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Colic as Trauma Release? A Comparative Exploration of Play Therapy in Children With and Without a History of Colic

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Colic, characterized by excessive, inconsolable crying in early infancy, has long puzzled researchers and clinicians. Traditional approaches have predominantly relied on medical models, yet they have failed to provide satisfactory explanations or effective treatments. This blinded comparative qualitative study took a novel approach by asking: What are the womb and birth experiences of colicky babies in relation to the prenatal relational trauma between mother and fetus or within the fetal environment? The sample comprised 23 mother-child dyads, 10 children with a history of colic and 13 without, whose histories and interactions unfolded through 10 videotaped sessions of Experiential Play Therapy. Children with a colic history engaged in far less traumatic reenactment than those without, and those born vaginally in both groups re-enacted less trauma than those born via caesarian section. These findings suggest that colic may be the natural release of accumulated pre- and peri-natal trauma rather than an illness or condition requiring treatment resulting in a healthier child than non colicky children whose trauma impacts have not been expressed or released..

Keywords: *colic, play therapy, trauma, prenatal, womb experience, birth experience, vaginal delivery, cesarian*

Crying is an adaptive form of communication between mother and infant to obtain nurturing (Lester et al., 1990); to convey needs regarding temperature change, hunger, and pain or discomfort (Brazelton, 1973); and to support the baby to discharge tension (Brazelton, 2010). However, crying becomes maladaptive when it fails to meet the infant's needs by driving the caregiver away and disorganizing the infant's world, which may negate the baby's ability to relieve stress (Brazelton, 2010). From this perspective, the prolonged, unsoothable, unexplained nature of colic can be seen as a maladaptive extension of normal crying (Lester et al., 1990). *Colic* comes from the Greek *kolikos* (colon), suggesting an underlying gastrointestinal disturbance (Day, 2014). The dominant biomedical model explains colic as a physical condition. Colic is excessive, unsoothable crying with no obvious cause defined by duration and periodicity. The classic operational definition of colic relies on the Wessel criteria (Wessel et al., 1954), summarized by a 3-3-3-3 pattern: crying by an otherwise healthy infant that lasts more than three hours/day; more than three days/week for more than three weeks; and occurs during the first three months of life. (Little consensus exists on how to measure infant crying [St. James-Roberts et al., 2003; Vermillet et al., 2022], and normal crying is considered anywhere from 2.5 hours/day to 2.5 hours/week [Barr et al., 2001; St. James-Roberts et al., 2013].) The unexplained and intense nature of colic is costly: it is one of the main reasons parents take infants to clinicians (Sarasu et al., 2018; cf. Akhnikh et al., 2014); it causes mothers to discontinue breastfeeding early (Kidd et al., 2019); and it is a primary cause for violence toward infants, notably head trauma, shaken-baby syndrome, and even death (Adamsbaum et al., 2010; Barr, 2014; Zeifman & St. James-Roberts, 2017).

Little research has focused on the association between trauma and colic in the relational context, much less whether pre- and peri-natal trauma may be correlated with colic. For example, similar to the behavior of animals encountering threat (Levine, 2010), crying may be a tension-release mechanism

or an energetic discharge process (Solter, 1995) enabling babies to work through trauma experienced in the womb and during birth. But the infant cannot do this alone. Primary caregivers act as a regulator for babies (Schore, 2000); the infant's developing social, psychological, and biological capacities cannot be understood without considering the bond with their mother (Ainsworth & Bowlby, 1991). This study investigated how prenatal and birth trauma are related to colic crying.

From a transpersonal perspective, the infant is not a discrete subject. The infant, the mother, the cry, the mother and infant's relational dance, as well as the family's environment, all interact in a multifaceted and complex manner (e.g., Ferrer, 2002). Moreover, pre- and peri-natal consciousness and memory formation prior to a fully functioning neocortex fall outside of the traditional medical model and share qualities with other nonordinary or paranormal states treated in transpersonal but not conventional psychology (e.g., Grof, 1975, 1979, 1990, 2009; Wade, 1998a, 1998b, 2022a, 2022b). Transpersonal psychology, like prenatal psychology, includes the womb as a theater of consciousness in its own right, where formative imprints gestate silently and affect lifetime development.

Infant Crying Behavior and Colic

The literature on infant crying focuses on either the infant's or the caregiver's experience from a first- or third-person perspective, (Green et al., 1991; Leuchter et al., 2013) rather than the perspective of an intersubjective relational field (Atwood & Stolorow, 2014; Varela & Shear, 1999). In a dyad, psychological boundaries become unusually complicated (Atwood & Stolorow, 2014): continuous conscious and unconscious feedback loops operate between self–other, self–world, and self–self. For example, interactional experiences produce different outcomes (Sroufe et al., 1983): in certain instances, a parent's intention to calm a newborn succeeds, but in others it may prolong the process. Parental responsiveness varies in person-specific ways, such as a mother's response toward her first- and second-born child, as well as in different situations (Keller et al., 1996).

Even identifying crying can be complicated. For instance, St. James-Roberts et al.'s (1996) comparison of parental diaries to audio recordings of infant crying, revealed that recordings accounted for only 25–45% of reported crying (p. 382; cf. Barr et al., 1988), suggesting that parents also interpret their infants as distressed based on their motor behavior, even when not audibly crying. Furthermore, parents' perception of, and reaction to, the amount and sound of crying varies by personality, ideas of what crying means, social expectations, and social supports (Alvarez, 2004; Barr, 1990, 2001; Brazelton, 1973; St. James-Roberts & Plewis, 1996).

Infant crying is part of the early attachment system between infant and caretaker that coordinates physiology, organizes movements, and tunes brains (Cassidy & Shaver, 1999; Schore, 2000; cf. Bowlby, 1979; Sroufe et al., 1983). For example, mother-infant pairs employ rhythmic head and body movements plus vocalizations to create and maintain patterned communicative sequences (Beebe, 2005; Beebe & Lachwann, 2013; Tronick et al., 1977), a framework essential when examining developmental changes in crying behavior: crying during the first three months might not be the same phenomenon, signify the same thing, or have the same purpose as crying later in the first year. Yet this moment-to-moment relatedness profoundly affects development. Infants anticipate that they will be able to alter their level of arousal with their mother's help, coconstructed unconsciously through the pair's interactional patterns (Beebe & Lachwann, 2013).

For infants, crying is the highest state of arousal on the continuum from sleep to wakefulness. In most newborns, the state transitions are from sleep to crying. Through predictable patterns of interaction, the wakefulness part of the cycle becomes more differentiated (Brazelton, 1983). Responses to environmental inputs are regulated by alertness and crying, such that alertness encourages stimulus intake, and crying results in stimulus rejection, similar to a defensive reaction (Sokolov,1963). Hence, by extending the awake states, babies use their positive and negative emotional experiences to actively elicit responses, shaping the pace intensity of signals caregivers direct toward them. In return, attention and alertness develop by opening more room to strengthen attachment in the infant-caregiver dyad and increase capacity for self-regulation.

Although most pediatric textbooks treat colic as a clinical syndrome, Barr (2001; Barr et al., 2005) defined it as the manifestation of crying in typically developing infants rather than a distinct behavioral feature. The signs of colic are usually categorized in three dimensions: (1) colic syndrome is age-dependent, with crying increasing at around two weeks, peaking in the second month, and returning to baseline by the fourth month, with crying bouts tending to group during late afternoon and evening; (2) colic is typified by behaviors, such as crying resistant to soothing and flexing the legs over the abdomen and arching the back; and (3) crying bouts are paroxysmal, that is, apparently spontaneous, unrelated to environmental stimulus, and starting and stopping suddenly. A systematic review (Wolke et al., 2017) following the Wessel criteria concluded that 25% of normal infants have colic at 6 weeks of age, compared to only 0.6% at 10–12 weeks. However, the Wessel criteria do not take account of caregivers' soothing (Barr et al., 2001); accordingly, modified versions of the Wessel criteria—sometimes called *Wessel Plus*—and new definitions of colic were created. Wessel Plus adds behaviors, such as back-arching, flexing the legs over abdomen, or flushed fascies (Illingworth, 1985; Lester et al., 1990). The Rome IV colic diagnostic criteria (Camilleri et al., 2017) hold that the infant is less than five months old when symptoms start and stop; that crying, fussing, and irritability are prolonged, occur without apparent cause, and cannot be prevented or resolved by caregivers' soothing efforts; and that the baby shows no evidence of a failure to thrive from birth to 5 months, fever, or illness.

Although its etiology remains uncertain, colic has been documented worldwide (Barr, 1998; Barr et al., 2001; Demirel et al., 2018; Wolke et al., 2017) and across highly varied caregiving cultures (e.g., Barr et al., 2001; St. James-Roberts et al., 2006). Theories of its etiology fall into four categories: organic disease, infant temperament, parent psychosocial stress variables, and trauma. For all of these, the research is inconclusive or even contradictory.

In the first category, several explanations have been hypothesized, one of which is infant imbalance of melatonin and serotonin (Bubenik & Pang, 1994; Weissbluth & Weissbluth, 1992). According to this argument, higher levels of serotonin in the evening may cause intestinal cramps associated with colic. It is argued that colicky infants have high serotonin and low melatonin (Engler et al., 2012; Weissbluth & Weissbluth, 1992; cf. Kimaata, 2007). Another explanation involves infantile migraine (Gelfand, 2016). A cross-sectional study (Gelfand et al., 2012) revealed that mothers with migraines were more than twice as likely to have infants with colic than mothers without. Sillanpää and Saarinens (2015) found that infantile colic was associated with increased risk for migraine without aura by age 18, but not for migraine with aura. Shamir et al. (2013) looked at the sensory-processing perspective, stating, "What seems to soothe non colicky babies (… being carried or touched) apparently has no impact on colicky babies" (p. 18), which may predict sensory integration difficulties. In fact, some studies (e.g., Barr, 1998, 2001) suggest that colic crying could result from significant neurobehavioral reorganization in these early months. In Hoeve's (2021) study, a remarkable 96.5% reduction in the vestibular score was observed in a sample of 120 colicky infants achieved through gentle vibrational stimulation to relax tight sub-occipital muscles. Vestibular hyperactivity theory goes hand-in-hand with earlier studies associating colic and later sensory processing difficulties (DeGangi et al., 1993; DeSantis et al., 2004). Some infants have an immature nervous system that causes difficulty in regulating their response to stimuli (Brazelton, 2010). Colic indicates a biological component in which the sympathetic nervous system's dominance over the parasympathetic may explain the lower tolerance for arousal and sudden onset of crying (Lester et al., 1990). However, another study indicated that such imbalance is not associated with colic (Kirjavainen, 2001). The fact that babies with colic cry more frequently and longer and are harder to calm supports the view that colic involves a regulatory capacity problem rather than simply being a reactivity disorder (Shamir et al., 2013). However, no studies included the caregiver's regulation capacities, known to affect infants' interactions with the world (de Rosnay et al., 2006; cf. Baumeister et al, 2001; Waters et al., 2015).

