touched by this connecting gesture, despite what had felt like an intrusive feed. Mom's phone rang and she answered it. R cried a little and while speaking she began to pat his back distractedly. Mom sighed and R closed his eyes. He moved his hand further into mom's shirt, and I found this gesture touching and painful because I didn't think mom had noticed it. Mom ended the call and placed the phone back in R's incubator. R opened his eyes. Mom re-swaddled him tucking in his hands. I felt desperately sad, noticing his hands moving under the blankets.

Mom spoke softly to him. He turned his head to face her. His left hand crept out of the blanket and fisted. Mom lifted him up. She patted him quite vigorously and then brought him toward herself and kissed him. She pushed into his cheeks with her finger and continued to speak to him. My countertransference was one of discomfort, despite the gentleness of mom's interaction. R's face turned a red color. He moaned which then developed into a cry. She re-swaddled him and then rubbed his back again. R moved his tongue out and back in his mouth. She spoke softly to him. R wrapped his left hand around her finger, which was near to his hand. Mom didn't seem to notice this gesture as she didn't respond in any way. She then shook him quite vigorously, and moved him up on her arm.

In keeping with Betty's narrative, I experienced her as being anxious and pre-occupied in this observation. She was repeatedly unable to recognize or contain Ryan's distress. It seemed that Betty's traumatized state of mind meant that she was unable to regulate herself or Ryan. Mendelsohn (2005) explains how the "nature of such a trauma provokes fearful and disabling interpretations of the baby's behaviour" (p.196) In the observation, Betty seemed to find it hard to observe crucial information about Ryan's experience or his needs. My impression was of a baby who was forced to "survive" his feed rather than enjoying it. In my notes I wrote, "*my thoughts were that he was being fed quickly without having time to recover…*". My emotional response during the observation was one of alarm and I experienced it emotionally as well as physically. Betty did not

recognize Ryan's signs of physiological distress, which he conveyed throughout the observation. These included color changes, moaning, grunting, arching his body, tremors and ultimately vomiting (Nugent et al., 2014). While Betty may not have known that these particular behaviors signal distress, R's discomfort was evident. While Gorski (1983) highlights that premature infants offer subtle cues which are harder to read, Betty did not respond contingently to his more obvious communications. Even when she acknowledged Ryan's explicit pushing away of the cup, she did not allow this to guide her feeding behavior. Sadly, Betty's misattuned parenting seemed to dysregulate Ryan further. Nugent et al (2014) suggests that preterm infants are hypersensitive to being "over-handled", and I had wondered if Betty's constant shifting of his position, most likely a way of managing her own anxiety, was difficult for Ryan.

Betty also struggled to recognize Ryan's attempts at engagement and communication, as she had in the interviews. Once again, I wondered if this wasn't defensive. Betty's capacity for intersubjectivity and her ability to attempt to connect with him shifted throughout the observation. At times, Betty seemed disconnected and distant. In those moments it felt as if she escaped into a dissociated and withdrawn state. These instants seemed brief but appeared to be triggered by Ryan's attempt at initiating contact, such as when he snuggled into her or wrapped his hand around her finger. I wondered if his attempts to engage his mother were frightening for her. I also wondered how her lack of responsiveness, or at times her somewhat aggressive behavior (shaking him vigorously) was experienced by Ryan. Was it frightening for him? There were also times when Betty was gentle and present; she had looked directly at him and even attempted to interact with him. However, in those moments Ryan had seemed too dysregulated to respond. Thus, despite both parties reaching out for connection at different times, Betty and Ryan found it hard to find synchrony.

