ISSN 1097-8003

Journal of Prenatal & Perinatal Psychology & Health

Published by the Association for Prenatal and Perinatal Psychology and Health (APPPAH)

Volume 40 Number 1
Spring 2026

Journal of Prenatal and Perinatal Psychology and Health

Official Journal of the Association for Prenatal and Perinatal Psychology and Health (APPPAH)

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Published by
APPPAH
P.O. Box 113
Marietta, SC 29661
www.birthpsychology.com

Journal of Prenatal and Perinatal Psychology and Health

Volume 40 Number 1 Spring 2026

CONTENTS

JOURNAL OF PRENATAL AND PERINATAL PSYCHOLOGY AND HEALTH publishes findings from the cutting edge of the rapidly growing science of prenatal and perinatal psychology and health. The opinions expressed in the articles are those of the authors and do not imply endorsements by the Association for Prenatal and Perinatal Psychology and Health (APPPAH) or the editorial team at *JOPPPAH*.

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 The *Journal of Prenatal and Perinatal Psychology and Health* (ISSN 1097-8003) is published triannually in the spring, fall, and winter by APPPAH, PO BOX 113, Marietta, SC 29661.

PUBLICATION POLICIES: *JOPPPAH* fully complies with APA 7 publication guidelines. Please see the full disclosure of our publication policies at jopppah.org.

The Association for Prenatal and Perinatal Psychology and Health
Journal of Prenatal & Perinatal Psychology & Health
ISSN: 1097-8003
Vol. 40 No. 1 Spring 2026

Editorial

Christiana Rebelle, PhD, Editor-in-Chief

Over the past year, the *Journal of Prenatal and Perinatal Psychology and Health* has been working toward the broader goal of improving access to research and strengthening the infrastructure that supports knowledge in maternal and perinatal health. This work is closely aligned with the broader open science movement, which seeks to make research more accessible, more transparent, and more useful to practitioners, policymakers, and communities.

This spring provided several opportunities to highlight the importance of accessible research. In March, I represented *JOPPPAH* in Washington, DC, at the Maternal Mental Health Forum, where I spoke about the role of research access in shaping maternal mental health programs, funding decisions, and systems of care. One of the key themes of that conversation was that research cannot influence policy or practice if people cannot access it. Increasingly, research is also being synthesized by digital tools and AI systems that inform clinical guidance, policy recommendations, and funding priorities. Access to this research is not optional; it is fundamental.

I also presented during APPPAH's Birth Psychology Month, highlighting several open access studies published in *JOPPPAH* that support what many in the birth psychology community have long understood: when we support mothers, we shape who babies become. Research in prenatal and perinatal psychology continues to demonstrate that maternal well-being, stress, support, environment, and early relationships influence birth outcomes as well as emotional development, attachment, and long-term health. Making this research accessible is essential if it is to inform practice, education, and public understanding.

Beginning after this Spring issue, the journal will move to a continuous publication model, publishing articles online as they are finalized rather than waiting for the entire issue to be completed. This allows research to become available more quickly and ensures that new findings can be shared with researchers, clinicians, and communities without unnecessary delay. Articles published between issues will be assigned unique article numbers and DOIs and will later be compiled into the following issue. This change reflects the evolving nature of scholarly publishing in a digital environment and supports our goal of making research more accessible, discoverable, and available to inform practice, policy, and future research.

The articles in this Spring issue reflect the journal's interdisciplinary and international scope and continue to explore the psychological, social, and biological dimensions of pregnancy, birth, and early development. Together, they contribute to our growing understanding of how early experiences shape lifelong health and well-being.

Raza and Splevins present a mixed-methods evaluation of a brief compassion-focused therapy group delivered in an inpatient Mother and Baby Unit. Their findings show significant reductions

in self-criticism and fears of compassion, along with increases in calmness and connection. Qualitative data highlight mothers' experiences of safety, insight, and practical skill-building, while also noting barriers to engagement. This study suggests that even brief, structured interventions can support mothers experiencing acute mental health challenges.

Fullick et al. offer a systematic review of posttraumatic growth in parents following preterm birth. Across 13 studies, they identify a wide range of factors associated with growth, including social support, coping strategies, resilience, and psychological distress. Their findings underscore the complexity of adaptation following preterm birth and point to the need for integrated approaches that address both distress and growth in parents navigating neonatal care.

Goertz-Schroth et al. examine Prenatal Bonding (BA) as an approach to supporting pregnancy through intentional connection between the gestational parent and unborn child. In a retrospective analysis of 295 births, they report reductions in medical interventions, cesarean sections, preterm birth, postpartum depression, and infant colic, along with increased breastfeeding rates. The authors propose that early relational connection may shape both birth experiences and postpartum adjustment.

Nováky presents a reflective clinical essay grounded in decades of experience as a midwife, drawing on existential and transpersonal psychology. She describes childbirth as a psychological and spiritual process that can influence identity, relationships, and meaning-making across the lifespan. Her work emphasizes the importance of presence, attunement, and awareness of personal and intergenerational narratives in supporting mothers during birth.

Ball explores how prenatal and perinatal experiences shape the development of the core self. Drawing on phenomenological research and interdisciplinary evidence, he describes how early stress, trauma, and disruptions in attachment can limit emotional experience and connection. He also examines how therapeutic processes may support reconnection with the core self, with implications for clinical practice and long-term well-being.

Bower introduces the concept of postpartum digestive insufficiency, arguing that digestion after birth operates under distinct physiological constraints. She proposes that nutrient absorption, rather than intake alone, is central to postpartum recovery. Drawing on physiology, neuroscience, and cross-cultural practices, this article offers a clinically relevant reframing of postpartum nutrition.

Gouhin et al. present a policy-focused examination of eating disorders in the perinatal period. Drawing on epidemiological data, the authors highlight the prevalence of body image concerns, disordered eating behaviors, and associated risks during pregnancy and postpartum. The article calls for improved screening, awareness, and integration of eating disorder care into maternal mental health services.

I extend sincere appreciation to the authors, reviewers, editorial board members, and volunteers who contributed to this issue. Your work continues to support the growth of this field and the dissemination of knowledge that informs care for mothers, infants, and families.

The Association for Prenatal and Perinatal Psychology and Health
Journal of Prenatal & Perinatal Psychology & Health
ISSN: 1097-8003
Vol. 40 No. 1 Spring 2026
https://doi.org/10.62858/apph260501

An Evaluation of the Effectiveness and Experiences of Compassion-Focused Therapy in an Inpatient Mother and Baby Unit

Sehar Raza, Katie Splevins, DClinPsy

Growing evidence supports the value of compassion-focused therapy (CFT) groups in specialist perinatal mental health community services. However, little is known about their effectiveness in acute inpatient Mother and Baby Units (MBUs), specialist wards for women with severe mental health difficulties and their babies, where stays are short and presentations complex. To our knowledge, this service evaluation is the first to examine a brief, transdiagnostic CFT group for mothers admitted to an MBU. A mixed-methods design assessed a five-session CFT group (two hours per session, workbook-supported) delivered in an 8-bed MBU. Quantitative data included the Forms of Self-Criticizing/Attacking & Self-Reassuring Scale (FSCRS) and Fears of Compassion Scale (FCS), collected pre- and post-group, alongside sessional ratings of calm and distress and group connection. Qualitative data comprised open-text feedback (n = 56) and semi-structured interviews (n = 6), analyzed using content and reflexive thematic analysis. Large, statistically significant pre-post improvements were observed across FCRS subscales (range: -0.66 to -0.81) and all FCS domains (range: -0.55 to -0.68). Sessional data showed significant changes in calmness and connectedness. On average, mothers attended three of the five sessions. The following qualitative themes were identified: feelings and understandings upon arrival at the MBU, experiencing containment, gaining insight and practical tools, obstacles to engaging with the group, and CFT beyond the MBU. Findings suggest that a brief CFT group is feasible and clinically promising for mothers in an acute MBU, targeting shame reduction, increased safeness, and fears of compassion. Implementation should prioritize facilitator skill, sensory and soothing environments, and inclusive group processes.

Keywords: compassion-focused therapy (CFT), mother-baby unit, perinatal mental health

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Mother and Baby Units

Currently, there are 22 inpatient mental health Mother and Baby Units (MBUs) in the United Kingdom (Maternal Mental Health Alliance, 2023), which provide specialist care for women who require hospital admission for significant mental health difficulties following the birth of their baby. Women can be admitted from the third trimester to receive treatment while staying with their babies, and provision is available for women with babies up to one year old. MBUs are composed of multidisciplinary teams (MDTs) that include clinical psychologists, nurses, nursery nurses, peer support workers, and psychiatrists. Notably, a systematic review of outcomes for mothers staying at MBUs internationally found that they experience reduced clinical symptoms and significant improvements in interactions with their babies (Gillham & Wittkowski, 2015).

NICE Guidelines

The National Institute for Health and Care Excellence guidelines (NICE, 2014) recommend that MBUs deliver personalized psychological interventions. These range from bonding with the baby to addressing traumatic birthing experiences and providing family support. An audit across 16 MBUs in the UK recorded that the most common psychological interventions offered to mothers during their stay included individual psychology and psychotherapy sessions, group interventions, video-feedback, and cognitive behavioral therapy (CBT) (Wittkowski & Santos, 2017).

Whilst the audit highlighted the benefits of psychological interventions on mothers' well-being and mother-baby relationships, limited indication was provided on the effectiveness of specific interventions using standardized outcome measures. There was considerable variability in the availability of these interventions depending on the expertise within the team, limiting the generalizability and standardization of interventions delivered across MBUs. Given that the average stay at an MBU in the UK is around 6–7 weeks (Jovanović et al., 2025; Wittkowski & Santos, 2017), it is essential to understand which interventions are most impactful and cost-effective in this short period, particularly as CBT remains the most commonly offered approach (Stephenson et al., 2018).

Compassion Focused Therapy

Compassion-focused therapy (CFT) was first developed by Paul Gilbert (2010) to support individuals with high levels of shame and self-criticism, which are understood as transdiagnostic processes underlying a range of psychological difficulties, including depression, anxiety, posttraumatic stress disorder (PTSD), and psychosis (Craig et al., 2020). Gilbert (2014) defined compassion as "a sensitivity to the suffering in self and others, with a commitment to alleviate and prevent it" (p. 19). Within CFT, compassion is conceptualized as operating through three flows: compassion towards oneself, towards others, and receiving compassion from others.

The soothing system is associated with feelings of safety, contentment, and social connectedness, facilitating rest, recovery, and affiliative relationships. In contrast, the threat

system detects and responds to danger and is linked to emotions such as anxiety, anger, and disgust. The drive system is oriented towards goal pursuit and resource acquisition and is associated with feelings of excitement and satisfaction. In individuals experiencing psychological difficulties, the threat and drive systems are often conceptualized as overactivated relative to the soothing system.

The relevance of CFT in the perinatal period is crucial. Cree (2010) claims that mothers may experience emotional dysregulation as their threat system becomes overactive, limiting the accessibility of the soothing system. This is consistent with findings that mothers feel shame when they believe they have not met their own, their partner's, and society's expectations of a "good mother" (Liss et al., 2013). Subsequently, they may engage in self-criticism and form unhelpful views of themselves, which can fuel threat-system activation (Lawrence et al., 2024). Shame and self-criticism have been found to affect mothers' relationships with themselves, their babies, and partners (Jackson et al., 2024). Cree (2015) adapted CFT for mothers and developed a 12-session perinatal CFT group to support mothers in bonding with their baby and reactivating their soothing system.

Effectiveness of CFT

The existing literature on the effectiveness of CFT in clinical populations is limited. A systematic review of five CFT groups by Millard and Wittkowski (2023) showed small improvements in self-compassion, depression, and anxiety for mothers. Notably, the impact on anxiety and depression symptoms was greater for participants assigned to CFT than for those assigned to CBT. Inconsistency was observed in the positive findings related to changes in self-criticism. As studies were largely conducted among non-clinical populations and online, it is difficult to generalize these findings.

Recently, Lawrence et al. (2024) evaluated the effectiveness of CFT in community perinatal services. 114 women from Northwest England attended 10 online CFT sessions. Consistent with Millard and Wittkowski (2023), participants showed significant reductions in psychological distress and self-criticism and improvements in self-compassion. A small-to-medium effect size was also demonstrated in the mother-infant bonding relationship at follow-up. Mothers felt less anxious and more attuned to their babies 'needs, suggesting that self-compassion may significantly impact how mothers relate to their babies.

Thirkettle et al. (2024) conducted a service evaluation of online CFT groups in perinatal community mental health teams. 30 women participated in eight weekly sessions with pre- and post-scores available for 26 women on the CORE-34 (Clinical Outcomes in Routine Evaluation), 24 on the FSCRS (Forms of Self-Criticizing/Attacking & Self-Reassuring Scale), and 6 on the FCS (Fears of Compassion Scale). Consistent with previous research (Lawrence et al., 2024), participants showed significant reductions in pre- and post-scores for psychological symptoms and self-criticism. Improvements were also observed in overall well-being and functioning.

Of the women who completed the questionnaires, 18 also completed surveys, which were then analyzed using content analysis (Thirkettle et al., 2024). Participants described the group as

supportive and informative, which facilitated their understanding and development of self-compassion. Some reported challenges with attending lengthy sessions and needing to attend to their baby. No indication was given on the impact of the group on the mother-baby and parenting couple relationships.

Thirkettle et al. (2024) and Lawrence et al. (2024) made significant contributions to the literature on CFT among the clinical perinatal population and in understanding participants' experiences. Similar qualitative themes have been reported for CFT in non-perinatal acute inpatient settings (Heriot-Maitland et al., 2014; Stroud & Griffiths, 2021). However, little is known about how CFT may translate to acute inpatient perinatal settings such as MBUs, where admissions are short and clinical presentations complex.

Service Context and Project Aims

The Yorkshire and Humber MBU consists of 8 beds and an MDT that offers a range of interventions. CFT groups were first introduced in January 2024. The groups consist of five rolling sessions that last up to two hours with a break in the middle. Each session is designed to be delivered on a stand-alone basis to meet the nature of MBU settings, given new admissions and short stays (Heriot-Maitland et al., 2014). An overview of the sessions is provided in Table 1. They incorporate elements from research on the delivery of brief CFT in inpatient services (Heriot-Maitland et al., 2014; Kirby et al., 2023; Stroud & Griffiths, 2021), group settings (Griner et al., 2022), and P-CFT concepts (Cree, 2015).