Most colic is attributed to gastrointestinal difficulties since infants often pull up their legs and pass gas during the crying (Barr, 2001). Intolerance

of cow's milk protein is well known; however, its role in colic is debatable (e.g., Edwards & Younus, 2019; Forsyth, 1989; Hill et al., 1995; Lucassen et al., 2000; Metcalf et al., 1994; Munblit et al., 2020; Rajani et al., 2020). Another gut-related argument is the association of intestinal microbiota, changed intestinal motility, and increased production of gases causing abdominal pain (de Weerth et al., 2013; Moloney et al., 2016; O'Mahony et al., 2017). After birth, the diversity of the infants' intestinal flora increases, but among colicky babies the diversity was lower, with reduced bifidobacteria and lactobacilli (Savino et al., 2009). Transient dysregulation of the nervous system during development may cause intestinal hypermotility in colicky infants (Savino, 2007). Although most cases of colic could be explained by colonic hyperperistalsis, there may be bias in these studies. For example, a drug called cimetropium bromide was more effective than placebo in reducing crying duration in children with colic but not the number of crying events (Savino et al., 2017). A final argument involves maternal drug ingestion and smoking, but the data are sparse (cf. Finnegan, 1970; Lester et al., 1993; Leung et al., 2004) and conflicting (e.g., Clifford et al., 2002; Shenassa & Brown, 2004).

The most studied category for the etiology of colic is infant temperament (Goldsmith et al., 1987). Some studies documenting temperamental differences in colic have controversial results, possibly because ratings were made by parents (Carey, 1972). In one study (Bang et al., 2020), the higher the mother's prenatal and postpartum depression, the more difficult the infant's temperament, and difficult infants showed more colic episodes than any other type of infants—a contrast to earlier studies. In fact, colicky infants do not exhibit the same physiological characteristics traditionally associated with difficult temperaments (Barr, 2001). The strongest predictors of parental perceptions of infant temperament are parents' own prenatal expectations (Diener et al., 1995).

Parental stress variables, such as finances, housing conditions, work, partner relationship, poor parenting skills, and domestic violence have been researched for infantile colic (Kurth et al., 2010; Wurmser et al., 2006; Yalcin et al., 2010). Although mothers of colicky infants often feel less competent and more distressed, this may well be the consequence of colic and not its cause (Helseth & Begnum, 2002). However, some studies (Carey, 1990; Lester et al., 1990) correlated colic with inadequate parenting. The mother's psychosocial stress during and after pregnancy has been hypothesized to increase infant crying; however, the findings are conflicting, and studies differ in design and methods (Kurth et al., 2010; Rautava et al., 1993; Wurmser et al., 2006). The large study by Alexander et al. (2017) on postpartum maternal happiness posited that mothers' relationships with their partners were the strongest protective factor for colic. It may be that fathers widen their partners' window of tolerance, and in turn their partners have more capacity to regulate their infants during stressful prolonged crying.

The preconception, prenatal, and perinatal trauma-colic dynamic is not well-researched, with the few studies focused on the influence of maternal prenatal stress on colic. According to Sondergaard et al. (2003), having an infant with colic is three times more likely if the mother experienced general stress during pregnancy and twice as likely if she experienced psychological stress, consistent with a study linking colic and psychosocial stress during pregnancy (Rautava et al., 1993). Furthermore, a prospective longitudinal study discovered that infants of mothers who reported more stressful events during pregnancy cried more in the first six months than those of mothers who scored lower (Wurmser et al., 2006). Colic research during pregnancy is crucial, but understanding the role of stress before conception is equally important (Felitti et al., 2019; Mahrer et al., 2021). According to recent developments regarding epigenetic mechanisms (Yehuda & Bierer, 2009), the offspring of severely stress-exposed parents are at risk for adverse outcomes through the transmission of enduring epigenetic changes in parental biological systems (intergenerational transmission). Research on humans and animals has shown that a number of adverse pregnancy outcomes are linked to preconception or prenatal stress, maternal depression, or maternal adverse childhood experiences (Folger et al., 2018). Even generations not exposed to these events may be affected through epigenetic, physiological, and/or metabolic programming

(Bakermans-Kranenburg et al., 2003; cf. La Greca et al., 2013; Pine et al., 2005; Scheeringa & Zeanah, 2008). Just as fetuses exposed to prenatal stress can make predictive adjustments to prepare for a hostile environment and do better in the context of inferior maternal care (Sandman et al., 2012), colicky infants, by crying excessively, may be trying to increase their chances for human connection in order to survive (Schore, 2001; Siegel, 2001). Other traumas include intrauterine events (e.g., Bókkón et al., 2014; Cotiga & Stulz-Koller, 2021; Hayton, 2011; Leonard, 2002; Pharaoh, & Adi, 2000) and obstetrical procedures (e.g., Cheek, 1975; Emerson, 1998, 2020; Rhodes, 2015); both are grossly overlooked in the literature. For example, Weerth and Buitelaar (2007) found that signs of traumatic birth were linked to higher fussing, crying, and unsoothability in infants 6 to 8 weeks old. The sole discussion that modern obstetric practice might increase the prevalence of colic prior to that was dated (Thomas, 1981), and the next (Hogdal et al., 1991) found no conclusive link between real obstetrical difficulties or labor occurrences and colic.

Experimental research on neonatal memory (Coates & Gaensbauer, 2009; Gaensbauer, 2002; Scheeringa & Gaensbauer, 2000) has shown that children may recall past experiences as early as six months, and mounting cross-disciplinary research supports prenatal memories (e.g., Bellieni, & Buonocore, 2012; Beshkar, 2008; Brusseau, 2008; Platt, 2011). Data come from adults and older children via regression techniques, hypnotic trance, or spontaneous reports by young children in a normal state (e.g., Grof & Bennett, 1990; McCarty, 2004; Verny, 2012). Traumatic experiences during sensitive development periods can lead to post-traumatic symptoms (Castellino, 2000; Emerson, 1992) expressed in precise ways. For example, suicide methods mimic the circumstances of traumatic births (Jacobson, 1988; Jacobson et al., 1987), and multiple suicide attempts by teenagers coincided with the anniversaries (Feldmar, 1979) of the date their mothers had attempted (unsuccessfully) to abort them. Hypnotically regressed people have not only recalled important gestational events (e.g., Emerson, 2021a, 2021b; Piontelli, 1992) but also re-enacted their positions inside the womb and during birth (Cheek, 1974, 1986). Obstetrical procedures causing birth trauma include anesthesia, induction, forceps, and cesarean surgery (Emerson, 2021a, 2021b), frequently producing psychological and physical difficulties (Emerson 1996, 2021a, 2021b). Many symptoms considered normal in babies are really caused by obstetrical procedures and intrauterine occurrences. For example, according to Emerson (2021a, 2021b), despite the fact that 2 hours is regarded to be the "typical" daily crying period for infants (Kitzinger, 1990), untraumatized infants cry on average only 20 minutes/day, and the majority of that is used to express their needs and discomfort. Traumatized infants cry for 2 hours whereas shocked babies' crying lasts 4–6 hours per day (Solter, 1995). Even natural birth is painful (Terry, 2021). Human brains and crania have grown in size as humans have evolved while pelvises have shrunk to support bipedalism. Humans are the only mammals whose heads must rotate to pass through the birth canal due to their narrow pelvises, which produces different degrees of brain trauma from strong contractions. According to Terry, unresolved head trauma is one of the main experiences babies are trying to express and release when they are "memory crying" as in colic (p. 452).

Thus colic may be correlated to womb and birth trauma by serving as the release mechanism for accumulated stress that could not be previously processed. However, colic can be disruptive to bonding and maternal recovery from childbirth. It is important to understand the stressors associated with trying to calm an inconsolable baby because they may lead to infant abuse and family distress. Colic can have devastating short- and long-term effects. Exploring the least researched influence on infant well-being—pre- and peri-natal experiences—may provide insights other avenues have not produced.

Play Therapy

To access pre- and peri-natal experience and its potential link to colic, this study employed play therapy with young children. Since Anna Freud and Melanie Klein incorporated play into the therapeutic process in the 1930s, play has been employed in child psychotherapy (Russ, 2004). Play therapy is equivalent to an adult's verbal free association in psychoanalysis (Klein, 1932, 1955; cf. Freud, 1974). In directed play therapy, the counselor

plans the activity, picks the play environment, and establishes the ground rules. In nondirected therapy, children choose their play medium from a supply of objects (e.g., puppets, dolls, art supplies), define their own rules, and use the playthings as they like under some time and safety constraints. In play therapy, as in humanistic and transpersonal psychology, the underlying assumption is that a powerful force within each child continuously strives toward emotional growth and well-being (Axline, 1969). Once the healing potential has been activated through relationship, children, in play, go where they need to for healing to occur (Allan, 1988; Allan & Lawton-Speert, 1993; Kalff, 2003).

Early symbolic play is characterized by the behavioral enactment of traumatic situations (Gaensbauer, 1995, 2002, 2004; Terr, 1988; Markese, 2007; cf. van der Kolk, & Greenberg, 1987). Early trauma must be processed for the child to overcome primal fears of annihilation, abandonment, and disintegration, and to heal the behavior and retain treatment benefits even in the presence of reminders of the trauma (Green et al., 2010). The therapeutic environment offers a safe, supportive space to reenact past traumas, leading to mastery that enhances resilience.

According to early memory studies (Terr, 1990, 1991), children who encounter trauma between conception and age 2 communicate their experience through behaviors rather than verbalization. However, since children begin to develop the ability to create and interpret symbols around age 2 (Bloom & Markson, 1998), most play therapy models start seeing children at that time. A typical client-centered play therapy session includes a warm-up or exploratory stage, an aggressive or testing for protection stage, a regressive or dependency stage, and a mastery or therapeutic growth stage (Nordling & Guerney, 1999; Norton & Norton, 2006). During each stage children display a certain set of typical behaviors, and certain themes and therapeutic issues tend to emerge. The content of the regression stage when children go back to a previous stage for growth and healing may vary, but the core issues children work on are nurturance, attachment, identity, and relationships (Cochran et al., 2010; Nordling & Guerney, 1999).