While there is a risk that the documentation of poor attunement in a mother may be perceived as mother-blaming, this was not the intention of the researchers. Rather, it was hoped that by highlighting Betty's traumatic history and demonstrating the link between this and her experience of giving birth to a premature baby, that empathy for both mother and infant could be maintained. It is important to acknowledge that much consideration and thought went into the decision to write about my initial unusually unfavorable counter-transference reactions toward Betty. However, these responses, once reflected upon and processed in the researcher team, were found to provide useful information regarding non-conscious dynamic interpersonal processes between mother, infant and observer (Cartwright, 2004; Rustin, 2006), that highlight the need to support staff working in units with premature infant-mother dyads. Significantly, by the end of the

research process, I felt significantly more positive toward Betty. Betty had actually been extremely supportive of the research, going out of her way to ensure that all components had been completed before Ryan was discharged. I also felt that she was dedicated to Ryan, and was trying her best to be a mother to him. I felt the need to convey this to Betty. Once the research process was finished, I showed Betty several videos that had been taken which conveyed moments of connection and engagement between her and her baby. Betty had reported being very touched by this. It was my hope that this might leave Betty with a feeling of competence in her maternal abilities.

Charity and Nono: "I am here for you and I'm your mom and I love you"

Charity is a 33-year-old married mother who delivered at 30 weeks gestation due to high blood pressure. Her baby girl, Nono, was born weighing only 830 g. She was considered an extremely low birth weight infant. Doctors had reportedly felt anxious about Nono's survival, given her birth weight and subsequent medical complications. Nono was in an incubator, with one tube taped to her arm and another accessed a vein on the top of her small head. Just prior to the observation, doctors inserted a feeding tube into her mouth which went directly to her stomach due to challenges with Nono's digestive system. This was taped to her cheek. I found the sight of such a tiny baby connected to so much piping distressing. Charity was a calm presence in the unit with a maternal manner. She seemed to be respected by both the doctors and mothers, and had assumed the role of confidante for some of the newer mothers. Charity was given autonomy in taking care of her baby, a task she dedicated herself to fearlessly. Charity also endeared herself to me. I experienced a powerful positive countertransference reaction when watching her and Nono together. I felt emotional and surprisingly protective throughout the process. When I left the hospital, it was Charity and Nono whom I found myself thinking about.

Like Betty, Charity had also experienced trauma as a result of her infant's premature birth. However, in the interviews, she had been able to reflect thoughtfully on her experiences. In fact, she emphasized the importance of being able to do so: '*I think especially in our African culture, we are not taught to be out there, to be open to talk about things, and I think that is why more often times we carry a lot of baggage, because we never talk about it. So, I was like, 'No, talking about it makes it easier, makes it normal*'. Charity shared her story with me in a clear and coherent way, expressing a variety of feelings including anger, fear, vulnerability and sadness. She was realistic about potential challenges with Nono's health and she acknowledged the possibility that she might lose her. Lemma and

Levy (2004) suggest that a mothers' ability to tolerate painful states of mind engenders hope that pain and trauma can be survived. Perhaps, Charity's sense that she could survive this ordeal meant she didn't need to defend against her feelings. Charity also maintained a sense of positivity and hope, which she held alongside her pain and vulnerability. These states of mind as well as her ability to tolerate her pain seemed to be linked with her childhood experience of being helped to manage distress. Despite having lost her father as a child, and her mother as a young adult, Charity described a loving, supportive relationship with both of her parents growing up. She shared that these losses had been painful to endure but that she had constantly felt the support of her family and community: "*So that's the kind of love, the kind of support I grew up with…life was rough… but we were protected.*"

Charity was also able to think about Nono's experience in the hospital as well as possible future challenges. She made comments like, "*Is it going to be a painful life for my child and stuff like that. You worry and all those things.*" However, her receptivity to Nono's pain did not seem to overwhelm her as she described wanting to give Nono comfort and reassurance. "*Like you want to cover her and say it's okay but then you are like, okay I don't know how much you understand, you put your hand and try to comfort her, it's okay I'm here anyway. You don't have to be scared.*" Charity also seemed to have confidence in her ability to soothe Nono: "*Cause whenever she cries, if I put my hands in the incubator and lift her just a little bit, she stops crying.*" She clearly saw Nono as an intentional person, and was acutely aware of any subtle expression of intersubjectivity: "*That I feel like whenever she opens her eyes…I feel like she can follow…I think she sees something. And I think she has also learnt to detect that this is my mom's voice.*" Charity also assigned meaning and intention to her behaviors: "*Like, she is the baby that doesn't cry for no reason just to cry, so you already know there is something wrong, yah.*"

Observation: Charity and Nono

Mom sat to the left of Nono (N), looking at her through a hole on the side of the incubator. N was lying on folded sheets, wearing only a nappy. She was breathing rapidly. A nurse arrived, mom sat forward in her chair. I felt she looked anxious. As the nurse took out a needle, mom stood up. The nurse examined N, seemingly looking for a place to prick her. As she did this, mom put her hands into the incubator through the side holes and took N's fingers in her hand. The nurse pulled her left foot and pricked her until droplets of blood emerged and she touched the machine to the blood. N did not cry but her breathing became more rapid.