Table 1

Summary of CFT Group Session Content and Exercises

Session Number	Session Content	Exercises
1: Three emotional regulation systems	• Psychoeducation on three emotional regulation systems (threat, drive and soothing), and how the perinatal period can influence these systems • Understanding baby's emotional regulation systems	• Soothing Rhythm Breathing, three circle videos and discussions
2: Mind-full or mindful?	• Psychoeducation on the tricky brain, and loops in the perinatal period • Mindfulness and bringing a compassionate lens to mindful activities • Understanding how mindfulness can increase mother-baby bond and help mothers to soothe their babies	• Mindful Awareness • Spotlight of attention • Five stepping stones to soothing system (posture/facial expressions)
3: Getting to know our inner critic and compassionate coach	• Exploration of the inner self-critic. • Understanding the function of the self-critic and the unintended consequences on self and relationship with baby • How to respond to our experiences with a compassionate coach	• Understanding our self-critic • Developing a compassionate coach

Session Number	Session Content	Exercises
4: Compassion	• Defining compassion. • Understanding compassion and its three flows • Exploring fears, blocks, and resistances to compassion in the context of early experiences • Developing skills and attributes to bring a compassionate motivation online, and compassionate engagement and responses in relation to self, others, and baby	• Exercise to explore blocks, fears, and resistances and the three flows of compassion • Compassionate color exercise • Compassionate engagement exercise
5: Imagery	• Exploring the power of imagery to connect to internal experiences that cultivate a compassionate mind and connection to baby • Building skills in self-compassion	• Welcoming place • Developing a compassionate self

Routine outcome measures were available from mothers who had attended the CFT groups between March 2024 and March 2025. The service evaluation project (SEP) was commissioned to evaluate the effectiveness of the group and participants' experience, to provide evidence of therapeutic outcomes, to consider future group developments, and to add to the CFT evidence base in perinatal inpatient settings.

The SEP aimed to clarify whether CFT groups were effective in reducing self-criticism/shame and improving the flows of compassion, to examine mothers' experiences of attending CFT groups in an MBU setting and the changes they experienced after attending, and to offer key recommendations for future CFT groups.

Methods

A mixed-methods design was employed to address the aims of the current SEP. Quantitative data consisted of anonymized routine outcome measures collected by the service from participants before and after attending the CFT group. Simultaneously, qualitative data were collected via semi-structured interviews. Ethical approval was granted by the University of Leeds Research Ethics Committee for the School of Medicine.

Participants for the interviews were sought through purposive sampling. They were required to have attended all five CFT sessions, experiencing moderate mental health difficulties to reduce risks to self and others, and discharged or due to be discharged from the MBU.

A total of six participants were interviewed in line with recommendations for small qualitative studies. Participants were required to have attended all five sessions in total. All six participants identified as White. Mothers' ages ranged from 28 to 37, and babies' ages ranged from 0 to 11 months. Three mothers were diagnosed with depression, one with schizoaffective disorder, one with psychosis, and one with obsessive-compulsive disorder.

Data Collection

Quantitative Data

The forms of Self-Criticizing/Attacking and Self-Reassurance Scale (FSCRS; Gilbert et al., 2004) and Fears of Compassion Scale (FSC; Gilbert et al., 2011) were collected before and after the group intervention. Pre- and post-session measures were obtained at the start and end of each session. Questionnaires were readily scored and anonymized on an Excel database before the evaluator accessed it. These measures are summarized in Table 2.

Table 2

Quantitative Outcome Measures

Measure	Description
FSCRS	The forms of self-criticizing/attacking and self-reassurance scale (FSCRS; Gilbert et al., 2004) is a 22-item self-report measure. It aims to identify forms of self-criticism and self-reassuring thoughts people engage in when they are met with setbacks. Each item is rated on a 5-point Likert scale ranging from 0 (not at all like me) to 4 (extremely like me). The overall score is then recorded for each of the three subscales: inadequate self (0–36), hated self (0–20) and reassured self (0–32). The FSCRS has been found to be a good reliable measure for different psychological difficulties and has an excellent internal reliability (Baião et al., 2015; Gilbert et al., 2004).
FCS	Fears of Compassion Scale (FCS; Gilbert et al., 2011) is a 38-item self-report measure consisting of three scales aimed to identify fears of compassion for others, from others and for self. Each item is rated on a 5-point Likert scale ranging from 0 (don't agree at all) to 4 (completely agree). The overall scores fall within the range of 0–152. Higher scores suggest higher fears of compassion. The FCS has been found to be a good reliable measure for a range of clinical presentations and shows good internal reliability (Gilbert et al., 2011; Kirby et al., 2019).
Pre- and Post-Session Questionnaire	Pre- and post-sessional measures were adapted from Heriot-Maitland et al.'s (2014) study on CFT in acute inpatient settings. *Distress and Calmness levels:* Participants were requested to rate their level of calm or distress (threat system) pre and post session on a Likert scale ranging from 1 (extremely distressed) to 6 (extremely calm).
	Connectedness levels: Participants were required to rate their levels of connection (soothing system) to the group on a 6-point Likert scale ranging from 1 (very disconnected) to 6 (very connected). These were completed pre and post session.
	Understanding and Helpfulness: Participants were asked about how well they understood the group content and how helpful they found the session on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).
	Open Text Box Responses: Participants were then asked what they found helpful about the session, recommendations to improving the group and whether they had used any CFT ideas or exercises following previously attended sessions.

Note. FSCR = Forms of Self-Criticizing/Attacking and Self-Reassuring Scale; FCS = Fears of Compassion Scale

Qualitative Procedure

An interview topic guide was developed to gather qualitative feedback on the understanding and impact of the CFT group. Potential participants indicated their interest in the SEP by consenting to being contacted by the researcher upon discharge. Participants were then contacted by the group facilitator to regain consent before being contacted by the SEP evaluator. Interviews were conducted by the evaluator online via Microsoft Teams or face-to-face at the MBU. All interviews were recorded using Microsoft Teams to offer an initial transcript. Interviews lasted between 25 and 40 minutes.

Data Analysis

Quantitative Analysis

Descriptive statistics were produced using IBM SPSS Statistics (SPSS) to provide an overview of the participants' demographics attending the group. As the sample size was small and the data were ordinal, a nonparametric Wilcoxon signed-rank test was conducted to calculate statistically significant differences pre- and post-group for FSCRS and FCS (Field, 2024). Effect sizes were calculated using the r formula: $r = Z / \sqrt{N}$.

Similarly, a nonparametric Wilcoxon signed rank test was conducted to calculate statistically significant differences between pre- and post-distress and connection levels. Means were then generated in SPSS to examine the understanding and helpfulness of the session.

Qualitative Analysis

Open-text-box responses to post-session questions were analyzed using content analysis (CA) informed by Vears and Gillam (2022). Responses were read and reread for familiarization. Big picture meaning units were identified regarding the research question, and subsequently, subcategories and fine-grained codes were developed and refined. Finally, the synthesis and interpretation of the data were written up.

Interviews were transcribed and analyzed following Braun and Clarke's (2022) steps for TA: familiarization with the dataset, coding of data, generation of initial themes, development and review of initial themes, refining, defining, and naming themes, and writing the final report. Accordingly, during the revision of naming themes, credibility checks were conducted on two coded transcripts, the final themes, and the subthemes with a doctor from the inpatient MBU.

Results

Quantitative Results

A total of 49 mothers attended the CFT group between March 2024 and March 2025 (Table 3). Eleven groups were run during this period. Seven mothers completed the group more than once. On average, mothers attended 3 of the 5 sessions. Table 4 shows questionnaire responses.

Table 3

Demographic Characteristics of Group Participants

Demographics	Number
Ethnicity	
White British	35
Asian British	6
Black British	4
Mixed	3
Unidentified	1
Diagnosis	
Depression	21
Psychosis	19
Anxiety	5
Posttraumatic stress disorder	2
Bipolar Disorder	1
Schizoaffective disorder	1
Dual diagnosis	13
Age	
Mean age of mothers (range)	32 (23-44)
Mean age of babies (range)	3 months (0-11).

Table 4

Questionnaire Responses

Questionnaire	Number of Prior Responses	Number of Post Responses	Number of Pre-and Post- Responses
Group Measures			
FCS	33	19	18
FSCR	35	20	18
Sessional Measures			
Distress	126	119	102
Connection	124	117	99
Understanding	-	114	-
Helpfulness	-	114	-

Note. FSCR = Forms of Self-Criticizing/Attacking and Self-Reassuring Scale; FCS = Fears of Compassion Scale

Group-level Results

For FSCR's inadequate self and hated self, a Wilcoxon Signed-Rank Test indicated that the median post-test ranks were statistically significantly lower than the median pre-test ranks (Table 5). For FSCR reassured self, median post-test ranks were statistically significantly higher than the median pre-test ranks. Large effect sizes were observed across all three subscales. Scores are presented in Table 4. A large effect size was observed across all three subscales.

For FCS total, for others, from others, and self, median post-test ranks were statistically significantly lower than the median pre-test ranks. Large effect sizes were observed across FCS total and all subscales.

Table 5

Wilcoxon Signed Rank Test Results

Measure	Pre-group MDN	Post-group MDN	*n*	T	*Z* Score	*p*	Effect size *r*	% Improved
FSCR								
FSCR-Inadequate Self	25	14.5	18	4	-3.44	<.001*	-0.81	83.3
FSCR-Reassured Self	11.5	20	18	4	-3.31	<.001*	-0.78	83.3
FSCR-Hated Self	10.5	5	18	11	-2.79	0.005*	-0.66	72.2
FCS								
FCS-Total	60.5	35	18	17.5	-2.79	0.005*	-0.66	72.2
FCS-For Others	14	11.5	18	19	-2.34	0.019*	-0.55	61.1
FCS-From Others	21	11	18	16	-2.87	0.004*	-0.68	83.3
FCS-Self	21	11.5	18	21	-2.43	0.015*	-0.57	72.2

Note. FSCR = Forms of Self-Criticizing/Attacking and Self-Reassuring Scale; FCS = Fears of Compassion Scale; MDN = median, *n* = number of participants, T = Wilcoxon test statistic; *$p < 0.05$

Session-level Results

Distress Levels. Overall, a significant improvement was found in post-distress scores compared to pre-session scores. A Wilcoxon Signed-Rank Test indicated that this change was statistically significant, with a moderate effect size. This suggests that participation in sessions was associated with reductions in distress at the session level.

Connection Levels. Significant improvements were also observed in post-connection levels relative to pre-session ratings, with moderate-to-large effect sizes across sessions. Increases in

connectedness were evident across sessions, with particularly marked changes in sessions one and two (three regulation systems and mindfulness).

Understanding and Helpfulness. Participants rated their understanding of the session as high across all sessions, with an average of 4.37 out of 5. Likewise, participants rated the helpfulness of the session as high, irrespective of the session, with an average of 4.46 out of 5.

Qualitative Survey Results

Fifty-six mothers completed three open-text questions following CFT group sessions. Responses were analyzed using content analysis and are presented here as an integrated summary of key themes, which informed and contextualized the subsequent qualitative findings.

Perceived Benefits of the Group: Understanding, Practice, and Validation

Mothers consistently reported that learning about CFT concepts and psychological processes was "helpful and useful." They described developing an improved "understanding" of the "three systems" and the "inner critic," which they were able to apply to themselves by "noticing" which system they were in and "how to see the self-critic."

Participants also valued practicing experiential exercises within sessions, describing these as "practical" tools to stimulate their "soothing system." Commonly named practices included "mindful awareness," "compassionate other imagery," and "self-compassionate exercises."

In addition, mothers highlighted the importance of the group context itself. They appreciated "talking to other mothers" and feeling "validated" by recognizing that "others think and feel the same." The accessibility of content through "videos" and "visual aids" was also valued, as it supported different learning styles.

Barriers and Suggestions for Improvement

Mothers identified several areas where the group experience could be improved, including clearer guidance for exercises, particularly for those who joined sessions later. For example, participants noted the importance of "not to pick a person we know prior to the compassionate other exercise," or described feeling they had joined later and "missed a key part and struggled to understand." Tailoring exercises to individual needs was also seen as helpful, with one participant recommending that mothers be encouraged to "pre-notice ideas of compassionate other so [they] can use the exercise more easily."

Applying CFT Beyond the Sessions

Mothers also reflected on how they used CFT ideas between sessions and beyond the group. Participants reported recalling core CFT concepts such as the "three systems" and the distinction between "old brain" and "new brain." Others described actively using CFT practices, including

"self-compassionate exercises" and "mindful awareness," to help shift themselves into a more soothed state.

In addition, participants expressed a desire for greater access to CFT beyond the inpatient setting. Suggestions included increased availability of CFT groups in the community, opportunities to continue or repeat sessions after discharge, and the development of additional resources such as a "partners group," further written materials, or brief individual follow-up sessions.

Qualitative Interviews Results

Five overarching themes were identified, with 15 subthemes.

Arriving at the group. Several participants described prior feelings of "shame" and "self-blame." For instance, participant 3 expressed, "I was really in a not great place. I was… resentful… This is not an environment I want to be in." Similarly, participants felt "skeptical" about whether the group "would actually help" and feel "safe." Despite this, participants were keen to attend the groups to feel "better."

Participants also reported that their former sense of self-compassion was one of "weakness," and an attribute they "shouldn't need." Most mothers described themselves as being "self-critical," and hoped to "develop" self-compassion.

Experiencing Containment. Participants experienced the group as a safe space. The regularity of the groups offered participants "structure" at an unpredictable time, as inpatients and new mothers. The facilitator's expertise and "buy into CFT" increased participants' motivation to engage with the groups, suggesting a sense of trust between the two. Participants were surprised by the respect they were shown. This is powerfully captured in participant 3's reflection: "I thought people would talk down to me, but I was always made to feel welcomed."