In the womb, infants can only constrict and curl into a fetal position, swell into useless fury postures, or split their shock into shattered body parts—a primitive type of dissociation—to defend themselves (Emerson, 2021). For a fetus, especially susceptible to stress and shock, the neurological and physiological mechanisms underlying the stress response are very different, as is evident in the offspring of prenatally traumatized animals. These findings, generalized to humans, could mean a predisposition for chronically high stress levels and unhealthy coping mechanisms (Gaensbauer, 2002, 2004; Sapolsky, 2004), which may manifest as sleeping, eating, and behavior problems (Michels, 2015; Van der Oord, 2006). In play therapy, the traumatized child in the company of a caring, non-judgmental therapist will play out these early memories first by enacting their entrapment (Norton, 2020; Green et al., 2010). As the therapeutic alliance solidifies and the child re-experiences being hurt, empowering defensive actions that were inhibited in the past occur. For example, using their relationship with the therapist as a secure base, the regressed child fights, flees, and moves freely as opposed to the entrapment experienced in the womb (Green et al., 2010). After this incorporation of trauma, the child can take steps to act appropriately for their developmental age and integrate the gains of regressed stages into their personality structures (Nordling & Guerney, 1999). The child can now demonstrate self-control, express emotions appropriately, and feel competent. As play shifts to become age-appropriate, nonconflicted, and undisturbed, therapy can be terminated (Nordling & Guerney, 1999).

For children with a history of colic, if the early prolonged, unsoothable crying reflects some womb or birth trauma, in play therapy they may symbolically express previously repressed experiences, which will be integrated into consciousness. Once safety is established, children are unconsciously drawn to toys which, combined with the child's relational dynamics with the therapist, become the vehicles to express and ultimately resolve their issues. During this phase, children with infantile colic may be drawn to toys, such as a play tunnel representing the birth, or a baby

bottle, a regression to oral stage, or overt denial of objects, such as a doctor's kit, which may provide hints about where their issues lie (Cockle, 1993). The developing play themes are often expressed in opposition to each another (e.g., danger vs. safety, nurturance vs. aggression; Benedict, 2008; Allan & Bertoia, 1992; Levin, 1992). Play themes spontaneously develop and change over time; hence, a child who first plays their difficult prenatal experience, then the healing one, is presumed to be moving along a personal path toward resolution and healing. The resolution phase becomes apparent when there is minimal need to symbolically act out issues. Symbols of personal power, centering, and wholeness emerge in the play (Moustakas, 1959), and more humor and light-hearted fantasy themes appear, along with a new sense of peace and resolution and a decrease in the child's negative emotional energy, absorption, and concentration. As the child begins to distance themselves from the therapist, it suggests that therapy is no longer the child's priority, and social engagement and mastery have been achieved.

To date, empirical findings have not clarified whether colic crying is evidence of a disease with a specific cause or simply the extreme end of a crying continuum. Although the etiology is unknown, colic presents a significant problem for many families with considerable risk for the parents' and infant's wellbeing. Research into pre- and peri-natal trauma remains a gap in the literature, despite its promise for understanding colic, and play therapy offers a way to examine early trauma for its connection to colic.

Study

The purpose of this study was to investigate whether a relationship exists between pre- and peri-natal experiences and colic using play therapy, specifically by asking: What are the womb and birth experiences of colicky babies in relation to the prenatal relational trauma between mother and fetus or within the fetal environment?

Method

This blinded qualitative study examined the womb and birth experiences of young children with and without a history of colic as expressed in play therapy sessions triangulated with semi-structured interviews with the play therapists and the children's mothers in addition to the therapists' process notes and field notes. The video-taped play sessions were independently assessed by two therapist coresearchers trained in Experiential Play Therapy (EPT) to discover which play themes might express the womb and the birth dynamics, as well as the child's emotions and experiences.

Participants

The study involved two samples: play therapists who conducted sessions and served as co-researchers to analyze the data, and child-mother pairs.

Experiential Play Therapy practitioners were chosen for their deep understanding of play themes (Benedict et al., 2008). Many play therapy modalities are used today, but EPT provides general frameworks to assess the progression of therapy through the stages of treatment and the symbolic meaning of each toy and the environment (Norton & Norton, 1997). The inclusion criteria for the therapists conducting the play sessions were: minimum age 27 years for maturity and experience; working as full-time therapists with children and their families; legally practicing with a clinical psychology degree from an accredited Turkish or international university; minimum EPT Associate Level Certification; minimum 2 years' experience using EPT; and being based in Türkiye and fluent in Turkish, where the study took place. Therapists could have been of any sex, culture, ethnicity, nationality, race, religion, or socioeconomic class because these factors are not known to affect their efficacy. Candidates were excluded if they were parents of a colicky child, had been diagnosed with PTSD, or were currently in treatment for unresolved trauma. The study also included two therapist co-researchers who worked with the first author in reviewing and analyzing the work product of the larger therapist sample. The co-researchers had to be at least 27 years old; have professional-level EPT certification and a master's degree in psychology; have a minimum of 5 years' supervised clinical EPT experiences; and speak fluent Turkish.

The selection criteria for child participants were to be aged 2.5–4 years; not otherwise under

therapeutic care; taking no prescribed medications; having no reported previous trauma; having no known genetic conditions or signs of developmental delays; and living with their biological mother. To qualify for the colic group, children had to have met the Wessel (1954) criteria in infancy. Children could be of either sex. Furthermore, cesarean birth produces different residual dynamics for children than vaginal birth, and both can be traumatic (e.g., Grölund et al.,1999; Wilson et al., 2021), so children were included with both birth modalities. The therapeutic play of children aged 2 to 4 is generally equivalent (Norton & Norton, 2020), whereas the ability to access and express pre- and peri-natal memories easily through metaphor declines around the age of 5 (Chamberlain, 1995), hence the age range for the study.

Recruitment

For the therapist sample, the first author reached out through networking, then contacted volunteers, and conducted a 15-minute telephone screening assessment, explaining the study requirements. Informed consent and a demographic questionnaire were e-mailed for completion. Recruitment continued until 5 qualified therapists were enrolled. The same procedure was followed to recruit the two co-researchers.

A flyer posted on the first author's social media recruited the mother and child participants. Mothers responded by e-mail, and their applications were reviewed. The author then initiated a 20-minute screening via the video application WhatsApp to interview and observe the eligible mothers. A follow-up interview used an adapted form of the Child and Adolescent Trauma Screen (CATS; Sachser et al., 2017), an empirically-derived measure intended for use across child-serving systems, and the Devereux adult Resilience Survey (Mackrain, 2013) to understand the child's and mother's history, respectively. Mothers were excluded if they answered "not yet" to 8 or more questions or if the researcher noticed visible signs of trauma. Qualified participants were randomly distributed among the 5 therapists as equally as possible based on the birthing method and colic status, but the therapists were blinded to those conditions. The assigned therapist conducted a

semi-structured Zoom interview with the mother, including trauma questions adapted from the PTSD Checklist DSM5 (PCL-5)—Adult (18+; Blevins et al., 2015), a 20-item self-report measure that assesses the *DSM-5* symptoms of PTSD to make a provisional diagnosis, which may have been important in deciding how to support the mother throughout the study. Mothers filled out informed consent forms for themselves, and they and other legally responsible caretakers did so for the children.

Procedure

All therapists participated in Zoom group orientations and training on the EPT modified format used in the study to access womb and birth experiences, review the use of toys and the therapy room setup, and how to fill out therapist process notes, reflection notes, and co-researcher field notes. Each therapist working with children conducted a maximum of 10 weekly 40-minute EPT sessions or the equivalent (below) with each assigned child. Therapists conducted a 10-minute consultation alone with the mother at the end of every play therapy session.

Each therapist set an intention before each session, consistent with EPT guidelines. During the initial session, a mutual intention for the duration of sessions was set and the purpose of the play session was explained to the child. Each subsequent session began with the therapist with the child and/or the mother, and ended with the mother alone. All sessions took place in the first author's Istanbul office where video-recording equipment with date and time stamps to minute and second were set up. The play therapy room contained a sizable window with a sheer curtain that remained fully drawn, which children sometimes integrate into their play. The room is furnished with symbolic toys, including animal and human figures, dolls, puppets, and stuffed animals; toy vehicles; nursing items like pacifiers and bottles; expressive tools, such as crayons, clay, and musical instruments; nurturing items, such as toy food and cooking implements; toy doctor's kits; and assertive items like toy guns and knives. The larger furnishings were:

- The egg chair, which features a suspended egg-shaped seat enclosed by a fabric cov-

er that wraps around the seat attached to a steel stand so that it can sway and rotate. The entrance to the chair is covered by a fabric flap.

- Tunnels consisting of hollow, collapsible cylindrical structures about 18 inches in diameter and 5 feet long when fully extended.
- The sand pool, a box roughly 3 feet x 2 feet, and 8 inches in depth with wooden borders filled with bulgur instead of sand.
- The tent, about 3 feet high, 3 feet wide, and 3 feet deep, constructed from lightweight material with a single flap-style entrance that can be rolled up or secured.

The lead researcher conducted a group supervision session each week for the play therapists and co-researchers via Zoom. Therapists wrote progress and reflection notes on each session. In addition, the researcher kept field notes.

Immediately following each session, the therapist uploaded a video recording of the session via WeTransfer to a secure email that only the coresearchers could access. Coresearchers downloaded each video, independently observed it, identified play themes using the time stamps for exact reference, and took field notes. Separately, at the end of the entire process, the mothers' trauma questionnaires, therapists' progress notes, and reflection notes of the play themes were collected.

Treatment of Data

The dataset consisted of written summaries of therapist interviews, video recordings of therapy sessions, therapists' progress and field notes, co-researchers' field notes, and the lead researcher's journal. All data were stored on the researcher's password-protected computer to which only the she had access. Code names were assigned to all participants, and the key was stored separately in a password-protected file on the lead researcher's computer to which only she had access. All electronic data were stored on password protected computers with disc-based encryption. Only secured websites protected with Secure Sockets Layer and TLS 1.2 or higher were used to collect or store participant data. Hardcopy data were stored in a locked area accessible only by the lead researcher.