Mom continued to watch and hold onto N's hand. "Hey" she said gently and she smiled at her. She opened the side window fully. She gently shook her hand and then her arm. "Unjani?" [How are you?] she questioned. I felt mom looked concerned as she spoke gently to N. She touched N's cheek quite roughly. N wriggled her body. She lifted her head up and stretched her legs. She moved her arms into v shapes by her face. Her legs moved up in a fetal position as well. Her eyes remained closed.

Mom stroked her cheeks in a gentler way with her right hand. N kicked out with her left foot, and stretched her legs. Mom took her right foot in her right hand. N pushed her foot up against mom's hand. N was breathing heavily. She suddenly shook and then shuddered.

N was breathing in and out in a heavy, labored manner. She startled repeatedly for a few minutes. Mom too was breathing deeply. N's eyes fluttered subtly. She moved her head to the one side. Mom called to her. N opened her eyes like slits. She put her tongue out her mouth and then mouthed the tube. Her eyes opened slightly and I thought to myself that she seemed to be trying to open her eyes. Mom touched her hand, speaking gently to her.

N opened her eyes slightly but seemed to be looking at mom. Her mouth moved into a wider position. Her breathing was heavy. Mom touched her cheek. N stretched her right hand and looked up at mom. She made an "O' shape with her mouth." Mom, who had been looking at her throughout the exchange, touched N's mouth. Bubbles came from N's mouth as she opened and shut it. Her breathing seemed to have settled at that point, not seeming so rapid. I felt it to be a beautiful and intimate moment, and found myself feeling moved and emotional.

N's eyes became heavy and I felt she was tiring. She turned her head in the opposite direction to mom. Her eyes were opened like slits but drooping. N turned her head back to mom. Her eyes were mostly closed. She was tonging the tube in her mouth. Her left hand shuddered. Mom took her hands out of the incubator and sat down on the chair but continued to look at N.

This observation tracks a mother helping her infant to recover sufficiently from the distress of having blood taken, to the point where they are able to have a moment of mutual recognition. It starts as Charity watched Nono having blood taken by a nurse. Anscombe (2008) describes how evocative it is for mothers to watch their infants endure painful medical procedures. Charity had seemed anxious at the prospect of her baby being pierced with a needle. However, she was able to regulate her own anxiety sufficiently in order to engage emotionally with Nono and be a containing presence. Charity stood up immediately when it became clear that the nurse intended to use the needle she was holding, putting her hands into the incubator to offer comfort to her infant. She called

gently to her infant, letting her know that she's not alone. Charity's sense of Nono's personhood was conveyed when she asks, "Unjani", a Zulu term which means, "how are you? "

Nono showed signs of physiological dysregulation during the observation such as tremors, startles, and rapid breathing (Nugent et al., 2014). I had wondered about how difficult and traumatic her week had been as she had had several invasive medical interventions including a tube placed down her throat. She may have also had gastro-intestinal discomfort, as doctors were concerned about her digestive system. Field (1990) highlights the impact of potentially stressful procedures on physiological signs such as increased heart-rate, altered skin-tone and breathing. The experience of having blood drawn from her foot was clearly distressing. I thought about a baby who was being assaulted from the outside as well as the inside. And yet, her mother's ability to recognize her distress and dysregulation and to offer containment allowed Nono gradually to become more regulated, as observed with the settling of her physiological distress signals. In addition, mom's attuned responses to Nono created the possibility of intersubjectivity. They both worked hard at making contact. Charity and Nono seemed to have several points of contact including hands, feet, mouth and then remarkably - eyes. It felt as if Nono worked hard to be able to open her eyes and have a moment of intimate mutual gazing which was immensely moving to observe. Perhaps, equally important, however, was when Nono became tired and needed time to recover, Charity recognized this too and gave Nono the space she needed. Charity was not intrusive but respectful of Nono's communications.