Mothers discussed receiving compassion from facilitators and from one another. This was experienced through the "soothing objects" (e.g., hand creams and scented soaps) available to them throughout the group and compassionate acts such as the offering of "tea and biscuits." Consequently, mothers felt cared for, which is indicated by participant 4's use of the phrase "nurturing."

Participants also viewed the group as being inclusive**.** The setup "invited" mothers to "bring [their] babies" and "come and go" at any time. Being offered this flexibility was "reassuring" for participant 2 as she felt it was "[their] space," which may have been a different experience from being outside the group on the ward. Participants appreciated that the facilitator "altered [the sessions] and made it more bespoke to [them]." For instance, when a participant's first language was not English, "the facilitator tried… to explain things… on multiple levels."

Finally, participants highlighted feeling together in solidarity through "getting to know other mums" with similar experiences. They were able to "trust them" and be "vulnerable," thereby recognizing that struggling with motherhood is universal.

Implementation and Practice. Participants acknowledged that they gained new insight through learning about CFT concepts, such as "the three systems." Simultaneously, participants developed a better understanding of themselves. For example, participant 1 reported, "I found it really helpful to be able to understand why I felt the way I do." Participants also established a positive view of compassion. This was demonstrated in participant 1's following account, "a firefighter being compassionate… nothing to do with... weakness."

Subsequently, mothers frequently quoted developing self-compassion. This was conveyed through participants connecting with their "soothing system" and compassionate "imagery," using CFT ideas such as "it's not your fault," and being kinder to themselves.

Participants also indicated that integrating CFT into their lives required an ongoing commitment and practice. Some engaged further with CFT "resources," including "books" and "apps," whilst others continued to review the "handouts" from the groups.

Obstacles to Engagement. Few participants reported individual preferences regarding group structure and their expectations. Some participants found it "tricky" to navigate the shift in group dynamics when new members, including professionals, joined. They felt uncertain about whether it was safe to share their experiences. Participant 4 implies this in the following: "So you think this is the group for today… you might… made yourself vulnerable… and then somebody else comes in later and then it's like the dynamic might change."

For new attendees, the content felt like a "jump" if they were unfamiliar with CFT. However, when content was "repeated," returning mothers found this counterproductive, as it impacted the quantity of content covered. For example, participant 4 explained that "we would have to miss or skip past bits." This was also attributed to an imbalance between sharing experiences and getting through the content. Nevertheless, participants acknowledged that having new people allowed for "new perspectives," and professionals could "understand" their experiences.

Logistics. Participants reported benefitting from a large-sized room, as participant 6 shared she felt the space "was just about OK" for four mothers. Although mothers acknowledged the importance of being with their baby in the group, some found it "challenging" to be with their baby and attend to the group simultaneously.

CFT beyond the MBU. Mothers reportedly experienced blocks to practicing compassion upon discharge. They struggled to remember self-compassion and experienced recurring "guilt." For instance, participant 4 said she "forgets" and got "out of the habit" of practicing compassion. Some attributed this to the completion of the intervention.

Participants also felt that CFT was relevant to everyone. This was conveyed through participant 1 "mentioning [CFT] to [her] friends" and participant 4 bringing "this thinking [CFT] to [her] workplace." Notably, participants believed that educating partners about CFT was crucial to help them develop self-compassion and improve their parenting relationships. For example, participant 1 voiced that, "it will be… good and…helpful for this kind of thing to be available to dads."

Mothers felt disempowered by the limited accessibility of CFT groups in the community. Participant 1 captures this in the following, “it's just annoying that you have to be admitted to Mother baby unit to A have heard of it and B have a go at experiencing it in a group.” To resolve this, mothers requested more “funding” for CFT groups.

Furthermore, participants reported a ripple effect of attending the group on other areas of their lives. Mothers felt able to manage conflict better with their partners and family members, whilst also showing them “compassion.” Accordingly, participant 2 noted improvement in her “relationship with [her] partner.” They also felt more confident in their parenting abilities and attuned to their baby. For instance, participant 5 shared, “I’m meeting all her needs and that she's absolutely fine.”

Discussion

The current Service evaluation aimed to assess the effectiveness of CFT groups in an inpatient mental health MBU setting, mothers’ experiences of these, and to offer suggestions for future group development. This evaluation is the first of its kind to explore rolling CFT group interventions delivered within an inpatient perinatal setting where participants attended on average three out of five sessions. The findings offer insights into the potential impact of CFT as a brief intervention delivered across a range of diagnoses within the constraints of inpatient care. Importantly, findings suggest that meaningful psychological change may occur even with partial attendance, which is particularly relevant in MBUs where admissions are short and attendance is necessarily variable.

Effectiveness of CFT

The results indicated that the CFT group showed clinical promise in reducing self-criticism and improving participants’ ability to self-reassure. This finding is consistent with those of Lawrence et al. (2024) and Thirkettle et al. (2024), who evaluated online CFT groups among clinical perinatal populations in community settings.

Notably, reductions in inadequate self-criticism were the largest, which suggests even limited exposure to a CFT intervention may support reductions in shame-based evaluative processes. This may reflect both the focus of CFT on de-shaming processes and the potential normalizing effects of a group-based intervention.

From a social mentality perspective, this may also reflect group-based normalization processes that support mothers to connect to a sense of common humanity and an evolved understanding that their experiences are not their fault. If self-worth can be affected by perceived rank in comparison to others (Halamová et al., 2018), then a group experience might have supported participants to recognize that all mothers experience hardships, reducing feelings of self-inadequacy and social rank threat.

Mothers also showed reductions in fears of compassion. However, in contrast to findings by Thirkettle et al. (2024), who found that fears of compassion towards self were most improved, the current study showed the largest improvement in fears of compassion from others. This difference

may reflect the particular relational context of inpatient care where threat is heightened and autonomy reduced. Inpatient populations are known to experience increased threat related to hospitalization and loss of control (Waite et al., 2025), which may increase fears of dependency, vulnerability, or perceived weakness. For many mothers, a cultural narrative that they should be able to cope alone might further increase their sense of failure should they need support. A further possibility that warrants future investigation is that this population tends to have attachment styles biased towards a more avoidant style and, as such, struggles to ask for or accept help from others. One possible explanation is that the group provided a corrective relational experience, supporting mothers to understand their blocks to compassion and feel safer in receiving care and compassion from others. A further possibility that warrants careful future investigation is whether difficulties in seeking or accepting support may be more common among mothers admitted to MBUs, potentially reflecting avoidant or self-reliant relational strategies developed in earlier contexts. Importantly, this should not be understood as a causal explanation or individual deficit, but rather as a relational pattern that may increase vulnerability at times of heightened stress. From this perspective, the CFT group may have provided a corrective relational experience, enabling mothers to recognize and work with blocks to receiving compassion and to feel safer in accepting care and support from others

Session Level Change

Significant improvements in session-level distress and increases in connectedness levels were also observed, consistent with findings from other CFT groups delivered in inpatient settings (Heriot-Maitland et al., 2014). Taken together, session-level findings suggest the group was experienced as regulating and connective rather than overwhelming, even within a context of acute mental health difficulties and the demands of inpatient motherhood. This is particularly important in MBUs where interventions must balance emotional exploration with the need to maintain psychological stability and support caregiving capacity.

Experience of the Groups

Qualitative findings indicated that participants experienced the groups as containing due to several interacting factors, including a sense of safety, connecting with other mothers, knowledgeable facilitators, and being recipients of compassion. These results are in line with broader qualitative literature indicating the importance of relational safeness and facilitator credibility and compassionate modeling within CFT (Garrett et al., 2025; Griner et al., 2022)

Participants valued the educational and experiential components of the group. Learning about CFT concepts and skills alongside practicing compassion-based exercises appeared to support insight into their own emotional processes and those of their babies. Consistent with other research, Heriot-Maitland et al. (2014) and Thirkettle et al. (2024) suggest this combination of psychoeducation and experiential practice may support both cognitive understanding and embodied emotional changes. The flexibility of the group structure, including the ability to attend

with babies and accommodating varied attendance, was also identified as important for engagement and opportunities to practice childcare in group settings.

Impact Beyond the Groups

Participants commonly cited using CFT ideas and practices outside the group and post-discharge. This included both recalling conceptual frameworks, such as the three emotional regulation systems, and actively using compassion-based practices to support emotional regulation. Mothers felt more confident in their parenting and better able to manage conflict with their partners and other family members, suggesting that just brief exposure to CFT may provide transferable skills that mothers could use not only with their baby but also in their interpersonal functioning.

Participants also described a growing sense of common humanity, recognizing that struggling in motherhood was a shared human experience. A similar theme of participants developing a sense of common humanity was reported by Heriot-Maitland et al. (2014) and Thirkettle et al. (2024). Sharing experiences with others may have reduced feelings of isolation and shame (Garrett et al., 2025). The experience of receiving compassion within the group may also have positively reinforced participants' compassion towards themselves and others, potentially contributing to broader relational benefits.

Clinical and Service Implications

Although the findings suggest that brief CFT groups are feasible within MBU's, owing to the lack of a controlled group, these results should be considered preliminary and warrant further investigation. Clinically meaningful change was observed despite the women being acutely unwell, heterogeneous presentations, and limited lengths of stay. The observation that meaningful psychological change occurred within an average of three sessions supports a growing evidence base that this may be a potentially efficient approach for delivering psychological support in perinatal services. This support may be delivered even earlier, with some key concepts provided in a handout to pregnant women and new mothers as part of routine support.

Participants' accounts suggest that therapeutic impact was not simply due to intervention content but also the experience of being cared for and contained in the group setting. CFT emphasizes affiliative processes, social safety, and compassion as key mechanisms of change, which may be particularly important for mothers experiencing high shame and self-criticism. Services delivering CFT in MBUs may therefore need to consider not just intervention fidelity but relational and environmental conditions that support safeness.

Participants also highlighted the potential value of extending CFT principles beyond the group context. This included training ward staff in core CFT to support consistency of care and increase access. CFT resources following discharge. Requests for partner involvement and continued access to CFT reflect a desire for shared understanding and ongoing support beyond the inpatient setting, consistent with findings from other perinatal CFT evaluations (Thirkettle et al., 2024).

Limitations

There are several limitations that warrant consideration. The sample size was relatively small and underpowered, requiring caution when interpreting quantitative findings. Participants were heterogeneous in terms of diagnosis and attendance, and all interview participants identified as White, limiting the generalizability of qualitative findings. In a service evaluation without a control group, the findings should be interpreted as preliminary rather than confirmatory.

Conclusion

This service evaluation provides preliminary evidence that a brief CFT group is both feasible and clinically beneficial in an inpatient MBU setting. Significant reductions in self-criticism and fears of compassion (across all domains), alongside increased self-reassurance, and session-level improvements in distress and connectedness, suggest that even limited exposure to CFT may support meaningful psychological change for mothers experiencing severe perinatal mental health difficulties.

Importantly, these changes occurred despite variable attendance, with mothers attending an average of three sessions, indicating that stand-alone sessions may suit the reality of inpatient perinatal care. Qualitative findings highlight the importance of relational safeness, skilled facilitation, and compassionate group environments in supporting engagement.

Although findings should be interpreted cautiously due to the small sample size and service-evaluation design, this study contributes to early evidence that brief CFT groups may offer a valuable, compassion-based intervention within MBUs and warrants further research in larger, controlled studies.

References

Beato, A. F., Albuquerque, S., Kömürcü Akik, B., da Costa, L. P., & Salvador, Á. (2022). Do maternal self-criticism and symptoms of Postpartum Depression and anxiety mediate the effect of history of depression and anxiety symptoms on mother-infant bonding? Parallel–serial mediation models. *Frontiers in Psychology*, *13*, 858356. https://doi.org/10.3389/fpsyg.2022.858356

Brandmeyer, T., & Delorme, A. (2021). Meditation and the wandering mind: A theoretical framework of underlying neurocognitive mechanisms. *Perspectives on Psychological Science*, *16*(1), 39–66. https://doi.org/10.1177/1745691620917340

Brassel, A., Townsend, M. L., Pickard, J. A., & Grenyer, B. F. S. (2020). Maternal perinatal mental health: Associations with bonding, mindfulness, and self-criticism at 18 months postpartum. *Infant Mental Health Journal*, *41*(1), 69–81. https://doi.org/10.1002/imhj.21827

Caldwell, J., Meredith, P., Whittingham, K., & Ziviani, J. (2021). Shame and guilt in the postnatal period: A systematic review. *Journal of Reproductive and Infant Psychology*, *39*(1), 67–85. https://doi.org/10.1080/02646838.2020.1754372

Cantilino, A., & Zambaldi, C. F. (2020). Anxiety disorders in women. In *Women's mental health: A clinical and evidence-based guide* (pp. 111–123). https://doi.org/10.1007/978-3-030-29081-89

Craig, C., Hiskey, S., & Spector, A. (2020**).** Compassion-focused therapy: A systematic review of its effectiveness and acceptability in clinical populations. *Expert Review of Neurotherapeutics, 20*(4), 385–400. https://doi.org/10.1080/14737175.2020.1746184

Davis, J. A., Finlay-Jones, A. L., Bear, N., Prescott, S. L., Silva, D. T., & Ohan, J. L. (2023). Time-out for well-being: A mixed methods evaluation of attitudes and likelihood to engage in different types of online emotional well-being programmes in the perinatal period. *Women's Health (London, England)*, *19*. https://doi.org/10.1177/17455057231184507

Dryer, R., Chee, P., & Brunton, R. (2022). The role of body dissatisfaction and self-compassion in pregnancy-related anxiety. *Journal of Affective Disorders*, *313*, 84–91. https://doi.org/10.1016/j.jad.2022.06.068

Fang, Q., Lin, L., Chen, Q., Yuan, Y., Wang, S., Zhang, Y., Liu, T., Cheng, H., & Tian, L. (2022). Effect of peer support intervention on perinatal depression: A meta-analysis. *General Hospital Psychiatry*, *74*, 78–87. https://doi.org/10.1016/j.genhosppsych.2021.12.001

Felder, J. N., Lemon, E., Shea, K., Kripke, K., & Dimidjian, S. (2016). Role of self-compassion in psychological well-being among perinatal women. *Archives of Women's Mental Health*, *19*(4), 687–690. https://doi.org/10.1007/s00737-016-0628-2

Fonseca, A., & Canavarro, M. C. (2018). Exploring the paths between dysfunctional attitudes towards motherhood and postpartum depressive symptoms: The moderating role of self-compassion. *Clinical Psychology & Psychotherapy*, *25*(1), e96–e106. https://doi.org/10.1002/cpp.2145

Germer, C., & Neff, K. (2013). Self-compassion in clinical practice. *Journal of Clinical Psychology*, *69*(8), 856–867. https://doi.org/10.1002/jclp.22021

Germer, C., & Neff, K. (2019). *Teaching the Mindful Self-Compassion Program: A guide for professionals*. Guilford Press.