Coding was primarily done using video data in addition to video-recorded spoken words in transcripts (Heath et al., 2010) using standard protocols for video data analysis. The coresearchers recorded observations of behavior, emotion, and somatic expression for each therapist and child for each session, including play themes and toys used. The lead researcher transcribed the audio portions of the recordings. Notations by coresearchers created verbal descriptions of behavior beginning with the timestamp data in minutes and seconds, e.g., 11:15, ALH strikes stuffed bear repeatedly against the wall, angrily saying, "You're bad, you're bad" in a loud voice (raw data). This might have been coded *role play, baby punishment*. Therapists' behavior and interpretations were noted but not coded. Code labels were developed from the raw descriptions of the activities and later refined. The coresearchers shared their play themes notes with the lead researcher after all sessions were completed. The lead researcher compared the session notes to assess inter-rater reliability, noting any disagreements. Upon the completion of all sessions, the lead researcher met with the coresearchers together to resolve disparities and arrive at consensus. The lead researcher compared data from the colicky and non-colicky children's sessions and prepared a preliminary analysis. Then she convened the coresearchers and presented the comparison (they were blinded to the colic condition to this point) to discuss the play themes that emerged over all the sessions. In another document, the lead researcher combined coresearcher observations of what occurred, how it was interpreted, and why, for each timestamp entry (e.g., 11:15–12:22 ALH uses a stuffed bear to symbolize how he would like to hurt his little brother). Reported findings were translated into English using two bilingual professional translators, one whose first language was Turkish, and one whose was English as a check. Both translators signed a confidentiality agreement.

Braun and Clarke's (2006) framework for thematic analysis was used for the behavioral and verbal data. First, the researchers read and reviewed all the videos and transcripts to become familiar with the data. Second, the researchers listed all the topics, combined them according to similarity,

and created a column for each of the clustered topics. Then, the researchers assigned preliminary codes to the content of the behaviors (Creswell & Creswell, 2013), using open coding (Gallicano, 2013). Themes demonstrated by three or more participants were categorized. Themes were then reviewed and compared by the lead researcher. The researchers' themes were correlated with the mothers' histories of trauma, delivery method, and colic status. The trauma interviews were coded and grouped before checking the correlation. The first author drew links between these themes and their interpretations in the literature, documenting the rationale for methodological and analytical choices in the reflective journal (Chan et al., 2013; Korstjens & Moser, 2018; Nowell et al., 2017).

Results

Recruitment for the child sample commenced January 9th, 2023, and after two weeks, 941 applications were received, of which 720 did not meet the age requirements and 105 resided outside the Istanbul region. Initial phone interviews narrowed the applicants to 82. However, the study was impeded by a major earthquake, causing significant destruction and displacing millions. After that, only 60 candidates agreed to participate, and after phone screening, 35 were deemed eligible, but only 20 agreed to the full 10-week study. Ten additional mother-child pairs were recruited through word of mouth. By March 9th, the therapy sessions were prepared to commence with 15 participants with a history of colic and 15 without. However, unforeseen circumstances caused 3 participants to drop out just prior to the start of the study, and the first supervision session revealed that one mother was experiencing marital conflict that was affecting her parenting, and another child was displaying signs of developmental challenges. Two mothers withdrew, one citing scheduling difficulties, and the other reporting that the study's focus on her child's birth experience was psychologically overwhelming.

As the sessions progressed, it became evident that missed sessions due to children's falling ill posed an additional challenge. To address this, some sessions were conducted for two hours and/ or extra sessions were added. The longer sessions showed a significant saturation regarding the children's womb and birth experiences during the data analysis phases, discussed during supervision sessions, and it was decided to offer this option to all participants. Additionally, supervision revealed that having the mother present in the therapy room was beneficial in validating that the child's play was centered on the womb and/or birth. Twenty-three participant pairs successfully completed all sessions by May 18, 2023, 10 children with a history of colic, 13 without for the final sample.

Sample Demographics

All co-researchers and play therapists were female. The co-researchers, aged 35 and 40, had over a decade of experience. The therapists ranged in age from 29 to 40, with their experience in play therapy spanning 3–10 years. Clients were assigned randomly to the five therapists.

Table 1 shows the children's age and sex distribution. The colic children were younger (M = 33.1 months; SD = 8.32 months) than non-colic children (M = 46.46 months; SD = 2.59 months). The majority fell below the age of four years as of May 2023, the last month of their therapy sessions. Sex was nearly evenly distributed across colic groups (M = 45.92 males with colic, M = 40.16 males without colic; and M = 41.20 females with colic, M = 37.25 females without colic).

Age in Months	With Colic	Without Colic	Total
31-37			
Male	1	3	**4**
Female	1	3	**4**
38-44			
Male	2	4	**6**
Female	3	2	**5**
45-51			
Male	0	0	**0**
Female	2	1	**3**
52-58			
Male	1	0	**1**
Female	0	0	**0**
Total	**10**	**13**	**23**

Table 1. *Children's age and sex by colic history*

All mothers were married, aged 31–41 years (*M* = 36 years; *SD* = 2.89). Mothers were well educated, with approximately 90% holding either a bachelor's or master's degree. Mothers of noncolic children tended to have more education; mothers of colic and non-colic children were roughly equally engaged in the workforce. The more education mothers without colic babies had, the more they tended to be employed. For mothers of children with colic, the mean age for planned pregnancies was 34.5 years (*SD* = 2.12) and for unplanned pregnancies, 37 years (*SD* = 3.54). In the non-colic planned pregnancy group, the mean maternal age was 37.33 years (*SD* = 2.89). Mothers of both colic and noncolic children reported abortion and miscarriage histories: 1 had a girl with colic, and 4 had children without colic (1M, 3F). The mother of the colicky girl had a previous miscarriage. Among the mothers of noncolic girls, one had had an abortion at 21 and two miscarriages within 1 and 2 years before giving birth to her daughter. The mother of the noncolic boy had an abortion at 21 and a miscarriage five months before conceiving her son. Another mother of a noncolic girl had a stillborn baby at 40 weeks g.a., and another had undergone an abortion at 25.

Countries vary by the proportion of cesarean section births; according to the World Health Organization (2018), Türkiye has one of the highest rates (48%; compared to the US 32%). Cesarean deliveries are often favored by medical practitioners in Türkiye due to a confluence of factors, including convenience and expedition. The Turkish medical landscape widely employs induced labor, which expedites the process and potentially provides a rationale for the eventual transition to cesarean delivery. This scenario underscores the intricate interplay between medical decision-making, patient preferences, and pragmatic factors influencing healthcare providers (Golbasi et al., 2023). In this context, Turkish doctors often first opt for labor induction, and then for various reasons, such as insufficient cervical dilation, convert to a C-section delivery. Labor induction usually involves giving medications that speed labor by softening, thinning, and opening the cervix; rupturing the amniotic sac; giving medications that cause contractions;

and/or using a Foley bulb to introduce saline via catheter into the cervix. Additional measures include applying manual pressure to the uppermost part of the uterus directed towards the birth canal (fundal pressure) and using a ventous (vacuum) cup attached to the baby's head by a plastic or metal cup attached to a suction device or forceps. Fundal pressure is widespread but lacks evidence of benefit and is potentially harmful; the World Health Organization (2018) and other bodies specifically recommend against its use (Farrington et al., 2021; Malvasi et al., 2019). Fundal pressure may result in shoulder dystocia and neonatal birth injuries (e.g., Abedzadeh-Kalahroudi, et al., 2015; Furrer et al., 2015; Malvasi, et al., 2019; Pinar & Karacam, 2018). In a systematic review and meta-analysis on the prevalence of fundal pressure, the proportion of births involving fundal pressure in Türkiye ranged from 30.6–57.5% (Farrington et al., 2021).

Table 2 shows the distribution of cesarian and vaginal deliveries, including whether induction was involved. Among C-section colic cases, 50% involved labor induction. One colic vaginal birth involved fundal pressure, as did two vaginal and one C-section non-colic births.

Notably, 5 children (1 colic M; 4 noncolic, 3M, 1F) underwent neonatal care. Reasons for hospitalization included low birth weight, premature birth, and jaundice. During these hospital stays, although mothers were able to visit at least once a day to breastfeed, two mothers did not see their babies for 3 to 4 days.

Maternal breastfeeding duration exhibited wide variation, spanning 3–40 months. The average duration for colic children was 18.8 months (*SD* =

Birth Method	Colic		Noncolic		Total
	Female	Male	Female	Male	
Cesarian	3	3	3	3	12
	2	1	0	0	–
Vaginal	3	1	3	4	11
	0	1	1	3	–
Total	6	4	6	7	23

Table 2. *Colic/noncolic children by birth method*

7.21), and for noncolic children was 25.88 months (*SD* = 6.24). In the colic group, females tended to have higher breastfeeding durations, within the 25–27 months range. In the non-colic group, males exhibited a higher prevalence of breastfeeding durations surpassing 30 months.

Analysis of Play Therapy Sessions

While data from all sessions were analyzed, the bulk of the meaningful data originated from sessions 3–8, subsequent to rapport building during sessions 1 and 2 and before closure began in sessions 9 and 10. The findings were grouped into thematic clusters in frequency rank order by the type of play. Frequency count abbreviations are M for male and F for female, with C for children who had colic history and NC for children without. Children's pseudonyms are a first name, and their mother's are the child's pseudonym followed by an M, e.g., Sam for the boy and SamM for Sam's mother. Owing to length constraints, usually only one example of the coded data is provided for each theme.

Role play

The role play code was conceived as a representation of the mother-child dynamics, with children projecting those dynamics into their interactions with the therapist as well. Among the 23 children, 22 engaged in role-play activities (96%; 10M, 12F; 9C, 13C). The *role play secure* code involved constructive and nurturing play characterized by a collaborative, positive mood. It was demonstrated by 11 children (48%; 3M, 8F; 6C, 5NC), who played hairdresser, cooking, caregiving, tending babies, embracing, building Lego® structures together, and drawing with their mothers and/or the therapist.

> In Session 4, Sarah (C) and the therapist began playing with the dolls together. Sarah picked up an undressed doll and said, "My baby," then kissed her. Holding the doll's hands together, she said, "Look, she is making a heart"… . She took another doll and said, "My baby" again. Holding that doll's hands together, she repeated, "Look, she is making a heart." Sarah stood and said to the doll, "Let's put on short sleeves ..." and went to the shelf to get the clothes. ... She brought the clothes to the baby's cradle, saying, "Look, my dear girl, I brought short-sleeved clothes."