Discussion

Premature birth increases the risk of derailment of parent-infant relationships (Ribeiro Batista Gerladini, 2016) and the glimpse that this paper provides into how this disruption manifests relationally between the premature infant and mother provides some evidence for much of theorizing in this area. It is clear in the cases above that parenting a premature infant is challenging because their need for facilitation and support is greater, and yet the cues given by premature infants are more subtle (Trevarthen & Aitken, 2001). Also as previously documented in the literature (Anscombe, 2008; Cantle, 2013; Steinberg, 2006, Vanier, 2017), the presence of trauma seems to be inherent to the experience of prematurity. However, as evident above, not all mothers experience this trauma in the same way. For some mothers, having a premature baby appears to evoke overwhelming emotional dysregulation and traumatized states of mind, which places the container-contained function at risk, compromising maternal capacity for intersubjectivity (Castro, 2011). These traumatized states of mind include

the use of psychic defence mechanisms such as detachment or dissociation (Camhi, 2005; Mendelsohn, 2005), which function to protect the mother but potentially prevent her from processing her experience and working through complicated feelings such as guilt and inadequacy. These defenses also appear to compromise maternal capacity to attune to her infant, with some mothers misinterpreting or cutting off from the infant's distress signals (Cohen, 2003; Mendelsohn, 2005). As evident in the material above, despite moments of gentle interaction Betty was often unable to perceive her baby's needs, his personhood or his attempts at intersubjectivity. Betty's state of mind meant that the parenting she offered Ryan was not guided by his communications and as a result appeared to dysregulate him further.

In stark contrast, Charity's ability to process and reflect on her experiences appeared to help her to regulate herself and reach out for support when needed, which allowed for more receptive and containing maternal mental states. Charity demonstrated an ability to remain in contact with her own and her infant's experience, which seemed to afford her the ability to recognize Nono's communications and allow them to guide her parenting. This not only allowed her to soothe and contain Nono's distress but opened up the possibility for intersubjectivity. Her sensitivity to her baby's capacity for attention and non-attention, and her learning how to interpret her infant's behaviors allowed for synchronicity, despite Nono's challenging circumstances. This, in turn, allowed Nono to become more regulated, supporting her capacity to reach out and engage her mother. This is in keeping with several studies that have shown the premature infant as being able, under the right conditions, to offer of this kind of intersubjectivity (McFadyen, 1995; Mendelsohn, 2005; Tropiano et al., 2017).

It is significant to note that the mothers' responses to the trauma of the premature birth of their infants, as detailed above, were closely aligned to their childhood histories of trauma, and the extent to which they were supported through this. It is possible that these unique trauma histories contributed to their respective capacities to parent their premature infants. Mothers with a history of unresolved trauma or loss are believed to be more at-risk (Lemma & Levy, 2004; Vanier, 2015), as premature birth can reactivate associated feelings and impact on the capacity for sensitive and reflective parenting (Cohen, 2003). Betty's frightening and unstable childhood meant that she did not seem to have the internal resources to cope with the recent trauma of Ryan's premature birth. Conversely, the support that Charity experienced as a child from her family and community enabled her to believe that she could remain connected despite pain. As such, she seemed able to process this trauma more constructively and receive her infant's communications.

Most significantly, however, the findings of this paper suggest that premature infants do indeed have remarkable potential to communicate

with those taking care of them, regardless of their level of risk or medical stability. While Mendelsohn's study (2005) found that mothers tend to show less smiling and touching behaviors with sicker infants, this study emphasizes the importance of this for these sicker infants. Nono's ability to open her eyes and focus despite medical challenges is likely partly attributable to her mother's sensitive and attuned holding. Even without the psychological support of his mother, Ryan was able to have moments where he was able to attempt intersubjectivity. Sadly, however, these attempts at relating were often lost, as his mother's traumatized maternal states of mind prevented perception of and attuned responsiveness to infant communications.