Gilbert, P. (2010). An introduction to compassion focused therapy in cognitive behavior therapy. *International Journal of Cognitive Therapy, 3*(2), 97–112. https://doi.org/10.1521/ijct.2010.3.2.97

Guo, L., Zhang, J., Mu, L., & Ye, Z. (2020). Preventing postpartum depression with mindful self-compassion intervention: A randomized control study. *The Journal of Nervous and Mental Disease*, *208*(2), 101–107. https://doi.org/10.1097/nmd.0000000000001096

Huynh, T., Phillips, E., & Brock, R. L. (2022). Self-compassion mediates the link between attachment security and intimate relationship quality for couples navigating pregnancy. *Family Process*, *61*(1), 294–311. https://doi.org/10.1111/famp.12692

Kendig, S., Keats, J. P., Camille Hoffman, M., Kay, L. B., Miller, E. S., Simas, T. A. M., Frieder, A., Hackley, B., Indman, P., Raines, C., Semenuk, K., Wisner, K. L., & Lemieux, L. A. (2017). Consensus bundle on maternal mental health: Perinatal depression and anxiety. *Obstetrics and Gynecology*, *129*(3), 422–430. https://doi.org/10.1097/aog.0000000000001902

Lau, Y., Cheng, J.-Y., Wong, S.-H., Yen, K.-Y., & Cheng, L.-J. (2021). Effectiveness of digital psychotherapeutic intervention among perinatal women: A systematic review and meta-analysis of randomized controlled trials. *World Journal of Psychiatry*, *11*(4), 133. https://doi.org/10.5498/wjp.v11.i4.133

Law, N. K., Hall, P. L., & Cheshire, A. (2021). Common negative thoughts in early motherhood and their relationship to guilt, shame and depression. *Journal of Child and Family Studies*, *30*(8), 1831–1845. https://doi.org/10.1007/s10826-021-01968-6

MacBeth, A., & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review*, *32*(6), 545–552. https://doi.org/10.1016/j.cpr.2012.06.003

McLeish, J., Ayers, S., & McCourt, C. (2023). Community-based perinatal mental health peer support: A realist review. *BMC Pregnancy and Childbirth*, *23*(1), 1–12. https://doi.org/10.1186/s12884-023-05843-8

Mitchell, A. E., Whittingham, K., Steindl, S., & Kirby, J. (2018). Feasibility and acceptability of a brief online self-compassion intervention for mothers of infants. *Archives of Women's Mental Health*, *21*(5), 553–561. https://doi.org/10.1007/s00737-018-0829-y

Miyagawa, Y., & Taniguchi, J. (2020). Self-compassion and time perception of past negative events. *Mindfulness*, *11*(3), 746–755. https://doi.org/10.1007/s12671-019-01293-6

Mohamadirizi, S., & Kordi, M. (2016). The relationship between multi-dimensional self-compassion and fetal-maternal attachment in prenatal period in referred women to Mashhad Health Center. *Journal of Education and Health Promotion*, *5*(1), 21. https://doi.org/10.4103/2277-9531.184550

Monteiro, F., Fonseca, A., Pereira, M., Alves, S., & Canavarro, M. C. (2019). What protects at-risk postpartum women from developing depressive and anxiety symptoms? The role of acceptance-focused processes and self-compassion. *Journal of Affective Disorders*, *246*, 522–529. https://doi.org/10.1016/j.jad.2018.12.124

Neff, K. D. (2017). The science of self-compassion. In C. Germer & R. Siegel (Eds.), *Compassion and wisdom in psychotherapy* (pp. 79–92). The Guilford Press.

Neff, K. D. (2023). Self-compassion: Theory, method, research, and intervention. *Annual Review of Psychology*, *74*, 193–218. https://doi.org/10.1146/annurev-psych-032420-031047

Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of Clinical Psychology*, *69*(1), 28–44. https://doi.org/10.1002/jclp.21923

Samios, C., Townsend, M., & Newton, T. (2021). Self-compassion predicts less fear of childbirth in childless women: The mediating role of birth beliefs. *Psychology & Health*, *36*(11), 1336–1351. https://doi.org/10.1080/08870446.2020.1846737

Smith, J. A. (2017). Interpretative phenomenological analysis: Getting at lived experience. *The Journal of Positive Psychology*, *12*(3), 303–304. https://doi.org/10.1080/17439760.2016.1262622

Smith, J. A., & Eatough, V. (2007). Interpretative Phenomenological Analysis. *Analysing Qualitative Data in Psychology*, 35–50. https://doi.org/10.4135/9781446207536.d10

Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. Sage.

Tang, Y. Y., & Posner, M. I. (2013). Tools of the trade: Theory and method in mindfulness neuroscience. *Social Cognitive and Affective Neuroscience*, *8*(1), 118–120. https://doi.org/10.1093/scan/nss112

Townshend, K., & Caltabiano, N. (2019). Self-compassion and mindfulness: Modeling change processes associated with the reduction of perinatal depression. *Journal of Child and Family Studies*, *28*(7), 1790–1802. https://doi.org/10.1007/s10826-019-01371-2

Xavier, S., Branquinho, M., Pires, R., Moreira, H., Coelho, M., & Araújo-Pedrosa, A. (2023). Dysfunctional attitudes toward motherhood and depressive symptoms in Portuguese pregnant women during the COVID-19 pandemic: The mediating roles of self-compassion and mindful self-care. *Mindfulness*, *14*(2). https://doi.org/10.1007/s12671-022-02049-5

Waqas, A., Zafar, S. W., Meraj, H., Tariq, M., Naveed, S., Fatima, B., Chowdhary, N., Dua, T., & Rahman, A. (2022). Prevention of common mental disorders among women in the perinatal period: A critical mixed-methods review and meta-analysis. *Global Mental Health*, *9*, 157. https://doi.org/10.1017/gmh.2022.17

Yela, J. R., Crego, A., Buz, J., Sánchez-Zaballos, E., & Gómez-Martínez, M. Á. (2022). Reductions in experiential avoidance explain changes in anxiety, depression and well-being after a mindfulness and self-compassion (MSC) training. *Psychology and Psychotherapy*, *95*(2), 402–422. https://doi.org/10.1111/papt.123

The Association for Prenatal and Perinatal Psychology and Health
Journal of Prenatal & Perinatal Psychology & Health
ISSN: 1097-8003
Vol. 40 No. 1 Spring 2026
https://doi.org/10.62858/apph260502

Posttraumatic Growth in Parents Following Preterm Birth: A Systematic Review of Related Factors

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This systematic review synthesizes quantitative evidence on factors associated with posttraumatic growth (PTG) in parents following preterm birth. Systematic searches of MEDLINE, Web of Science, PsycINFO, CINAHL, and ProQuest Dissertations & Theses identified peer-reviewed and grey literature published up to August 2025. Studies were included if they involved parents of preterm infants, administered a validated PTG measure at any time after birth, and examined factors related to PTG. Thirteen studies (N = 2,568 parents) met inclusion criteria, with study quality rated as good (n = 2) or fair (n = 11). Across studies, 38 factors were examined. PTG was positively associated with social support, longer neonatal admission, parental well-being, lower gestational age, posttraumatic stress symptoms, resilience, adaptive coping strategies, and deliberate rumination, although some associations were inconsistent or examined in only one study. Overall, findings suggest a complex interplay of demographic, psychological, social, and event-related factors influencing PTG in this population, but methodological heterogeneity limits comparability and the strength of conclusions. Future research should prioritize consistent assessment of key factors and employ longitudinal and intervention designs to inform the development of integrated models of care that address both psychological distress and PTG in parents of preterm infants.

Keywords: Neonatal Intensive Care Unit (NICU), parents, posttraumatic growth, preterm birth, psychological adaptation, traumatic stress

Preterm birth, defined as live birth before 37 weeks' gestation, affects approximately 13.4 million infants annually and is the leading cause of death in children under five (Ohuma et al., 2023; World Health Organization, 2023). Survival rates vary markedly by region, with less than

The authors report no conflicts of interest. This work was completed in partial fulfillment of the lead author's Doctorate in Clinical Psychology, funded by Health Education and Improvement Wales (HEIW). Jade Fullick, DClinPsy (ORCID: 0009-0003-0269-3250), Rosa Hoshi, PhD, DClinPsy (ORCID: 0000-0002-3367-2327), and Nicole Parish, DClinPsy (ORCID: 0009-0008-0872-718X) are Clinical Psychologists affiliated with the School of Psychology, Cardiff University, United Kingdom. Please send correspondence to Dr. Fullick: FullickJ@cardiff.ac.uk

10% of extremely preterm infants (<28 weeks) surviving in low-income countries, compared to over 90% in high-income settings (Perin et al., 2021). Advances in neonatal care have now enabled survival from 22 weeks' gestation (Malloy & Wang, 2022; Smith et al., 2023), but families often face prolonged hospitalization in the Neonatal Intensive Care Unit (NICU) and long-term developmental or health challenges (Nelson et al., 2020).

Parents of preterm infants are at increased risk of psychological difficulties, including depression, anxiety, and posttraumatic stress symptoms (PTSS), compared with the general perinatal population (Laccetta et al., 2023; Legge et al., 2023; Pace et al., 2016). NICU admission exposes parents to separation from their baby, medical uncertainty, and distressing interventions; disrupting parent-infant bonding and assumed expectations of early parenthood (Baía et al., 2016; Obeidat et al., 2009). Although parental distress may initially represent an acute, adaptive response to trauma, many parents continue to experience psychological difficulties beyond NICU admission (Galea et al., 2021).

Crucially, psychological distress is not solely determined by infants' medical acuity but also by parents' subjective experience of the event (Colville & Pierce, 2012), highlighting the importance of accessible psychological support during NICU admission. However, available evidence suggests that access to this provision is inconsistent. A UK audit found that over 30% of units did not offer access to a psychologist or counselor, with only 15% using screening tools to identify parents' psychological distress (Thomson et al., 2022). A survey from NICUs across Australia and New Zealand reported that only 43% of units used screening tools, and just 9% provided staff-led mental health support programs (Harrison Ginsberg et al., 2023). Globally, comparable data is not yet available, but existing findings indicate substantial gaps in support.

Alongside distress, some parents also report posttraumatic growth (PTG), a process of positive psychological change arising from the struggle with adversity (Tedeschi & Calhoun, 1995). PTG does not diminish the traumatic impact of events but, instead, offers a framework for meaning-making and adaptation. PTG and PTSS can co-occur, highlighting the importance of assessing both outcomes to inform tailored psychological support (Liu et al., 2017).

The functional-descriptive model (Tedeschi & Calhoun, 2004) conceptualizes PTG as transformational change in cognitions, emotions, and behaviors beyond pre-trauma functioning, differentiating it from related concepts such as resilience and recovery. While PTG has been reported across diverse cultural and demographic contexts, it is not experienced by all individuals, and research suggests meaningful cultural variation in its experience and expression (Exenberger et al., 2019; Kashyap & Hussain, 2018). The Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) is the most widely used tool for measuring PTG, assessing growth on five domains: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. The PTGI has been validated across diverse populations, including parents of NICU-hospitalized newborns (Bayrami et al., 2023).

Parents of preterm infants report higher levels of PTG than those of term-born infants (Noy et al., 2015; Taubman-Ben-Ari et al., 2014). A systematic review by Brandão and colleagues (2020) examined PTG after childbirth and found a consistent association between prematurity and PTG but did not identify related factors. More recently, O'Toole et al. (2022) reviewed factors

associated with PTG in parents following their child's admission to intensive care. However, by combining findings across heterogeneous groups, including term-born infants with complex medical needs and children up to 16 years old, this review was unable to capture the unique experience of preterm parents. Emerging studies focus directly on this group (Wu et al., 2024; Xingyanan et al., 2025), highlighting the need for an updated synthesis.

This systematic review aims to synthesize and critically evaluate quantitative evidence on factors associated with PTG in parents following preterm birth, specifically examining:

- Demographic factors: family background, parents' personal characteristics (e.g., parental age, education level)
- Psychological factors: how parents think, feel, and cope with their experiences (e.g., depression, resilience)
- Social factors: including relationships and support systems (e.g., partner support, access to community resources)
- Event characteristics: occurring during and after preterm birth that may influence parental adjustment (e.g., NICU duration, medical interventions)

To reflect diverse family structures, gender-neutral terminology is used throughout: "birthing parent" refers to anyone who has given birth, while "non-birthing parent" describes partners. Exceptions are made in tables where study characteristics are reported verbatim.

Methods

This systematic review was conducted and reported according to guidelines published on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Page et al., 2021). The protocol was published via PROSPERO (ID: CRD42024519511).

Search Strategy and Study Selection Criteria

A systematic search of articles published before August 2025 was conducted across five databases: MEDLINE, Web of Science, PsycINFO, CINAHL, and ProQuest Dissertations & Theses. The search terms were limited to variations of two keywords ("posttraumatic growth" and "preterm birth") to ensure that all relevant papers were identified. Supplementary Data 1 outlines the final search terms.