> She turned to the therapist and asked, "Can you dress her?" The therapist responded, "Come on, sweet baby. You wanted to wear short-sleeved clothes. Your mom brought you short-sleeved clothes. I will gently put them on you now." ... Sarah opened the doll's diaper and said, "Now let's take these off, my baby… . Let's do the hands too." The therapist said, "Now you're lifting the arms." Sarah asked the therapist, "Can you do this one's bottom?" and then said, "Oh, I did it." Sarah attempted to remove the diaper, saying, "Now let's do the other hand of the baby. Come on, cutie." Then she lifted her head and said to the therapist, "Let's call this one cutie."

All vaginally born colic children (4C) participated in the secure role play compared to only 2 out of 7 vaginally born noncolic children. A higher proportion of non-colic C-section children engaged than colic C-section children (50% versus 33%). Females formed the majority.

Within the *role play frustration* code, 7 (30%; 3M, 4F; 1C, 6NC) depicted roles involving misbehavior, feeling unloved when they misbehaved, not being able to get what they wanted, perfectionism, and scenarios where negative relational aspects were highlighted, causing disappointment.

> In Session 3, Sophia (C) was playing with a doll named after a cartoon character "Ceko" that she brought from home. She had two dolls called Ceko, one bigger than the other, which she sometimes brought to the session. Sophia turned to the therapist and said, "We both like Ceko." The therapist responded, "Yes, I really like both Cekos." Sophia said, "The big Ceko misbehaves …" SophiaM said, "Oh, she misbehaves so much… ." The therapist said that even if she misbehaved, she still liked her a lot. However, Sophia reiterated, "Ceko is very naughty."

> In Session 6, Markus (NC) turned to the therapist and gave her a role asking, "Should I play with these animals?" The therapist repeated, "Should I play with these animals?" and continued, "I really want to play with them, oh well." Ignoring the therapist's words, Markus pointed to a toy car and asked the therapist to

say; "Should I play with this car, then?" As Markus moved the car back, the therapist expressed her disappointment with her tone, saying, "I can't play with it either." The therapist continued in a sad tone, "You take all of them, I can't play with what I want." Markus then instructed the therapist to say, "Should I take this green car?" He extended the car towards the therapist and then pulled it back. The therapist remained sad.

For frustrating role play, a greater percentage of C-section noncolic children participated compared to the colic group (67% versus 17%). Twenty-nine percent of vaginally born noncolic children engaged in role play frustration compared to none of the vaginally born colic children.

In *role play harming others*, 5 boys (38%; 5M; 2C, 3NC) assigned roles in which they would physically hurt the person in the role of mother or therapist. They handcuffed themselves or the other person, wounded with toy weapons, and attacked with toy animals. Sometimes they used baby dolls, cars, or other items to depict relationship dynamics. One theme revolved around the idea that if a person hurt someone or was mean to them, the antagonist might get hurt as well.

In Session 5, Alex (C) took a toy knife from the shelf and placed it in front of the therapist. Saying "I'll take this too," Alex picked up toy binoculars. To understand the role, the therapist took the toy knife and asked, "Am I taking this? What should I do with it?" Alex said, "I'll take a knife, too. Where's the knife?" The therapist and Alex pretended to hit each other's knives. The therapist exclaimed, "Oops, I dropped my knife!" Whispering to understand the role, she asked, "Should I take the knife?" Alex replied, "Yes." Alex continued the play-fighting with his knife, saying, "Now you'll see, here it is, here it is." Alex took the knife from the therapist's hand and continued attacking with both knives ... . Despite the therapist's expression of pain, he continued attacking her.

In the *role play role reversal* code, 5 children (22%; 3M, 2F; 1C, 4NC) demonstrated consideration of their mother's emotions and needs before their own. At times, they enacted these scenarios by assigning roles to the therapist, utilizing toys, or participating in one-on-one play with their mothers. They nurtured their mothers, preparing meals for them and incorporating elements that their mothers enjoyed.

In Session 6, Eric (C) played an ice cream seller, with his mother and the therapist acting as customers. Holding two pretend ice cream cones, Eric turned to his mother and asked, "Is yours finished?" EricM replied, "I want chocolate [ice-cream] too." He took the cone from his mother and prepared it again. The therapist asked, "So, you're going to serve all of us again?" Eric first offered the cone to his mother. EricM said, "But I wanted the chocolate one." Eric took the cone back and then handed it to her, saying, "Here, yours is chocolate." Later, Eric said, "Look, Mom, a comb." When Eric picked up the comb, EricM chuckled and said, "Yes," mentioning that her son enjoyed combing her hair. Eric stood and began to comb his mother's hair. Then he turned to the therapist and started combing her hair as well.

Tunnel Play

Eighteen children (78%, 10M, 8F, 7C, 11NC) entered and exited the tunnel. Upon exiting, some went to their mothers, enjoyed their mothers' greetings, and reciprocated the hugs, but sometimes they did not receive their mothers' greetings and did not respond. Children engaged in various types of tunnel play: fast, slow, stopping, waiting inside, wearing the tunnel around their necks, jumping on it, placing items inside, and more. After emerging from the tunnel, children engaged in crawling, frog-like movements, stomping their feet, rolling, and assuming a slightly open-mouthed posture and regressive movements similar to positions in the womb. In the *tunnel, difficult passage play* code, children (12, 52%; 9M, 3F; 4C, 8NC) engaged in activities inside the tunnel that involved fearful statements like, "Mom, save me," "I'm stuck," and statements of threat, such as, "You're a thief," "You're trying to take me." Some expressed being trapped through pretend handcuff actions. Others acted out scenarios such as a ball coming down on

top of the tunnel, jumping onto the tunnel, hitting the tunnel with an imaginary gun, or a wild animal entering the tunnel and biting them. Some altered the tunnel's position. During some sessions, children hugged their mothers upon exiting the tunnel or their mothers greeted them with a hug. However, even when their mothers hugged and reassured them, the children continued to engage in activities signifying persistence of threat.

In Session 3, Becky (NC) paused inside the tunnel and asked the therapist and her mother to find her, saying, "Where am I?" They pretended to search for Becky, asking where she was. Becky said, "I'm stuck here, Mom." She came out of the tunnel.

In the *tunnel, easy passage play* code (6, 26%; 1M, 5F; 3C, 3NC) the children conveyed a sense of well-being through body language, sounds, and assigned roles that radiated positive emotions like joy and excitement involving the mother or the therapist. Several experienced affectionate and enjoyable reunions with their mothers at the tunnel's exit.

In Session 3, Emily (C) was on all fours in front of her mother. Using her feet, she moved the tunnel positioned behind her from side to side. Then she turned around and reached out to her mother's lap, using her feet to sway the tunnel left and right. Approaching, she nudged the tunnel slightly with her hand. Afterward, she stood and crawled through the tunnel, emitting joyful sounds and shouts. Next, she sat on a small stool and jumped off it into the tunnel. Following this, she sat in the egg chair, then leaped from it into the tunnel. She repeated this action multiple times. Moving through the tunnel, she entered the tent. She beckoned her mother into the tent. Upon EmilyM's entry, Emily exited, entered the tunnel, and emerged from the other side. Going back in from the exit, she once again emerged from the entrance and re-entered the tent.

Girls consistently demonstrated significantly higher levels of engagement in the easy passage scenario compared to boys who were more represented in the difficult passage, regardless of their method of delivery. Half of the colic children engaged in difficult passage play compared to 83% in the noncolic group. For vaginal births, 25% of colic children participated in the difficult passage play in contrast to 43% of the noncolic group. Half of colic children born vaginally engaged in easy passage play compared to 29% without a colic history. In easy passage play, 1 out of 4 C-section colic children engaged compared to 1 out of 7 C-section noncolic children.

Sand Pool Play

Seventeen children (74%; 10M, 7F; 5C, 12NC) engaged in sand pool play. Activities revolved around themes of eating and nourishment as well as instances of disliking the food provided. They made sounds like someone going under water, stretched out in the sand pool, poured sand from above to below, and splashed the sand around. They created sand hills, made spaces in the sand to drive cars and ships, and buried objects only to later find them. *Sand pool hiding play* (11, 50%; 6M, 5F; 4C, 7NC) involved children hiding and finding their bodies, fish, animals, toy vehicles, household items, and more. They sometimes created small hills with shovels and rakes or gathered sand in one spot. They placed sand in a colander and shook it. Occasionally, they scattered sand around or fully immersed themselves in it. They moved sand to reveal the bottom of the sand container and drove cars and ships in those spaces.

In Session 3, Michael (NC) exclaimed, "The ships are rolling!" as he emerged from the tunnel. Then he asked, "Oh, where's the sand?" He took a green car from the shelf to the sand. While shoveling sand on it, he said, "It's closing [the sand is covering it up]." He turned to his mother and said, "Can you help me too?" and handed her the rake. Then he showed his mother where she should pour the sand. Then he eagerly inquired, "Where's the car?" Michael began to shovel sand, instructing his mother, "You open too." He unearthed the car and shook it in the sand pool. He rapidly rubbed the car's wheels against the sand. Later he fetched small animals from the shelves and brought them to the sand pool. "Now let's hide these. Mom, let's hide them," he proposed. Together Michael

and MichaelM covered the animals with sand. Michael exclaimed, "Aha! Where are they?" He continued digging. Afterward, he stood, fetched a few objects from the shelf and returned to the sand. He carefully removed each small animal from the sand, gathered them in his palm, and placed them all on the mat.

In the *sand pool motion play* code, children (6, 26%; 4M, 2F; 1C, 5NC) patted the sand, placed it in the colander, and buried food items but transformed these activities into themed play. For instance, they claimed to be preparing meals or transitioned into playing as if they were in a grocery store. They presented the meals they prepared to their mothers and the therapist, ate them themselves, or fed the dolls. The meals were sometimes deemed delicious, while other times the sauce was too spicy, causing the therapist or mother to pretend their mouths were burning. There were instances when the meals were insufficient, and occasionally, they buried grooming toys. Sometimes, imaginary thieves stole their food. Additionally, children assigned the roles of desiring food but being ignored to the therapist and mother.