The findings of this paper support previous conclusions that the trauma of premature birth can be dysregulating for both mother and infant, resulting in poorly co-ordinated interactions (Borghini et al., 2006; Brazelton & Cramer, 1990; Browne & Talmi, 2005). Also evidenced above is the notion that traumatized maternal states interfere with the establishment of synchrony within the mother-infant dyad, compromising the infant's opportunities for regulation (Feldman, 2006; Feldman et al., 1999). This cycle of dysregulation that impedes the growing intersubjectivity between mother and infant appears to result in less "affirmation" for mothers in their maternal roles, which further negatively influences their maternal states of mind. When synchrony is achieved, however, there is potential for both mother and infant to aid in each other's development. Mother is assisted to develop her maternal identity and the infant is assisted to regulate emotion and sensation and ultimately, in the development of a self.

Limitations and conclusion

The strength of this paper is the detail captured through close observation, and the combination of observation and psychodynamic narrative analysis, which allowed for the evidencing of intersubjective processes previously theorized. While case study methodology does provide scope for detail and depth allowing for within- and between-case patterns to emerge, case study methodology does have limited generalizability (Simons, 2020). Despite this limitation, however, this study supports previous theorizing that traumatized maternal states of mind pose a risk to intersubjectivity in premature infant-mother dyads. From the above case studies, it is clear that although the vulnerability of the infant influences the task of attuned caring and the establishment of a relationship (the sicker the infant, the more difficult the task), the mother's state of mind appears to play a bigger role (the more traumatized the mother, the more difficult the task). This supports findings by Borghini et al. (2006) who found higher rates of insecure attachment representations in mothers of both high- and

low-risk premature infants, and that of Wilfong et al. (1991) who found that maternal depressive symptoms predicted compromised responsivity to premature infants, more so than the severity of the infant's medical risk. This supports previous findings that maternal factors rather than infant factors are more predictive of infant attachment security (Cox et al., 2000), and suggests that the identification of mothers with traumatized states of mind and those with unattuned responses to their infants would likely better predict dyads at risk. The need to screen for previous experiences of trauma and loss after premature birth is clear in order to identify mothers at risk of the development of trauma responses that may influence their capacity for attuned responsivity. While previous screening tools have emphasized the identification of birth trauma in mothers (Keren et al., 2003), this study suggests that screening for the presence of previous lifetime trauma might also assist in understanding the nature of the mother's trauma reaction post-partum. Pre-term infants with mothers who have significant rejection in their attachment histories have been previously identified as being at higher risk for attachment disruption and disorganization (Cox et al., 2000). Mothers at risk need access to tailored psychological support in order to process their experiences and address their trauma. Maternal trauma-focused interventions have previously been found to be effective (Brecht et al., 2012). Psychological support for the dyad could aid in strengthening perceived maternal competence, promoting maternal states of mind more conducive to parenting premature infants in a sensitive, attuned manner.

The hospital environment itself represents a risk factor for maternal mental health (Porter et al., 2020). In this particular hospital setting, unlike many other high care or neonatal pediatric units in both public and private hospitals in South Africa, mothers were given significant responsibility regarding the practical care of their infants providing them with ample opportunities to interact and connect. This is often not the case, however, as hospital environments are often unsympathetic to the mother's emotional experience and her need to connect with her baby. Porter et al. (2020) suggest that "the maternal world and the medical world are neither complementary nor mutually understood" (p. 846). Limited opportunities for their own emotional reflection and support means that hospital staff often struggle to remain "emotionally receptive and available. This results in protective defences such as detachment, projecting unprocessed experiences as well as defences against connecting and empathising with premature infants and their parents" (Canin, 2022, p. 31) .

The impact of the hospital environment therefore needs to be taken into account. Training of staff in the units is also essential in order to promote attuned mother-infant interaction, and to sensitize staff to situations of risk. Further research in this area is also essential to further

understand how to support this fragile relationship in such a challenging context. This could assist in mitigating many of the risks associated with prematurity.

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