Articles were included if they met the following criteria: (a) observational quantitative studies in which (b) participants were parents who had experienced preterm birth; (c) participants completed a psychometrically validated measure of posttraumatic growth at any time after birth; and (d) factors related to PTG in preterm parents were examined. Research on parents' posttraumatic growth following NICU admission was excluded unless data were reported separately for preterm births. Similarly, research on parents' posttraumatic growth following the death of a preterm baby was excluded unless data were reported separately for non-bereaved parents. Gray literature was included if it was empirical. Studies published in non-English

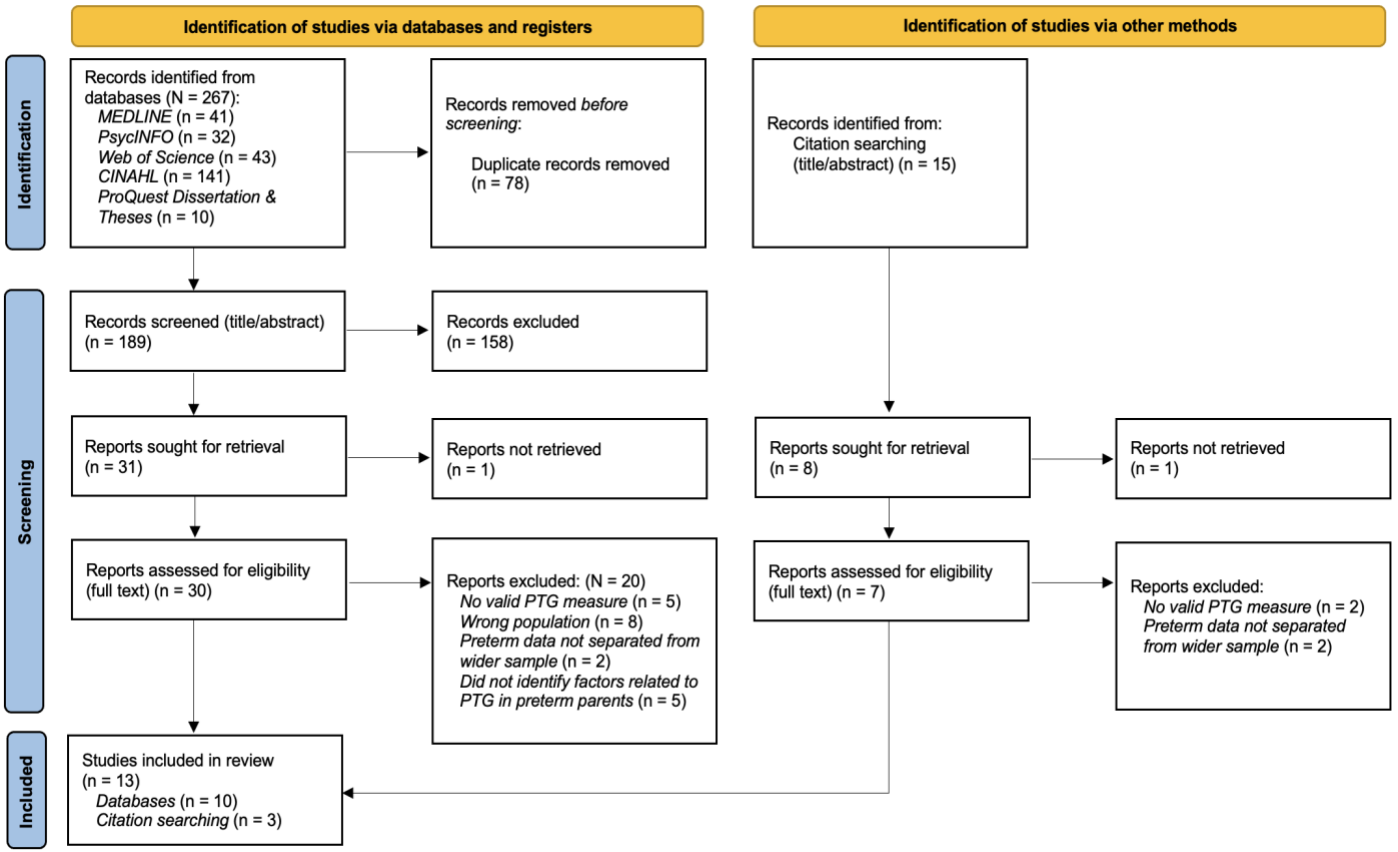
languages were translated into English. Reference lists of eligible research studies and any relevant published reviews were screened for relevant papers.

Search Results

A PRISMA flow diagram depicting stages of the screening and selection process is presented in Figure 1. The search strategy yielded 267 papers for screening, and 189 remained after duplicate removal. Thirty-one papers were identified as potentially eligible following title and abstract screening. The full text could not be retrieved for one article, leaving 30 articles for full-text review. One Korean-language article was professionally translated. Twenty papers were excluded following full-text review: five used no valid PTG measure, eight focused on non-preterm populations, two did not separate preterm data, and five did not examine factors related to PTG. Ten papers were identified as eligible for inclusion from database searching. A further three papers were identified following backward and forward citation chaining. One citation (Pang, 2021, unpublished thesis) was identified but excluded because no abstract or full text was available. In total, 13 studies were included.

Figure 1

PRISMA 2020 Flow Diagram



Data Extraction

Results were tabulated to capture key data extracted from the included studies. The following information was extracted for each study: author; year and country of origin; study aim/objective; study design; data collection method and dates; sample and clinical inclusion/exclusion criteria; demographic information; PTG measure employed and timing; and other variables examined in preterm parents (see Table 1). Key findings were also extracted, including PTG levels (means and standard deviations) and correlation or regression statistics for related factors (see Table 2). For PTGI data, item means were calculated (i.e., total score divided by the number of administered items) to compare PTG levels across studies.

Quality Assessment

Given the observational, quantitative nature of the included studies, the Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies, developed by the National Heart, Lung, and Blood Institute (NHLBI; accessed January 2025), was used to assess study quality and risk of bias (Table 3). The tool comprises 14 questions for which the rater assigns "yes," "no," "cannot determine," "not applicable," or "not reported." The tool was used to assign an overall rating of "poor," "fair," or "good" to each study.

Interrater Reliability

A second rater was involved during screening, data extraction, and quality appraisal, screening 25% of papers at each stage. Interrater agreement for titles and abstracts was 93% ($k = 0.76$), and for the full-text review, it was 100% ($k = 1.00$). Interrater agreement for data extraction was 100% ($k = 1.00$), and for quality appraisal was 97% ($k = 0.93$). All disagreements between raters were discussed, leading to consensus.

Table 1

Methodological Characteristics of Included Studies

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Brelsford et al. (2020) *USA*	To explore associations between parents' posttraumatic growth, distress, and aspects of their religiousness and spirituality post-NICU discharge	Cross-sectional	Convenience sampling from NICU Questionnaire survey sent via post; 48% returned	N = 25 parents 12 fathers, 13 mothers Age: *M* = 30.36; *SD* = 4.10 Inclusion: babies born 25–35 weeks and admitted to NICU within 48 hours Exclusion: Infants born with congenital syndromes, severe or life-threatening illnesses or significant deformational abnormalities	Ethnicity: 88% White Marital status: 96% married Education: Not stated Employment: Not stated Income/SES: Not stated Spirituality/Religion: 40% Protestant or Catholic; 20% no religious affiliation; 20% agnostic or atheist, 20% 'other' 60% Religious (slightly-very), 80% Spiritual Birth order: Not stated	PTGI (Tedeschi and Calhoun, 1996); 21 items, 6-point scale 0–5 Completed 6 weeks after discharge from NICU	Demographic factors None reported Psychological factors Depression, Anxiety and Stress *(Depression, Anxiety and Stress Scale; DASS-21)* Religious coping *(Brief Religious Coping Scale; RCOPE)* Sanctification (*Theistic, Manifestation of God Scale; Non-theistic, Sacred Qualities Scale)* Social factors Spiritual disclosure *(Spiritual Disclosure Scale; SDS*) Event characteristics None reported

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Galpin (2013) *UK*	To report the existence of posttraumatic stress (PTSS) and PTG in parents of premature babies hospitalized on a neonatal unit, and to test the PTG model by examining the relationships between rumination type (intrusive and deliberate) and PTSS, PTG and social support	Cross-sectional	Convenience sampling from NICU (4 units) Questionnaire-based study recruited in two phases; 19% response rate (first phase); 32% response rate (second phase) over 10.5 months	N = 83 parents (30 mother-father pairs + 23 additional unpaired mothers) Age: paired data (mothers' range 20–40 years, median = 31; fathers range 20–45 years, median = 31), unpaired (mothers' range 21–49 years, median = 31.5) Inclusion: Infants of gestational age between 29–36 weeks with birth weight greater than 1500g Exclusion: Mothers with ongoing physical health problems because of the birth	Ethnicity: Majority White British (93% paired, 87% unpaired mothers) Marital status: Majority married or with partner (100% paired, 91% unpaired mothers) Education: Majority paired parents left education after 18 (60% mothers, 43% fathers); unpaired mothers 32% at 16, 23% at 18, 41% after 18 Employment: Not stated Spirituality/Religion: Not stated Income/SES: Not stated Birth order: Majority first baby (80% fathers, 73% paired mothers, 56.5% unpaired mothers)	PTGI (Tedeschi and Calhoun, 1996); 21 items, 6-point scale 0–5 Completed 4–8 weeks after discharge from NICU	Demographic factors Parental age Marital status Education Ethnicity Mental health diagnoses Psychological factors Posttraumatic stress symptoms *(PTSS; Impact of Event Scale-Revised, IES-R)* Deliberate and intrusive rumination *(Event-Related Rumination Inventory, ERRI)* Depression *(Centre for Epidemiologic Studies Depression Scale, CES-D)* Social factors Social support *(Crisis Support Scale, CSS)* Event characteristics Gestational age Birth weight Length of stay (NICU) Infant health status Multiple birth Birth order

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Jarašiūnaitė-Fedosejeva et al. (2024) *Lithuania*	To explore the moderating effect of proneness to guilt and shame on the relationship between birth-related posttraumatic stress and posttraumatic growth in women with preterm births	Cross-sectional	Convenience sampling from online communities for parents of preterm infants, and outpatient neonatal unit and obstetric settings Web-based survey January–August 2021	N = 79 mothers Age *M* = 31.42; *SD* = 5.22 Inclusion: 36 weeks or less gestational age (*M* = 31.44, *SD* = 3.98) Exclusion: None stated 74.7% of women indicated having healthy babies, 19% prematurity related illnesses or health problems	Ethnicity: Not stated, 'Lithuanian women' Marital status: 95% married or living with partner Education: 70.9% attended higher education Employment: Not stated Income/SES: Not stated Spirituality/Religion: Not stated Birth order: Previous childbirths varied from 1 to 7 (median 2, mode 1)	PTGI (Tedeschi and Calhoun, 1996); 21 items, 6-point scale 0–5; translated into Lithuanian Completed at least 2 months, and no longer than 14 months, after birth (*M* = 5.95, *SD* = 3.82) PTGI (Tedeschi and Calhoun, 1996); 21 items, 6-point scale 0–5; translated into Lithuanian Completed at least 2 months, and no longer than 14 months, after birth (*M* = 5.95, *SD* = 3.82)	Demographic factors None reported Psychological factors Birth-related posttraumatic stress (PTSS; City Birth Trauma Scale; City BiTS) Guilt and shame proneness (Guilt and Shame Proneness Scale; GASP) Social factors None reported Event characteristics Gestational age Infant health status

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Lee & Kang (2020) *Korea*	To explore the impact of resilience and social support on the PTG of mothers whose premature infants have been hospitalized in the NICU	Cross-sectional	Convenience sampling from online communities and self-help group forums for parents of preterm infants Web-based survey January 2019	N = 105 mothers Age at birth *M* = 31.41±3.63 years 19% 'advanced maternal age' (≥35) Inclusion: Hospitalized for more than 7 days and now discharged; corrected age 18 months or less Exclusion: Readmission to NICU; serious chromosomal abnormalities or genetic disorders NICU stay: *M* = 58.0 ± 53.4 days Birth weight (g): *M* = 1577.5 ± 666.0; range: 520–3500 (g)	Ethnicity: Not stated Marital status: 99% married, 1% unmarried Education: 8.6% high school, 78.1% university, 13.3% graduate school Employment: 44.8% unemployed, 55.2% employed Income/SES: 1.9% low income, 21.9% lower-middle, 41.9% middle, 22.9% upper-middle, 11.4% high income Spirituality/Religion: 45.7% religious, 20% Protestant, 17.1% Catholic, 7.6% Buddhist, 1% other Birth order: 76.2% firstborn, 23.8% later born	PTGI, Korean version (Song et al., 2009) 16 items on 4 dimensions, 6-point scale 0–5 Completed within 18 months corrected age	Demographic factors Age at birth Employment status Psychological factors Resilience *(Korean version: Connor-Davidson Resilience Scale; CD-RISC)* Social factors Social support *(Multi-dimensional Scale of Perceived Social Support Scale; MSPSS)* Event characteristics Birth weight Length of stay (NICU) Birth order

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Newton-Bennett (2022) *Australia*	To investigate wellbeing and posttraumatic growth in birthing parents of children aged 0–9 years, and identify risk and protective factors associated with outcomes	Cross-sectional	Convenience sampling via parent and neonatal support organizations Web-based survey, respondents residing in Australia (36.6%), Canada (6.7%), Ireland (9.0%), New Zealand (26.8%), UK (6.2%) or USA (14.7%) Data collected over 7 weeks in 2022	N = 866 birthing parents (99.4% female gender), stratified by child age groups (35.6% infancy/toddlerhood 0–2, 29.9% early childhood 3–5, 34.5% middle childhood 6–9). Current age: *M* = 36.0 ± *SD* = 5.59 Inclusion: <37 weeks gestational age (M = 30.15, *SD* = 3.60) Exclusion: None stated	Ethnicity: 91% did not identify with minority ethnic group Marital status: 91% married or de facto relationship Education: 90% high educational attainment Employment: Not stated Income/SES: 89% high household socioeconomic status Spirituality/Religion: Not stated Birth order: Not stated	PTGI (Tedeschi and Calhoun, 1996); 21 items, 6-point scale 0–5 Completed 0–9 years after birth	Demographic factors Parental age Parental ethnicity Psychological factors Psychological wellbeing *(Psychological Wellbeing Scale; PWBS)* Social factors None reported Event characteristics NICU length of stay (>50 days) Infant health status: Neonatal risk Number of therapies in NICU