In Session 4, Markus (NC) moved to the sand pool and said to the therapist, "Now you will be a market vendor." He asked the therapist to say, "Give me food." The therapist started saying, "Give me food," "Can you give me some food?" Markus ignored her and kept filling the colander with sand, patting it on top. The therapist continued to express wanting food, but Markus continued to ignore her and fill the colander. Finally the therapist whispered, "Shall I still insist?" Markus nodded. The therapist kept asking for food. Then, Markus extended the sand-filled colander and shovel to the therapist, who began eating. Markus began to put the sand that came out of the colander back into the sand pool. Meanwhile he put sand in his mouth. The therapist set a boundary, allowing him to mimic eating but not actually take the sand into his mouth. Markus said to his mother, "Now, be a bird," using his hands to mimic pecking at the sand. MarkusM made chirping sounds as she imitated eating from the sand. Markus used the rake to dig. He picked up the rake and shook

it. He emptied the sand from the colander. He asked his mom to say, "Food is finished." When MarkusM did, Markus said, "There is still more here [in the sand pool]." MarkusM began eating from the sand pool. Markus instructed her, "Now, be the mom (as a role in the play). You're making spicy food." He used the shovel to put sand into the colander and patted it. …He handed his mother the colander with spicy food in it, then returned to where he was sitting before. Markus asked the therapist to say, "I don't like spicy food."

A higher proportion of males participated in sand pool hiding and motion play in both colic groups. Seven out of eight children who experienced induced labor engaged in sand pool play. Within the colic group, 67% of C-section children (4 out of 6) engaged in hiding play compared to 33% (2 out of 6) in the noncolic group. No vaginally delivered colic children participated compared to 71% NC (5 out of 7) engaged in sand pool hiding play. In the motion category, no vaginally born colic children were represented while the noncolic group had only one. In the sand pool motion group, 5 out of 6 (1C, 4NC) were born via C-section.

Tent Play

The *tent play* code (14, 61%; 8M, 6F; 5C, 9NC) involves play within the tent, before entering it, or after entering and exiting the tent. Associating play occurring outside the tent with this code was contingent upon a child's transfer of a tent-related play to the exterior, the progression of play initiated inside the tent continued outside. This code was subdivided into comfortable and uncomfortable tent play.

Comfortable tent play (8, 35%; 2M, 6F; 3C, 5NC) was related to the participants' roles, toys, behaviors, and emotions that provided a sense of comfort inside the tent or immediately before or after entering the tent. While children and mothers were inside they interacted by touching the walls of the tent. They invited their mothers and engaged in interactive activities, cooking, nurturing/growing, placing balls inside and sliding on them, taking care of dolls, playing music, and hide-and-seek. The children engaged in cheerful shouts, crawling, and sliding onto the tent, playing caregiving activities inside, as well as sleep-themed activities.

In Session 6, Barbara (NC) crawled into the tent through a tunnel, exclaiming "Santa Claus" and closing the tent's door. The therapist whispered, "Who should be Santa Claus?" Barbara pointed to her mother. BarbaraM approached the tent, saying, "I am Santa Claus." Barbara gleefully exclaimed, "Yay!" and jumped inside the tent. She asked, "Will you bring gifts?" … Barbara wanted both herself and her mother to be Santa Claus. She assigned the role of the child to the therapist and asked her to enter the tent. Her mother and the therapist gave Barbara some sand that they put into the colander from the sand pool as a gift.

More C-section NC children (50%, 3 out of 6) than C-section colic children (17%, 1 out of 6) engaged in comfortable tent play. Half of vaginally born colic children (2 out of 4) participated compared to 29% (2 out of 7) in the noncolic group.

Uncomfortable tent play (11, 48%; 8M, 3F; 4C, 7NC) designated activities engaging the tent by entering or exiting, tactilely interacting with its surfaces, and/or altering its position while manifesting complex emotional states, sensations, and expressions of discomfort, subdivided into *threat*, *harm*, and *repositioning*.

The *uncomfortable tent play, threat* category (10, 43%; 7M, 3F; 3C, 7NC) was defined as the children's demonstrating feeling menaced through verbal expressions, body language, behaviors and choice of toys. Some embodied roles that conveyed a sense of threat through play with their mother and/or the therapist. These scenarios involved toy weapons, handcuffs, fleeing imaginary wild animals, engaging in simulated combat, or persistently replicating alarm situations. Certain children reacted to feelings of threat by barricading the tent's entrance or concealing themselves inside it.

David (C) interacted with toy guns and knives during sessions, enacting scenarios in which he closed the tent entrance while summoning his mother and engaging in pretend confrontations with the therapist to prevent her from entering. In Session 4, he actively shook the tent while exclaiming, "Come home quickly." Upon DavidM's entering the tent, he firmly shut the entrance and said, "Now we are safer." Subsequently, he crawled out of the tent, took a gun from the shelf, and crawled back into the tent. His mother asked, "Did you get the stuff?" David said, "We're safer now, Mom." DavidM said, "Check to see if there's a danger, Captain, far away." David said, "Sea monster." Later, he asked his mother for both of them to become police officers. When his mother asked where the culprit was, he answered, "Hidden here. Oh look, it opened like this." He pointed to the opened curtain door of the tent and said, "Close it, close it." He positioned a large Pilates ball at the tent's entrance. Later inside the tent, while he was playing with his mother with a doll, DavidM wanted to go outside to take a breath. David said, "Don't open the tent's door." When DavidM went outside, he closed the tent's door and said, "There's a zombie."

Vaginally born noncolic and colic children were about equally represented (57%, 4 out of 7, compared to 50%, 2 out of 4, respectively) in uncomfortable tent play, threat. C-section deliveries were more prevalent in the NC group, comprising 50% (3 out of 6), as opposed to 17% (1 out of 6) in the colic group. Males were dominant in both groups.

The *uncomfortable tent play, harm* code (5, 22%; 4M; 1C, 4NC) represented the child's engaging in play involving inflicting physical pain upon themselves or others inside and outside the tent. Play utilized toy weapons, the biting of wild animals, or enacting painful medical interventions.

In Session 6, Zayne (NC) stuck his head out of the tent and shouted, "Bomb!" Then he sat on the floor inside the tent, stating, "Boom, boom, shooting." When the therapist asked if it was directed at her, Zayne nodded, and the therapist exclaimed, "Ah!" and pretended to fall to the ground. In Session 7, Zayne put sand in the tent, then threw a handful of it at the therapist's face and said, "I threw gun sand."

The *uncomfortable tent play, repositioning* category (5, 22%; 5M; 2C, 3NC) entails the child's active manipulation of the tent's spatial orientation, including rotating, lifting, directional adjustments,

relocating, or overturning. Several lifted the tent, placed it over the sand pool, inverted it, and attempted to ascend onto its roof.

In Sessions 6 and 7, Emanuel (NC) shook the tent from the inside, and as the tent seemed to lean and almost tip over, he corrected it and then exited, stating that he had knocked it over himself. "This is a very dangerous thing," he said. He began to hit the tent from outside, striking it forcefully. He took a fish toy from the shelf, saying, "... should not push it down, it's a very beautiful fish," and reentered the tent with the fish. A slight scream-like sound came from the tent. Suddenly, he started shaking the tent vigorously from the inside. He asked the therapist to say, "I told you not to do this." The therapist did as instructed. Emanuel said, "I can knock this down," and then tipped the tent to the side. As the tent lay on its side, he came out from within. Emanuel looked at the tent and said, "It's corrected, and has also an entrance."

Egg Chair Play

The egg chair code was divided into *being placed inside the egg* and *threat*. The children engaged in a diverse array of play activities within the egg chair code, playing cops and robbers, doctor role-plays, and feeding scenarios. They also interacted with the egg chair itself by closing the canopy and spinning within or by arranging various items inside before spinning the egg chair. Twelve children (52%; 4M, 8F; 5C, 7NC) utilized the egg chair code.

In the *being placed in the egg* code, children would enter the egg chair and, upon closing the canopy, emit playful and occasionally apprehensive regressive sounds (5, 22%; 1M, 4F; 3C, 2 NC). Curiously, amid the expressions of fear, some children also said things like "this place is very nice." Two (NC) expressed a feeling of confinement by placing various items inside the egg chair and then entering, while another 2 (NC) explored different body positions. All 5 placed items inside the egg chair, and 4 entered it.

In Sessions 5 and 6, Elizabeth (NC) filled the egg chair with toys and finally with stuffed animals.

She said, "It's very full," and then went to the egg chair. She sat inside and said, "I became like an egg." Then she stood up, observing how the canopy was raised and lowered with the therapist. She performed movements like jumping with both feet, tapping one foot, and raising both arms. She took the hedgehog toy from the tent and placed it inside the egg chair. She rolled around on the floor. Then she entered the egg chair alongside the hedgehog and exited. She told the therapist that she wanted the egg chair not to rotate. She then brought the ship toys from the tent and placed them in the egg chair, gently rocking the ships with the hedgehog. She brought finger puppets, a basket, and other items, then entered the egg chair and closed the canopy. Giggles emerged from inside. She said, "Hey, I'm going to play in here." She made joyful sounds like "Nananana" and "mamimomimami."

The *egg chair threat* code represented times children's play conveyed a sense of threat from the outside (7, 30%; 3M, 4F; 2C, 5 NC). Some played cops and robbers, while others simulated external threats, such as storms, using tools to puncture the egg chair, shooting the egg chair with a toy gun, hitting the stuffed animals inside the egg chair, closing the canopy with handcuffs, shooting at the baby dolls inside the chair, simulating dragon attacks, or placing weapons inside the egg chair. Some pretended that the babies in the chair were sick and crying. The nature of the threat was explained in subsequent sessions. Alongside all of these emotions, there were also nurturing moments in the form of doctor play, where they engaged in healing, applying cream, putting socks on the baby's feet, and feeding.

In Session 7, suddenly Carol (C) exclaimed, "There's a thief!" She took her doll from the egg chair, saying, "Let's pretend that I was playing with my child when a thief suddenly came from the garden." While Carol played with her doll, her mother became the thief and said, "I've come to take your child." Carol sat in the egg chair and closed the canopy. The therapist said, "You can't take it, thief, it's closed. She is in a

safe place. You can't take her unless she wants to go." CarolM said, "Give me that child," and Carol, extending her head under the slightly open canopy, said loudly, "I won't give my child." CarolM said, "Fine, then I'm leaving." Coming out of her role, CarolM asked "Should I go?" Carol knelt and told her to go steal another child. She entered the egg chair again. When CarolM tried to take the other doll on the floor, Carol said, "This one is the baby's little sister," and placed the doll in the egg chair. As CarolM repeatedly demanded the dolls, the child said, "I won't give them." Following the child's lead, CarolM said, "I've taken your child," and taking one of the dolls, held it face to face. The mother then released the doll, and the therapist became the thief. … Carol entered the egg chair, and the therapist tried to take the dolls. CarolM said, "You can't take them; they're our babies"… . Her mother closed the canopy of the egg chair. Carol drew her feet into the egg chair and sat silently with the dolls for a while. She made a sound like "A …" and later she shouted, "Mom." CarolM said, "I'm here." Carol opened the canopy, got out of the egg chair, closed the canopy, and said, "Let the babies sleep a little."