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Okay & Güler (2021) *Turkey*	To examine the depression, stress, and PTG experienced by parents after preterm birth from the perspective of relationship dynamics	Cross-sectional	Online questionnaire survey March 2019–February 2020, before COVID-19 pandemic	N = 209 parents 50 fathers, 159 mothers Age *M* = 31.01 ± 5.35 years Inclusion: Baby born at or before 32 weeks, singleton baby, less than 12 months old Exclusion: Congenital abnormalities	Ethnicity: Not stated Marital status: Not stated Education: Not stated Employment: 57.9% employed, 42.1% not employed Income/SES: 10% described income level as inadequate, 45.5% as partially adequate and 44.5% as adequate Spirituality/Religion: Not stated Birth order: Not stated	PTGI adapted into Turkish (Duru, 2006), 21 items on 5 dimensions, 6-point scale 0–5 Completed within the first year after birth	Demographic factors None reported Psychological factors Relationship satisfaction *(Relationship Assessment Scale; RAS)* Emotional dependency *(Emotional Dependency Scale)* Depression, Anxiety and Stress *(Depression, Anxiety and Stress Scale; DASS)* Social factors None reported Event characteristics None reported

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Porat-Zyman et al. (2018) *Israel*	To investigate the long-term impact of premature birth on personal growth (PG) in mothers, and the mediating role of maternal mental health (MH) over 4 years postpartum.	Prospective longitudinal *Part of the MOST (Mothers of Singletons and Twins) project*	Deliberate sampling; over-representation of mothers of preterm babies and twins; from hospital setting Self-report questionnaires administered over 4 intervals: (1) 1 month, (2) 1 year, (3) 2 years, and (4) 4 years post-partum 2001–2012 Phase 4: 40.1% response rate	N = 222 mothers (preterm group, whole sample 561) Age *M* = 30.90 ± 4.58 years Inclusion: None stated Exclusion: None stated 78% of preterm group born between 24–35 weeks (*M* = 31.37, *SD* 2.47)	Ethnicity: Israeli Marital status: 100% married Education: 65.8% had an academic education *(whole sample, not given separately for preterm group, no sig. differences)* Employment: Not stated Income/SES: 61.8% average economic status *(whole sample, not given separately for preterm group, no sig. differences)* Spirituality/Religion: Not stated Birth order: 62.7% first time mothers	PTGI adapted to parenthood and translated into Hebrew (Taubman-Ben-Ari et al, 2010), 2 items referring to spiritual change omitted, 19 items on 4 dimensions; 6-point scale 0–5 Completed once at the last timepoint, 4 years after birth (*n* = 77)	Demographic factors None reported Psychological factors Mental health; initial and change *(Mental Health Inventory; MHI)* Social factors None reported Event characteristics None reported

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Rozen et al. (2017) *Israel*	To expand existing knowledge regarding the way in which the relationships between the objective severity of premature childbirth, the subjective perception of stress in such circumstances, and several Psychological and Social resources contribute to the mother's personal growth	Prospective longitudinal *Part of the MOST (Mothers of Singletons and Twins) project*	Convenience sampling from NICU (Sheba Hospital) Self-report questionnaires administered at two intervals: (1) 1 month after birth while infant in NICU and (2) 2 months after reaching corrected birth age January 2013–April 2015	N = 94 mothers, stratified by infant risk: 42 (44.7%) low/no risk, 52 (55.3%) moderate-high risk Age *M* = 32.54 ± 3.85 years Inclusion: Born before 35 weeks and birth weight lower than 1750g Exclusion: Infants' medical status critical or at serious risk of life	Ethnicity: 92.6% born in Israel Marital status: 93.1% married or in stable relationship Education: 81.9% post-secondary or academic education Employment: Not stated Income/SES: 52.1% average, 38.3% above average Spirituality/Religion: Not stated Birth order: 55.3% first child, 40.4% already had one or two children, 4.3% >2 older children	PTGI adapted for mothers following childbirth, Hebrew (Taubman-Ben-Ari, 2011), 21 items on 5 dimensions, 6-point scale 0–5 Completed 2 months after newborn reached corrected birth age (*n* = 87)	Demographic factors Level of education Economic status Parental age Psychological factors Stress *(Perceived Stress Scale; PSS)* Self-esteem *(Rosenberg Self-Esteem Scale; RSES)* Attachment style *(Experiences in Close Relationships Scale)* Social factors Maternal (grandmother's) emotional support *(Support Functions Scale; SFS)* Event characteristics Infant health status: objective severity (medically defined risk level)

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Taubman-Ben-Ari et al. (2010) *Israel*	To examine factors that might contribute to a mother's personal growth after the birth of preterm twins	Prospective longitudinal	Convenience sampling from maternity ward (Sheba Hospital) Self-report questionnaires administered at two intervals; (1) 3 weeks postpartum, (2) 1 year postpartum	N = 64 mothers in preterm group (whole sample 211) Age *M* = 30.31 ± 4.20 years Inclusion: Birth of preterm twins Exclusion: None reported	Ethnicity: Not stated Marital status: 100% married or cohabiting with male partner Education: 1/5 high school education, 1/10 post high school education, 2/3 postsecondary degrees *(whole sample, not given separately for preterm group, no sig. differences)* Employment: Most had full time jobs, detailed statistics not reported *(whole sample, not given separately for preterm group)* Income/SES: Most average economic status, detailed statistics not reported *(whole sample, not given separately for preterm group)* Spirituality/Religion: Not stated Birth order: 65% first-time mothers	PTGI, Hebrew (Tedeschi and Calhoun, 1996); 21 items, 6-point scale 0–5 Completed one year after birth (T2)	Demographic factors None reported Psychological factors None reported Social factors Marital adaptation *(Evaluating and Nurturing Relationship Issues Communication and Happiness Scale; ENRICH)* Maternal (grandmother's) support *(Support Functions Scale; SFS)* Event characteristics None reported *Other measures administered but analysis did not isolate these factors in just preterm parents*

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Vidaković & Ombla (2020) *Croatia*	To determine the level of stress, anxiety, depression, life satisfaction and PTG in mothers of premature children, and to determine their relations with measures of social support from family and friends	Cross-sectional	Convenience sampling from online communities and self-help group forums for parents of preterm infants Web-based survey	N = 164 mothers Age *M* = 30.00 ± 5.54 years (range 20–49) Inclusion: Only one child who was born preterm Exclusion: Not stated Gestational age: 40% late preterm (34–36), 31% moderate preterm (30–33), 24% very preterm (26–29), 5% extreme preterm (before 26) NICU Length of stay mean = 44 days, SD = 47.92, range 0–325	Ethnicity: Not stated Marital status: 76% married, 18% cohabiting, 3% single, 2% in a relationship, 1% divorced Education: 58% higher qualifications, 41% high school, 1% primary qualifications Employment: Not stated Income/SES: 69% average income, 27% above average, 4% below average Spirituality/Religion: Not stated Birth order: Not stated	PTGI adapted into Croatian (Malada, 2018); 21 items on 5 dimensions, 5-point scale 1–5 Completed any time after birth: average age of prematurely born child was 3 years (*SD* = 3.29, range 0.08–18 years)	Demographic factors None reported Psychological factors Satisfaction with life *(Satisfaction with Life Scale)* Social factors Social support *(Social Support Scale)* Event characteristics Gestational age NICU Length of stay *Also administered a measure of Depression, Anxiety and Stress (Depression, Anxiety and Stress Scale; DASS), but did not observe relationship with PTG*

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Wang et al. (2023) *China*	To investigate the levels and factors influencing posttraumatic growth among parents of premature infants in NICU	Cross-sectional	Convenience sampling from NICU Questionnaire survey conducted as part of NICU discharge process; 98.64% participation rate February–September 2022	N = 217 parents (111 fathers, 106 mothers) 93.5% aged 20–39 Inclusion: Gestational age <37 weeks, diagnosis of three or more hospital diseases Exclusion: Premature infants with congenital malformations or genetic disorders Gestational age: 30% <32 weeks NICU length of stay: 40.1% <20 days, 32.7% 20–39, 18% 40–59, 9.2% 60+ days	Ethnicity: Not stated Marital status: 95.4% married, 4.6% unmarried Education: 0.9% primary school and below, 24.9% junior school, 34.1% senior school, 40.1% bachelor's degree and above Employment: 81.1% employed, 10.1% resigned, 8.8% unemployed Income/SES: 5.5% low, 26.3% low average, 42.9% average, 25.3% high Spirituality/Religion: Not stated Birth order: 47.9% only child, 52.1% more than one child	PTGI Simplified Chinese Version (Wang et al., 2011); 20 items on 5 dimensions, 6-point scale 0–5 Completed on discharge from NICU	Demographic factors Parental age Marital status Education Psychological factors Rumination *(Chinese Event-Related Rumination Inventory; C-ERRI)* Social factors Social support *(Perceived Social Support Scale; PSSS)* Family resilience *(Family Resilience Assessment Scale; FRAS)* Event characteristics None reported

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Wu et al. (2024) *China*	To investigate the current state of PTG, psychological resilience, social support and coping styles among parents of very low birth weight infants (VLBW) and to explore the interrelationships between these factors	Cross-sectional	Convenience sampling from NICU (9 hospitals) Self-report questionnaires, encouraged to complete when visiting NICU, distributed via QR code January–December 2022	N = 344 parents (207 fathers, 137 mothers) Age *M* = 32.79 ± 4.26 years Inclusion: Parents of VLBW infants (<1500g, <37 weeks' gestation) admitted to NICU after birth; newborn hospitalized for 4–6 weeks Exclusion: Discontinuation of treatment or hospital transfer due to disease progression Gestational age: *M* = 30.33 ± 1.86 weeks	Ethnicity: Not stated Marital status: Not stated Education: 31.10% high school or below, 61.34% bachelor or associate, 7.56% master's degree or above Employment: 53.49% employed, 39.24% freelance work, 7.27% unemployed Income/SES: 20.93% low, 36.92% average, 42.15% high Spirituality/Religion: 12.21% have religious belief, 87.79% do not Birth order: 53.49% first child, 46.51% second child and above	PTGI Simplified Chinese Version (Wang et al., 2011); 20 items on 5 dimensions, 6-point scale 0–5 Completed during NICU admission	Demographic factors None reported Psychological factors Resilience *(Connor-Davidson Resilience Scale; CD-RISC)* Coping style *(Simplified Coping Style Questionnaire; SCSQ)* Social factors Social support *(Perceived Social Support Scale; PSSS)* Event characteristics None reported

Author(s)/ Year/Country	Aim/Objective	Study Design	Data Collection	Sample/Clinical Criteria	Demographic Information	PTG Measure/ When	Other related variables *(measures)*
Xingyanan et al. (2025) *China*	To explore the levels and influencing factors of PTG among parents of preterm infants in the NICU	Cross-sectional	Convenience sampling from NICU Self-report questionnaires May–August 2022	N = 160 parents (100 fathers, 60 mothers) Age *M* = 34.68 ± 5.79 years Inclusion: Gestational age greater than 28 weeks and less than 37 weeks; live birth premature infant admitted to NICU for treatment Exclusion: Parents who gave up treatment for the premature infants; infant death Gestational age: 14.37% 28/29 weeks, 35.00% 30/31 weeks, 26.25% 32/33 weeks, 18.13% 34/35 weeks, 6.25% 36/37 weeks	Ethnicity: Not stated Marital status: Not stated Education: 8.75% primary school, 21.88% junior high school, 26.87% secondary school, 36.25% undergraduate, 6.25% graduate or above Employment: Not stated Income/SES: 20.63% low, 29.37% low average, 20.63% average, 22.50% high average, 6.87% high Spirituality/Religion: 7.50% have religious belief, 92.50% do not Birth order: 42.50% one child, 33.13% second child, 24.37% third+	PTGI Chinese Version (Wang et al., 2011); 20 items on 5 dimensions, 6-point scale 0–5 Completed during hospital admission	Demographic factors Parental role/sex Parental age Education level Significant disease history Monthly household income Psychological factors *C*oping style *(Ways of Coping Questionnaire; WCQ)* Social factors Social support *(Social Support Scale; SSS)* Event characteristics Gestational age Infant health status: Apgar score (5 minutes) Multiple pregnancy

Findings

Thirteen studies published between 2010 and 2025 were included, with nine published in the last five years. This research involved N = 2,632 parents across nine countries: Israel (*n* = 3), China (*n* = 3), the USA, the UK, Lithuania, Korea, Australia, Turkey, and Croatia (*n* = 1 each). One study reported international data from Canada, Ireland, and New Zealand (Newton-Bennett, 2022). Three studies from China collected data during overlapping periods but from different hospitals (Wang et al., 2023; Wu et al., 2024; Xingyanan et al., 2025), and two Israeli studies were part of the same research program but used different cohorts (Porat-Zyman et al., 2018; Rozen et al., 2017), ensuring discrete samples. Data from Taubman-Ben-Ari and colleagues (2010) may overlap with Porat-Zyman and colleagues (2018), so the overall sample is conservatively estimated at N = 2,568.

Birthing parents were over-represented (n = 2,098) compared to non-birthing parents (n = 470). Seven studies included only birthing parents (Jarašiūnaitė-Fedosejeva et al., 2024; Lee & Kang, 2020; Newton-Bennett, 2022; Porat-Zyman et al., 2018; Rozen et al., 2017; Taubman-Ben-Ari et al., 2010; Vidaković & Ombla, 2020). Six included both parents, with one analyzing separately (Galpin, 2013). As shown in Table 1, participants were typically in their early thirties (mean of means = 31.9 years, range 30–36). Marital status was consistently high, with most being married or partnered. Education levels were also high, with most parents reporting post-secondary qualifications. Ten studies reported income data, with most participants of average-to-high socioeconomic status. Ethnicity was less frequently reported, but when available, participants tended to reflect the majority group. Religious affiliation and employment status were inconsistently reported. Nine studies indicated that many participants were first-time parents. Overall, the studies sampled predominantly middle-class, well-educated, partnered parents, although there are notable gaps in demographic reporting.