In the colic and noncolic groups, both egg chair subcodes saw a higher participation by girls than boys. In the being placed in the egg chair, the percentage born vaginally was higher in the colic group (50%; 2 out of 4) than the NC group (29%; 2 out of 7). Only 1 C-section colic child and none from the noncolic group participated. For the threat play in the egg chair, C-section-born children accounted for 17% (1 out of 6) in the colic group and 67% (4 out of 6) of the non-colic group. Among vaginally-born children, the colic group represented 25% (1 out of 4), whereas the noncolic group accounted for 14% (1 out of 7).

Summary

Overall the findings showed a higher inclination towards traumatic play and play evincing negative emotions among the noncolic children (Table 3). Although the numbers are small, owing to the sample size, the trend shows that noncolic children were in most cases twice as likely to engage in traumatic or negative play, if not more. Delivery method is more equivocal, but cesarian births are slightly higher than vaginal births for negative or traumatic play across both colic and non-colic groups. In most cases boys were more represented than girls in traumatic and negative emotion play. All children in the uncomfortable tent play harm theme were also represented in the uncomfortable tent play threat theme. An exploration of birth methods revealed that both colic and noncolic children born via vaginally exhibited a propensity for the tent threat theme over those born C-section. In the repositioning tent category, there were 2 colic and 4 noncolic children. While 5 children also played in both the harm and threat categories, one of the colic children solely engaged in repositioning play. The colic repositioning play group (2C) consisted only of C-section delivered children, whereas all the noncolic repositioning group (3NC) were born vaginally. The threat theme was also observed in the egg chair play. Notably, all children with colic and noncolic backgrounds whose mothers had had abortions were involved in the threat theme within the egg chair play setting. Within the egg chair context, the threat theme was engaged by 5 noncolic and 2 colic children. For being placed in the egg, 3 colic girls participated in nurturing play where as 2 noncolic children (1M, 1F) simulated confinement. Four out of the 5 children within this code were born vaginally (2C, 2NC).

In terms of play that showed a definite positive emotion (Table 4), the raw numbers are more evenly distributed across colic groups, with the trend slightly higher for noncolic children, and no clear trend regarding delivery method. Girls outnumbered boys for positive emotional play.

Children frequently displayed the comfortable tent play theme in conjunction with other themes, such as the uncomfortable tent threat and/or uncomfortable tent harm. However, a mere 3 participated solely in the comfortable tent play theme, without any other tent-related themes, and they also featured in in the egg chair threat theme. These three children's mothers had a history of abortion or miscarriage. The tent comfort code was roughly the same proportionally across colic and noncolic children (3C and 4C respectively). Female

were more represented in tent comfort play than males for both colic groups.

Regarding sand pool play, which showed neither clearly positive nor negative emotional loading, a distinct contrast emerged between colic and noncolic children born through different delivery methods. Colic children who participated in sand pool hiding were exclusively born via C-section (4C), whereas noncolic children had a mix of C-section (2NC) and vaginal births (5NC). For sand pool motion play, 5 out of 6 (1C, 5NC) were born through C-section. The only child who was born vaginally had been promptly transferred to the neonatal intensive care unit, resulting in a separation from her mother for three days. Interestingly, among the subset of neonatal intensive care backgrounds, two mothers of noncolic children were unable to visit their child for a 3 to 4 days, and both children

Role play frustration	Colic		Noncolic	
	Vaginal		Vaginal	
Male	0	0	1	2
Female	0	1	1	2
Subtotal	0	1	2	4
Colic Status Total	1		6	
Role play harming others				
Male	0	2	1	2
Female	0	0	0	0
Subtotal	0	2	1	2
Colic Status Total	2		3	
Tunnel play difficult passage				
Male	1	3	3	2
Female	0	0	0	3
Subtotal	1	3	3	5
Colic Status Total	4		8	
Uncomfortable tent threat play				
Male	1	1	3	2
Female	2	1	4	3
Subtotal	3	2	7	5
Colic Status Total	5		12	
Uncomfortable tent play harm				
Male	0	1	3	1
Female	0	0	0	0
Subtotal	0	1	3	1
Colic Status Total	1		4	
Uncomfortable tent play repositioning				
Male	0	2	3	0
Female	0	0	0	0
Subtotal	0	2	3	0
Colic Status Total	2		3	
Egg chair play threat				
Male	0	1	1	1
Female	1	0	0	3
Subtotal	1	1	1	4
Colic Status Total	2		5	

Table 3. *Traumatic and negative emotion play by colic and birth status*

Role play secure	Colic		Noncolic	
	Vaginal		Vaginal	
Male	1	0	1	1
Female	3	2	1	2
Subtotal	4	2	2	3
Colic Status Total	6		5	
Role play role reversal				
Male	1	1	0	1
Female	0	0	1	1
Subtotal	1	1	1	2
Colic Status Total	1		3	
Tunnel play easy passage				
Male	0	0	0	1
Female	2	1	2	0
Subtotal	2	1	2	1
Colic Status Total	3		3	
Comfortable tent play				
Male	0	1	1	0
Female	2	0	1	3
Subtotal	2	1	2	3
Colic Status Total	3		5	

Table 4. *Positive emotion play by colic and birth status*

played the sand pool motion theme. Furthermore, of the 4 children delivered via Cesarean section, 2 (1C, 1NC) had undergone general anesthesia during birth. Additionally, two noncolic children whose birth initially began as vaginal but ultimately required a C-section also received medication for anesthesia. Males predominated in both types of sand pool play.

Discussion

Several limitations and delimitations need to be acknowledged. The therapist sample comprised Caucasian, educated, young women, mirroring the demographics of Türkiye's professional play therapy community. Setting intentions before play therapy sessions, integral to EPT, aligns with the notion that conscious intention influences action choices (Pacherie & Haggard, 2010). Although the practice facilitated purposeful interactions, it also introduced a potential bias, subtly shaping the course of play therapy sessions. To mitigate it, techniques, such as bracketing, journaling, pre-interview centering, meditation prior to coding, and field notes were employed.

Unforeseen and uncontrollable circumstances—most notably the earthquake—affected recruiting, so the target of 30 participants was not feasible in the interval scheduled for research, which limited generalizability. Recruitment methods favored participants with higher educational backgrounds, socioeconomic status, and internet access. The small sample, especially when subdivided by birth modality, makes generalization difficult; this is further complicated by what may have been traumatic interventions, such as induction by fundal pressure and suction. Given the labor-intensive design for the number of sessions and checks on validity, the sample was larger than most for such an experiment.

Weekly supervision sessions proved highly beneficial, enabling therapists to identify triggers from their own birth stories and raise awareness of bias. All therapists underwent a two-day training in which being present with the mother and child like a doula was discussed, yet therapists accustomed to working one-on-one with children sometimes observed instances where the mother lagged in sessions. Furthermore, therapists occasionally amplified the play roles assigned by the child due to their own triggers or even assumed roles without the child's direction. However, this had minimal impact on outcomes, as children exhibited diverse ways to express their stories. For example, Eric pretended to kill his mother and therapist, perhaps influenced by his perception of his mother as controlling and the therapist as overly involved. By ensuring they remained still and played dead for an extended period, he was able to play out his scenarios in the sandbox and tunnel without interference.

Session recordings were not always complete or easily comprehensible owing to audio quality, sometimes an inability to see the whole room, or external factors such as power outages, which may have affected the analysis.

The study was delimited to the Turkish population, which affects generalizability, especially since birth practices vary by culture. The focus on children aged 2.5 to 4 years enhanced comparability but excluded older children, who might demonstrate different play themes. Another limitation pertains to the identification of children with colic backgrounds because their histories were provided by their mothers. Some vividly recalled their children's colic episodes and provided detailed accounts, while others could not clearly recall the duration or specifics. Moreover mothers' reasons for participating varied widely. Some grappled with guilt and uncertainty because they had preferred vaginal births but ultimately underwent C-section deliveries and wondered about lasting effects on their children. Others approached the study with curiosity, unsure if therapy was necessary but willing to seize the opportunity for potential insight and support. The continuum of maternal characteristics was diverse, with some displaying controlling tendencies while others exhibited mild anxiety.

The findings reveal significant differences in play behaviors by colic status, particularly in the non-colic children's inclination toward behaviors associated with trauma. These differences in play behaviors were influenced by birth method, sex, and maternal history. The central finding emphasizes the multifaceted role of infant crying. Crying extends beyond an immediate response to discomfort; it

serves as a mechanism for processing deep-seated emotional and traumatic imprints from the prenatal and birth periods (Emerson, 1998, 2021a, 2021b). Infants crying for no apparent reason can be linked to underlying prenatal or perinatal trauma (Aldrich et al., 1945; Chamberlain, 1998; Emerson, 1998, 2021a, 2021b).

In this study, the combined presence of the mother and the therapist facilitated the child's entry into a trance-like state during play. While the play themes revolved around specific areas, such as the tent, activities outside these areas were designated as role-play, and all formed the narrative. Could role play serve as a tool for regulation after a challenging play session in one of the areas, such as the egg chair? Although some children may engage in such relationships with therapists, these interactions often do not extend beyond a few sessions. Typically, children who utilize relationship as a means of regulation tend to rely on it, especially if they have a secure attachment style (Schore, 2000; the "secure" code in this study specifically pertained to children's role play behavior and should not be confused with attachment security). In contrast, children with different attachment tend not to use relationships as a regulatory tool. For instance, Zayne at times applied lotion and a bandage to his own leg. Sometimes, a child's playing a percussive toy can be viewed as a form of regulation. While providing comfort and care is essential, overreliance on external soothing, such as breastfeeding or constant cuddling, can hinder a child's self-soothing abilities and internal resources (e.g., Castellino, 2000).