All studies measured PTG using versions of the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). Nine used the original PTGI-21, with six translating the measure into the appropriate language for their participants (e.g., Lithuanian, Turkish, Croatian, and Hebrew). All studies utilized a Likert-type scale ranging from 0 (no growth) to 5 (greatest growth). One study (Porat-Zyman et al., 2018) omitted two items referring to spiritual change due to insignificant growth on this dimension found in previous studies (Sawyer & Ayers, 2009; Taubman-Ben-Ari et al., 2011). The remaining studies employed alternative versions of the PTGI. Three studies from China used the 20-item C-PTGI, culturally adapted to collectivist values (Wang et al., 2011). One study from Korea used the 16-item K-PTGI, consolidating five domains into four (Lee & Kang, 2020; Song et al., 2009). Item means were compared across studies to account for varied scale length, with ≥3.0 indicating moderate-to-high PTG (Jansen et al., 2011).

Ten studies were cross-sectional and three longitudinal, with PTG assessed from NICU admission to 18 years post-birth. In total, 38 individual factors (Supplementary Data 2) were examined using 26 distinct self-report scales (Supplementary Data 3). Analyses included correlations (*r*), regressions (β), and group comparisons (Table 2).

Table 2

Key Findings of Factors Related to PTG

			Other variables related to PTG		
Study	**Levels of PTG *M* ± SD**	**Demographic factors**	**Psychological factors**	**Social factors**	**Event characteristics**
Brelsford et al. (2020) *USA*	PTGI Total: 52.16 ± 27.37 Item mean[1]: 2.48 ± 1.30 Range: 6–93 *PTGI subscales not reported*	None reported	Positive religious coping positively correlated ($r = .41$, $p < .05$)* Sanctification of parent-child relationship positively correlated ($r = .52$, $p < .05$ – theistic; $r = .73$, $p < .001$ - non-theistic)***; predicted higher PTG, after controlling for stress and parental role/sex ($\beta = .84$, $p < .001$)*** Stress positively correlated with PTG ($r = .46$, $p < .05$)* *Depression[2], anxiety[2], and negative religious coping[2]*	Spiritual disclosure positively correlated ($r = .43$, $p < .05$)	None reported

		Other variables related to PTG			
Study	**Levels of PTG *M* ± SD**	**Demographic factors**	**Psychological factors**	**Social factors**	**Event characteristics**
Galpin (2013) *UK*	PTGI Total[1]: 46.80 ± 23.49 Item mean[1]: 2.23 ± 1.12 Range: 0–93 Five factor structure: [1] Relating to others: 2.52 ± 1.21 New possibilities: 1.67 ± 1.30 Appreciation of life: 2.99 ± 1.45 Personal strength: 2.49 ± 1.36 Spiritual change: 0.93 ± 1.46 Mothers: 51.51± 23.23 Fathers: 42.10 ± 23.75 ($p < .05$)*	**Mothers:** Parental age negatively correlated with PTG ($r = -.52$, $p < .01$)** *Marital status[2], education[2], ethnicity[2], mental health diagnosis[2]* **Fathers:** *Age[2], marital status[2], education[2], ethnicity[2], mental health diagnosis[2]*	**Combined:** Positively correlated: PTSS ($r = .38$, $p < .01$)** Deliberate rumination ($r = .61$, $p < .01$); and predicted PTG ($\beta = .58$, $p = .000$)*** Intrusive rumination ($r = .44$, $p < .01$)** **Mothers:** Positively correlated: PTSS ($r = .38$, $p < .01$)** Deliberate rumination ($r = .60$, $p < .01$)** Intrusive rumination ($r = .43$, $p < .01$)** Depression ($r = .30$, $p < .05$)* **Fathers:** Positively correlated: Deliberate rumination ($r = .52$, $p < .01$)** Intrusive rumination ($r = .40$, $p < .05$)* Depression ($r = .40$, $p < .05$)* *Fathers' PTSS [2]*	*Social support[2]*	**Mothers:** *Gestational age[2], birth weight[2], NICU length of stay[2], infant health status[2], multiple birth[2], birth order[2]* Appreciation of life subscale correlated with: Birth weight ($r = -.27$, $p < .05$)* NICU length of stay ($r = .32$, $p < .05$) **Fathers:** *Gestational age[2], birth weight[2], NICU length of stay[2], infant health status[2], multiple birth[2], birth order[2]*

		Other variables related to PTG			
Study	**Levels of PTG *M* ± SD**	**Demographic factors**	**Psychological factors**	**Social factors**	**Event characteristics**
Jarašiūnaitė-Fedosejeva et al. (2024) *Lithuania*	PTGI Total: 48.62 ± 25.15 Item mean[1]: 2.32 ± 1.20 Range: 0–99 *PTGI subscales not reported*	None reported	Birth-related PTSS positively correlated (r = .32, p < .05)*; and predicted PTG (β = .30, p = .01)** Shame-related negative self-evaluation positively correlated (r = .27, p < .05)*; moderates the relationship between PTSS and PTG, decreasing PTG (p = .02)*; only significant for very preterm group (<32 weeks, N = 35; p < .05)* *Shame-related withdrawal* [2] *Proneness to guilt (negative behavior evaluation and repair action tendencies)* [2]	None reported	Gestational age negatively correlated (r = -.32, p < .01)**; lower gestational age predicts higher PTG (β = .31, p < .01)** *Infant health status*[2] *- after controlling for PTSS and gestational age*
Lee & Kang (2020) *Korea*	K-PTGI Total: 57.38 ± 13.30 Item mean[1]: 3.59 ± 0.83 Range: 17–80 *K-PTGI subscales not reported*	Age at birth (≥35) predicted higher PTG (β = .17, p < .05)* Current employment (on leave vs unemployment) predicted higher PTG (β = .17, p < .05)*	Resilience positively correlated (r = .63, p < .001)***; increased resilience predicted higher PTG (β = .54, p < .001)***	Social support positively correlated (r = .45, p < .001)***	*Birth weight*[2]*, NICU length of stay*[2]*, birth order*[2]

		Other variables related to PTG			
Study	**Levels of PTG *M* ± SD**	**Demographic factors**	**Psychological factors**	**Social factors**	**Event characteristics**
Newton-Bennett (2022) *Australia*	PTGI Total: 47.05 ± 22.63 Item mean[1]: 2.20 ± 1.10 Five factor structure: [1] Relating to others: 2.21 ± 1.25 New possibilities: 1.77 ± 1.34 Appreciation of life: 2.90 ± 1.36 Personal strength: 2.98 ± 1.26 Spiritual change: 1.03 ± 1.45	Lower parental age at assessment predicted higher PTG (β = -.15, p < .001)*** Ethnic minority status predicted lower PTG (β = -.08, p < .05)*	Psychological wellbeing positively correlated with PTG (r = .18, p < .001)***	None reported	NICU length of stay: >50 days predicted higher PTG (β = .13, p < .01)** Infant health status: greater therapies in NICU predicted higher PTG (β = .11, p < .01)**; higher neonatal risk predicted higher PTG (β = .16, p < .001)***
Okay & Güler (2021) *Turkey*	PTGI Total[1]: 57.56 ± 20.12 Item mean[1]: 2.74 ± 0.96 *PTGI subscales not reported* Mothers: 61.24 ± 19.20 Fathers: 53.88 ± 21.03 (p < .05)*	None reported	Relationship satisfaction positively correlated (r = .20, p < .01); and predicted higher PTG (β = .44, p < .05) Emotional dependency positively correlated (r = .29, p < .01); and predicted higher PTG (β = .39, p < .001) Depression negatively correlated (r = -.17, p < .05); and negatively predicted PTG (β = -.84, p < .001); fully mediated relationship satisfaction → PTG; partially mediated emotional dependency → PTG Anxiety negatively predicted PTG (β = -1.27, p < .001); fully mediated relationship satisfaction → PTG; *did not mediate emotional dependency → PTG Stress*[2]	None reported	None reported

		Other variables related to PTG			
Study	**Levels of PTG *M* ± SD**	**Demographic factors**	**Psychological factors**	**Social factors**	**Event characteristics**
Porat-Zyman et al. (2018) *Israel*	PTGI Total[1]: 66.69 ± 11.21 Item mean: 3.51 ± 0.59 *PTGI subscales not reported*	None reported	Increase in mental health over time predicts higher PTG (β = .33, p < .01)** 4 years post; and partially mediates the relationship: preterm birth → PTG (*ind* = .10, p < .01)** *Initial mental health after birth*[2]	None reported	None reported
Rozen et al. (2017) *Israel*	PTGI Total[1]: 63.44 ± 24.11 Item mean[1]: 3.20 ± 1.15 Five factor structure: Relating to others (RTO): 2.99 ± 0.95 New possibilities (NP): 2.83 ± 1.11 Appreciation of life (AOL): 3.46 ± 1.29 Personal strength (PS): 3.50 ± 1.13 Spiritual change (SC): 1.99 ± 1.76	Lower education level predicts higher PTG on *personal strength* (β = -.24, p < .05)* and *spirituality* (β = -.28, p < .01)** dimensions Lower economic status predicts higher PTG on *relating to others* dimension (β = -.26, p < .05)* *Parental age*[2]	Moderate stress predicted higher PTG on *new possibilities* (β = -.26, p < .05)*,* *personal strength (β = -.21, p < .05)*, *relating to others* (β = -.26, p < .01)** dimensions Attachment style: attachment anxiety negatively correlated with *personal strength* (r = -.22, p < .05)* and *spirituality* (r = -.23, p < .05)* PTG dimensions *Self-esteem*[2]	Maternal (grandmother's) emotional support positively correlated with all five dimensions (r = .32, p < .01)** RTO; (r = .27, p < .05)* NP; (r = .25, p < .01)** AOL; (r = .44, p < .01)** PS; (r = .23, p < .01)** SC), moderated by infant health status; only in low-risk babies on three dimensions (β = -.32, p < .05)* PS; (β = -.39, p < .05)* NP; (β = -.33, p < .05)* RTz	Infant health status: predicted higher PTG on *spirituality* (β = .26, p < .05)*

		Other variables related to PTG			
Study	**Levels of PTG *M* ± SD**	**Demographic factors**	**Psychological factors**	**Social factors**	**Event characteristics**
Taubman-Ben-Ari et al. (2010) *Israel*	PTGI Total[1]: 68.67 ± 14.91 Item mean: 3.27 ± 0.71 *PTGI subscales not reported*	None reported	None reported	Marital adaptation immediately after birth associated with higher PTG 1 year later (r = .30, p < .05)* *Maternal (grandmother's) emotional support[2]*	None reported
Vidaković & Ombla (2020) *Croatia*	PTGI Total: 68.74 ± 29.65 Item mean[1]: 3.27 ± 1.41 Range: 0–105 *PTGI subscales not reported*	None reported	Life satisfaction positively correlated (r = .23, p < .01)**	Social support: Instrumental family support positively correlated (r = .21, p < .01); and predicts PTG (β = -.35, p < .01) Emotional friend support positively correlated (r = .20, p < .01) Self-esteem friend support positively correlated (r = .20, p < .01) Informational friend support positively correlated (r = .20, p < .01)** Instrumental friend support positively correlated (r = .18, p < .05)* *Emotional family support[2], self-esteem family support[2], informational family support[2]*	Gestational age negatively correlated with PTG (r = -.18, p < .05)* NICU length of stay positively correlated with PTG (r = .21, p < .01)**

		Other variables related to PTG			
Study	**Levels of PTG *M* ± SD**	**Demographic factors**	**Psychological factors**	**Social factors**	**Event characteristics**
Wang et al. (2023) *China*	C-PTGI Total: 61.89 ± 17.89 Item mean: 3.09 ± 0.89 Range: 12–100 Five factor structure: Relating to others: 2.96 ± 1.04 New possibilities: 3.22 ± 0.95 Appreciation of life: 3.25 ± 1.01 Personal strength: 3.41 ± 0.99 Spiritual change: 2.58 ± 1.14	Parental age: predicted PTG (β = -.14, p < .01)**; PTG levels higher in parents aged 20–39 years, compared to <20 and >40 (p < .001)* Marital status: married status positively predicted PTG *(β = -.11, p < .05)*;* married parents reported significantly higher PTG compared to unmarried parents (p < .001)** Education: predicted PTG *(β = .14, p < .05)*,* more educated parents reported significantly higher PTG (p < .001)**	Rumination positively correlated (r = .43, p < .01)**; and deliberate rumination predicts PTG (β = .42, p < .001)***	Social support positively correlated (r = .42, p < .01)**; and family support positively predicts PTG (β = .17, p < .01)** Family resilience positively correlated (r = .44, p < .01)**; and positively predicts PTG (β = .26, p < .001)***	None reported

		Other variables related to PTG			
Study	**Levels of PTG *M* ± SD**	**Demographic factors**	**Psychological factors**	**Social factors**	**Event characteristics**
Wu et al. (2024) *China*	C-PTGI Total: 47.91 ± 12.75 Item mean: 2.40 ± 0.64 Five factor structure: Relating to others: 2.32 ± 0.76 New possibilities: 2.27 ± 0.75 Appreciation of life: 2.56 ± 0.71 Personal strength: 2.44 ± 0.75 Spiritual change: 2.31 ± 0.79 Mothers: 47.80 ± 13.09 Fathers: 47.98 ± 12.55 (p = .90)	None reported	Resilience positively correlated (r = .89, p < .01)**; and predicts PTG (β = .98, p < .001)*** Coping style: Positive coping positively correlated (r = .51, p < .01)**; and predicts PTG (β = .08, p < .05)* Negative coping negatively correlated with PTG (r = -.11, p < .01)**	Social support positively correlated with PTG (r = .51, p < .01)**; does not directly impact PTG (β = .01, p = .84); but can influence PTG through positive coping style (mediator; β = .02, p < .05)*	None reported
Xingyanan et al. (2025) *China*	C-PTGI Total: 66.41 ± 10.37 Item mean: 3.28 ± 0.51 Five factor structure: Relating to others: 3.00 ± 1.02 New possibilities: 2.90 ± 0.79 Appreciation of life: 3.47 ± 0.62 Personal strength: 3.36 ± 0.91 Spiritual change: 3.55 ± 0.77 Mothers: 62.60 ± 10.58 Fathers: 68.70 ± 9.58 (p < .01)**	*Parental role/sex[2], age[2], education level[2], significant disease history[2], monthly household income[2]*	Coping style positively predicts PTG (β = .37, p < .001)*** Positive coping positively correlated with PTG (r = .66, p < .01)** Negative coping negatively correlated with PTG (r = -.79, p < .01)**	Social support positively predicts PTG (β = .23, p < .001)*** Objective support positively correlated with PTG (r = .68, p < .01)** Subjective support positively correlated with PTG (r = .78, p < .01)** Support utilization positively correlated with PTG (r = .72, p < .01)**	Gestational age: predicts PTG (β = .28, p < .001)***; parents reported higher PTG with increased gestational age (p < .01)* Infant health status: Apgar score predicts PTG (β = .14, p < .05)*; parents reported higher PTG with increased Apgar score (p < .01)** *Multiple pregnancy[2]*

Note. * p < .05, ** p < .01, *** p < .001. Abbreviations: PTG = posttraumatic growth; PTGI = Posttraumatic Growth Inventory; NICU = neonatal intensive care unit.
[1] Calculated for the purpose of this review. [2] Indicates that no significant relationship was reported between this variable and PT

Methodological Quality

Two studies were rated "Good" (Newton-Bennett, 2022; Rozen et al., 2017), and the remainder "Fair" (Appendix A). All studies clearly described their aims and used established, psychometrically validated PTG instruments commonly employed in PTG research. However, this strength was offset by several methodological limitations. Six studies lacked sample-size justification and eight reported low or indeterminate response rates. One study used a repeated-measures design. Only three studies measured PTG at least two years post-birth (Newton-Bennett, 2022; Porat-Zyman et al., 2018; Vidaković & Ombla, 2020), the timeframe considered sufficient for PTG to fully emerge (Helgeson et al., 2006).