Since colic children exhibiting secure codes were primarily born vaginally, vaginal birth may promote a stronger initial connection between mothers and children. Indeed, research (Fernandez et al., 2013) correlates variations in infant responses to stress and maternal sensitivity toward their cries. Babies born vaginally tend to cry more in response to maternal separation compared to those born via C-section (Fernandez et al., 2013; Swain, 2008). Passage through the birth canal can create physical and emotional stress, often leading to crying, which serves as a natural stress-release mechanism. The mother's immediate presence during this process provides comfort and security. C-section births, being

quicker and lacking prolonged physical pressure, may not trigger the same stress-related crying, and the mother's presence may be delayed due to the surgical procedure, resulting in a different initial experience for the baby, in addition to the effects of different types of anesthesia on babies and mothers.

The prevalence of C-section deliveries among children engaging in harming others role-play raises questions about the potential impact of such deliveries, including the baby's awareness of the mother's pain and frustration during recovery. Certain instances of "role reverse" behaviors in this study suggest parentification, in which a child acts as a parent to their parent, a common defense that may have its origins in the womb and during birth (Gabriel & Gabriel, 1992), as suggested by TylerM and ZayneM, who reported that their babies were easy to calm and did not cry much. Gorman's research (2019), built the on foundational work of early prenatal researchers (e.g., Lake, 1979; Grof, 1975, 1985; Chamberlain, 1995; Cheek, 1975), developed the concept of cellular memories, suggesting that embryos, as early as one month post-conception, manifest intense reactions when confronted with perceived threats, indicating a primal survival instinct at the cellular level. It is plausible that the feelings of terror expressed during tunnel play have roots in these cellular memories, including the fetal perception of the mother as both the source of life and a potential threat, resulting in enduring skepticism regarding maternal love. Ninety percent of his 404 participants reported their inaugural trauma at the moment of birth, frequently manifested as a fear of maternal abandonment, accompanied by anger and worthlessness.

The use of the tunnel, whether employed vertically or fashioned as attire, may symbolize C-section deliveries. In tunnel play, actions, such as the symbolic killing the mother or facing attacks from wild creatures, may be construed as the externalization of deep-seated anger. Children engaging in challenging tunnel passage play, irrespective of delivery mode, had experienced medical interventions such as induced vaginal birth or C-sections. Barbara, who experienced an unassisted vaginal birth, promptly initiated bonding with her mother after birth, a connection discernible

in her tunnel play, similar to Emily and Sarah, who also underwent unassisted vaginal deliveries.

Sand pool hiding notably occurred more frequently in the colic group compared to sand pool motion play. Children immerse themselves quietly in the hiding activity, in which their body movements, emotions, and sensations take precedence. As they shovel sand, create mounds, rhythmically pat the sand, bury themselves, and hear the sound produced as the sand (bulgur) cascades, they are sensuously engaged with their bodies, and sand play therapy founder Kalff (2003) considered the material elements of sand play acted as a metaphor for the body. According to her, hiding games can symbolize the need for safety and protection as well as attachment and separation. Many children engaged their mothers in the act of shoveling, fostering a sense of "we're in this together," reminiscent of the relational dynamics in the womb or the collaborative process during childbirth.

The sand pool motion code represented a different quality; here children engaged in nurturing or opposing themes, providing insights into their perceptions of the prenatal environment. Michael, for instance, created a chaotic atmosphere, scattering sand all around, evoking a myriad of emotions, such as surprise and discomfort. MichaelM reported that her pregnancy was particularly stressful, especially because she had to conceal it for an extended period. Two other children engaged in the motion play were born to mothers who had miscarried less than a year prior to their conception. Their play may be connected to "haunted womb syndrome," associated with expecting mothers who have experienced pregnancy loss and carry unresolved grief and attachment issues into subsequent pregnancies (Markin, 2018; Menzam-Sills, 2020). Such unresolved emotions and attachments can affect the child.

Common dream symbols for the womb include a cave and a house (Irving, 1989; Noble, 1993; Rank, 1929). Fourteen children employed the tent, with colic children conveying feelings of well-being and a two-way relationship with their mothers. The repositioning theme correlated with difficult birth stories, such as ZayneM's 18-hour vaginal birth, characterized by pelvic narrowness,

artificial contractions, and vacuum assistance. Only Yusuf (C) consistently expressed how challenging the sessions were for him, repeatedly asking his mother to take him home, and it is worth reporting an episode that attempted to access his distress. The therapist decided to address Yusuf's trapped emotions related to his birth trauma by sharing his birth story.

As Yusuf sat on his mother's lap, swinging his legs gently, the therapist said to YusufM, "If he wants to run, there are other rooms where he can play freely." The therapist then said, "You told me that when Yusuf was in your belly, the time leading up to his birth was a bit difficult." Yusuf swung his legs in the air. The therapist continued, "Perhaps he felt trapped there, struggled with intense emotions, and experienced challenging sensations within his body." Yusuf agreed. The therapist added, "Maybe it was tough for you, too, and perhaps you had your own questions during that time." Yusuf said, "Mom, let's go." The therapist acknowledged Yusuf's urgency, saying, "The doctors who assisted you wanted Yusuf to be born quickly. Maybe Yusuf felt very uncomfortable back then, and perhaps he wanted to escape those overwhelming emotions, but he couldn't." Yusuf, speaking in baby talk, repeated, "Let's go," as the therapist continued, "Now, he can run freely here. He can explore other rooms and corridors if he wants." Yusuf snuggled up to his mother and enjoyed a snack. The therapist said, "Our session isn't over yet, but if Yusuf wishes, he can explore other rooms, with you or on his own. This space is safe." Yusuf reiterated, "Let's go." The therapist said, "It's not easy to remember those moments. Maybe the process of coming into the world was challenging for you and your mother." Yusuf responded by energetically swinging his legs, as if trying to free himself. He took a snack break while leaning against his mother. The therapist playfully remarked, "Hop, hop, hop! Your legs move so quickly. You can move them in any way you like—running, escaping, or rearranging the pillows and toys in this room." Yusuf insisted, "Mom, let's go,"

and kicked the tunnel. He entered it, and while inside, the therapist encouraged YusufM to touch him from outside. His mother extended her arm through the tunnel's opening and made contact with him. Yusuf then maneuvered out of the tunnel, embracing his mother with a sense of accomplishment. The therapist said, "Yes, you found a shorter path." Yusuf turned to the shelves, pouring out the treasure chest and its contents. YusufM believed that the accelerated birth process and the delivery maneuvers traumatized both her and Yusuf.

Last, it is important to note that Sophia (C) and Adam (NC) engaged in play related to their current life situations rather than in the womb or birth. Over the ten sessions, Sophia concentrated on activities aimed at reestablishing her sense of self and strengthening her attachments. Adam's play centered on boundaries, drawing from his birth experiences but also incorporating more recent life encounters.

In summary, the main finding is that children with a history of colic tended to reenact their prenatal and birth experiences with less trauma than children without a colic history. However, a deeper exploration of both colic and noncolic children's play reveals that stress cannot be solely attributed to the mere act of babies' releasing trauma through crying; it is a more complex process. Trauma release involves a multifaceted, interactive process that necessitates the presence of a nurturing caregiver and an infant capable of expressing distress (not all infants can do this because they may be in a state of shock during traumatic experiences; Emerson, 1998; Castellino, 1995).

The prenatal and birth imprinting continuum encompasses various experiences that profoundly influence development and stress response, ranging from supportive and facilitating events to traumatic and shocking ones. The initial phase is stress, during which maintaining coping mechanisms can be challenging, but survival is not immediately threatened (Levine, 2010). Trauma follows, where coping mechanisms are still accessible, and survival strategies like fight or flight remain viable. At the far end of the continuum is shock, where freezing or collapsing become dominant survival responses,

indicating a direct threat to survival. In shock, reactions become impossible, and the experience exerts a profound impact on the individual's physiology and psyche (Verdult, 2009, 2021). While stress, trauma, and shock are interconnected phases along this continuum, each child's experience is unique and influenced by various factors, including maternal history and circumstances surrounding birth. These narratives emphasize the importance of nurturing and supportive environments during pregnancy and early childhood to foster resilience and mitigate the potential negative effects of early imprints. Understanding this continuum is essential for the well-being of current and future generations.

In hindsight, several aspects of the study could have been refined to produce more robust results: expanding the sample size to address confounds related to labor interventions and delivery methods; changing from 10 40-minute sessions to 5 sessions lasting 70 minutes; extending the training for therapists to encourage a less interventionist stance; and incorporating standardized assessments, such as the Working Model of the Child Interview (WMCI) and the Crowell Problem-Solving Procedure (Schmidt, 2007) to provide deeper insights into parental perspectives and parent-child interactions. Future directions should include controlled studies of mothers who have undergone non-invasive vaginal births, comparing controls to mothers receiving support and guidance to nurture a more present and empathetic response when attending to their infants' cries. Exploring cross-cultural disparities in prenatal and perinatal experiences and conducting longitudinal studies to monitor the long-term effects of interventions and imprints could provide insights into the intricate dynamics of prenatal and perinatal experiences.

Conclusion

Infant crying is a mechanism for processing deep-seated emotional and traumatic imprints from the prenatal and birth periods (e.g., Aldritch et al, 1945; Emerson, 1998, 2021a, 2021B). Thus it sheds new light on colic, which parents find highly distressing: colic crying may be a healthy response, a way for the child to express, release, and resolve accumulated

prenatal and birth trauma, not behavior that reflects badly on the parents' ability to soothe the child or something for medical authorities to "cure." The colic phenomenon should be considered as a continuum, with one end representing overt expression and the other end, often overlooked, being a shutdown response. This study prompts reflection on societal tendencies to label attention-seeking behavior in children as misbehavior while overlooking the quiet suffering of well-behaved children. Furthermore, it is important to consider crying from the relational standpoint, recognizing the roles played by both parties and highlighting the way the parents' ability to be present and allow a child's expressiveness without getting caught up in their own emotions can benefit all concerned. The techniques of play therapy are purposeful and can be integrated into family life as an ongoing process.

Last, this research introduces a transpersonal dimension by drawing parallels with Grof's birth-perinatal matrices (1975,1979, 1985; Grof & Bennett, 1990; Grof & Taylor, 2009) and other work validating prenatal consciousness and its importance on later development (e.g., Gorman, 2019; Wade, 1996, 1998a, 1998, 2022a, 2022b). The idea that the fetus possesses a level of consciousness that allows it to perceive and respond to stimuli, emotions, and the mother's psyche—as well as actively participate in its own development—challenges traditional notions. In essence, a child's everyday behaviors, relationships, school performance, and learning abilities can be linked to prenatal and birth imprints. This paradigm shift has the potential to transform not only how play therapy is approached but also how a child's holistic development and well-being can be fostered far beyond the therapy room.

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