Levels of PTG

Item means ranged from 2.20 to 3.59, indicating small (n = 6*) to* moderate (n = 7) PTG. No study reported an item mean below 2.00, suggesting all samples demonstrated at least some PTG. Seven studies, conducted in China, Croatia, Israel, and Korea, reported means above 3.00 (Lee & Kang, 2020; Porat-Zyman et al., 2018; Rozen et al., 2017; Taubman-Ben-Ari et al., 2010; Vidaković & Ombla, 2020; Wang et al., 2023; Xingyanan et al., 2025). Six studies from the USA, UK, Lithuania, Australia, Turkey, and China reported means below 3.00 (Brelsford et al., 2020; Galpin, 2013; Jarašiūnaitė-Fedosejeva et al., 2024; Newton-Bennett, 2022; Okay & Güler, 2021; Wu et al., 2024). Four studies compared PTG levels in birthing and non-birthing parents: two reported higher PTG in birthing parents (Galpin, 2013; Okay & Güler, 2021), one in non-birthing parents (Xingyanan et al., 2025), and one reported no difference (Wu et al., 2024).

Demographic Factors

Six studies examined demographic factors related to PTG.

Parental Age (n = 6)

Younger age was associated with higher PTG in three studies (Newton-Bennett, 2022; Wang et al., 2023; Galpin, 2013), while one found older age predictive (Lee & Kang, 2020). Wang and colleagues (2023) reported a non-linear relationship, finding higher PTG in those aged 20–39. Two studies found no relationship (Rozen et al., 2017; Xingyanan et al., 2025).

Education (n = 4)

Findings were inconsistent. Lower education was associated with higher PTG in one study (Rozen et al., 2017), higher education in another (Wang et al., 2023), while two reported no association (Xingyanan et al., 2025; Galpin, 2013).

Other Factors

Single studies found that lower SES (Rozen et al., 2017), being married (Wang et al., 2023), and current employment (Lee & Kang, 2020) were associated with greater PTG, whereas minority ethnic status was associated with lower PTG (Newton-Bennett, 2022). Pre-existing parents' medical and mental health diagnoses showed no significant relationship.

Psychological Factors

Twelve studies explored psychological factors related to PTG.

Well-being (n = 2)

Two studies found higher psychological well-being to be associated with greater PTG (Newton-Bennett, 2022; Porat-Zyman et al., 2018), with the latter reporting that immediate well-being after birth was unrelated to PTG, whereas improvements in well-being over time were positively associated.

PTSS (n = 2)

Two studies found positive associations, with PTSS predicting PTG (Galpin, 2013; Jarašiūnaitė-Fedosejeva et al., 2024). The latter reported that shame-related negative self-evaluation moderated this relationship, decreasing PTG in parents of very preterm infants (<32 weeks' gestation).

Depression (n = 3)

Results were mixed. One study found a positive association (Galpin, 2013), another a negative association (with depression mediating links between relationship satisfaction, emotional dependency, and PTG; Okay & Güler, 2021), and one reported no relationship (Brelsford et al., 2020).

Stress (n = 3)

Findings varied; stress correlated positively with PTG in one study (Brelsford et al., 2020), moderate stress predicted higher PTG in another (Rozen et al., 2017), while no relationship was found in a third (Okay & Güler, 2021).

Rumination (n = 2)

Two studies found both intrusive (automatic, repetitive, and often distressing thoughts about the traumatic event) and deliberate (purposeful reflection to make sense of the experience) rumination correlated with PTG, with deliberate rumination emerging as a significant predictor (Galpin, 2013; Wang et al., 2023).

Coping (n = 2)

Two studies reported positive coping associated with higher PTG, and negative coping with lower PTG (Wu et al., 2024; Xingyanan et al., 2025).

Resilience (n = 2)

Both studies examining resilience found positive associations, with resilience also predicting PTG (Lee & Kang, 2020; Wu et al., 2024).

Other Factors

Single studies linked higher PTG to anxious attachment (Rozen et al., 2017), positive religious coping and sanctification of the parent–child relationship (Brelsford et al., 2020), greater life satisfaction (Vidaković & Ombla, 2020), relationship satisfaction and emotional dependency (Okay & Güler, 2021), and lower anxiety or shame-related self-evaluation (Okay & Güler, 2021; Jarašiūnaitė-Fedosejeva et al., 2024). Guilt, negative religious coping, and self-esteem showed no significant association.

Social Factors

Six studies examined social factors related to PTG.

Social Support (n = 5)

All five studies consistently found greater perceived support related to higher PTG (Lee & Kang, 2020; Vidaković & Ombla, 2020; Wang et al., 2023; Wu et al., 2024; Xingyanan et al., 2025). Effects were stronger for perceived (subjective) rather than actual (objective) support. One study found that social support acted indirectly on PTG through adaptive coping (Wu et al., 2024).

Grandmother's Emotional Support (n = 2)

Subfactor or wider social support, with mixed findings. One study found grandmother's emotional support to be associated with PTG in parents of medically lower-risk infants (Rozen et al., 2017), while another reported no effect (Taubman-Ben-Ari et al., 2010).

Other Factors

Spiritual disclosure (Brelsford et al., 2020), marital adaptation (Taubman-Ben-Ari et al., 2010), and family resilience (Wang et al., 2023) were each linked to higher PTG.

Event Characteristics

Six studies assessed event characteristics related to PTG.

Gestational Age (n = 4)

Three studies found that lower gestational age was associated with greater PTG (Galpin, 2013; Jarašiūnaitė-Fedosejeva et al., 2024; Vidaković & Ombla, 2020), with the association observed only for birthing parents in one study (Galpin, 2013). One study reported the opposite association, with higher gestational age linked to greater PTG (Xingyanan et al., 2025).

Infant Health Status (n = 5)

Findings were inconsistent. Poorer infant health was linked to higher PTG in three studies (Galpin, 2013; Rozen et al., 2017; Newton-Bennett, 2022), better health linked to greater PTG in one (Xingyanan et al., 2025), and no reported relationship in another (Jarašiūnaitė-Fedosejeva et al., 2024).

NICU Length of Stay (n = 4)

Three studies found longer stays associated with higher PTG (Galpin, 2013; Newton-Bennett, 2022; Vidaković & Ombla, 2020), one found no relationship (Lee & Kang, 2020). In one study, the association was observed only for birthing parents (Galpin, 2013).

Other Factors

Higher birth weight predicted PTG in one study (Galpin, 2013). No significant relationships with PTG were reported for birth order (n = 2) or multiple pregnancy (n = 1).

Across 13 studies, parents reported low-to-moderate PTG after preterm birth. Psychological and social resources (e.g., social support, coping, resilience, rumination) were most frequently examined and consistently showed associations with PTG. Demographic and event-related variables were examined less often and showed more mixed results.

Discussion

Posttraumatic growth (PTG) refers to positive psychological change that can occur following adversity (Tedeschi & Calhoun, 1995). This review synthesized quantitative evidence on factors associated with PTG in parents following preterm birth. Thirteen studies from diverse geographic and cultural settings examined demographic, psychological, social, and event-related factors. Across the included studies, parents typically reported small to moderate levels of PTG, suggesting that growth-related meaning-making is a commonly described response following preterm birth. Thirty-eight unique factors were assessed, of which 14 were replicated across more than one study. Methodological quality varied across studies, with two studies rated good and the remainder fair. This review highlights emerging patterns and factors that may be associated with PTG following preterm birth.

PTG levels varied across countries but did not align clearly with regional groupings. For instance, high PTG was observed in China and Croatia, despite distinct cultural and healthcare

systems, whereas lower scores were reported in countries such as the UK, USA, and Australia. In line with critiques of binary cultural classifications (Krys et al., 2024), this review does not group countries but considers sociocultural factors that may shape PTG. Previous research proposes that PTG is shaped by cultural frameworks, which influence coping, social support, and interpretations of adversity (Taku et al., 2021; Wadji et al., 2023). Cultures emphasizing community-based coping may facilitate PTG through collective meaning-making (Wlodarczyk et al., 2016). Religious beliefs may also promote PTG by reframing trauma as an opportunity for spiritual growth (Eames & O'Connor, 2022). Beyond culture, systemic factors such as perinatal health inequalities, access to quality maternity and neonatal care, and integration of mental health support may further explain variations (Barros et al., 2012; Womersley et al., 2021). However, as cultural context was not directly measured in the included studies, these interpretations should be considered hypothesis-generating rather than evidence-based conclusions.

Demographic factors, especially age and education, showed inconsistent associations with PTG, highlighting gaps in evidence. In contrast, psychological factors showed stronger and more consistent relationships. Several identified factors align with Tedeschi and Calhoun's (2004) functional-descriptive model, including parental well-being, deliberate rumination, and coping. The relationship between well-being and PTG underscores the potential of psychological interventions. Coping strategies also emerged as related factors: positive coping (problem-solving, seeking support) was associated with PTG, while avoidance was negatively related. These findings are consistent with resilience theory, which emphasizes adaptive coping after adversity (Joseph & Linley, 2006).

Posttraumatic stress symptoms (PTSS) were positively associated with PTG, consistent with other trauma contexts (Blix et al., 2013; Liu et al., 2017). This supports the idea that distress may activate cognitive processes such as rumination and meaning making (Tedeschi & Calhoun, 2004). However, PTSS in this context may stem from multiple sources, including childbirth, preterm delivery, and neonatal hospitalization, so it is challenging to isolate its specific role relevant to preterm birth. Associations with depression were mixed, echoing related reviews (Brandão et al., 2020; O'Toole et al., 2022). Findings on general stress were also inconsistent. These discrepancies suggest that while moderate distress may promote cognitive restructuring, severe distress may inhibit PTG, consistent with curvilinear models (Shakespeare-Finch & Lurie-Beck, 2014; Kleim & Ehlers, 2009).

Social factors were widely examined, with social support the most researched factor. Notably, parents' *perception* of support had a greater impact than its actual availability. By enabling parents to share and reconstruct narratives, social support helps them process emotional and cognitive challenges. The importance of social support in fostering PTG has been widely observed, especially in caregivers (Ning et al., 2023).

Event-related characteristics were also linked to PTG. Lower gestational age and longer hospitalization were positively associated with PTG. One possible explanation is that extended admissions allow stronger alliances with medical staff, fostering trust and support, as seen in pediatric intensive care (Yagiela et al., 2022). Some studies excluded extremely preterm infants (<28 weeks; Galpin, 2013), treating their parents as a distinct group. Research suggests parents of

higher birthweight infants may experience greater distress due to less support, whereas parents of lower birthweight infants may receive more acknowledgment of their challenges (Elklit et al., 2007).

Strengths and Limitations

This is the first systematic review to synthesize quantitative evidence on factors associated with PTG in parents following preterm birth. It included nine studies not covered by related reviews (Brandão et al., 2020; O'Toole et al., 2022). A key strength is the comprehensive search, which spanned multiple databases, included grey literature, and translated non-English articles to mitigate publication bias. While the findings are drawn from an international sample, the current evidence base does not include countries with the highest preterm birth rates (Southern Asia and Sub-Saharan Africa; World Health Organization, 2023), limiting generalizability. This is further compounded by the limited characteristics of the samples included in this review (predominantly married, well educated, ethnic majority, and of average to high socioeconomic status). Bereaved parents were not included in this review; although they may also experience posttraumatic growth, bereavement represents a qualitatively distinct experience requiring separate investigation.

Due to the heterogeneity of examined variables, a narrative synthesis was undertaken without a meta-analytic component, resulting in a primarily descriptive account of findings. The diversity of findings limits firm conclusions, as most factors were observed in only a few studies. Interpretation is further complicated by substantial heterogeneity in the timing of PTG assessment across studies, ranging from NICU admission to several years post-birth, which likely reflects different stages of the growth process and limits direct comparability of findings. Most studies were rated "fair," with concerns about bias. Small sample sizes may reduce statistical power, and low response rates raise the risk of non-response bias. Reliance on self-report may also introduce recall and social desirability biases.

Research and Clinical Implications

Future research should examine factors more consistently and replicate single-study findings, including in longitudinal designs. Representation of non-birthing parents should be improved. Cultural differences in parental roles and systemic health inequalities also warrant attention. Addressing these gaps would provide a more inclusive understanding of PTG and inform culturally sensitive interventions.

Clinically, interventions to promote PTG could be delivered antenatally, during neonatal admissions, or after discharge. Preliminary evidence suggests potential for mindfulness-based interventions (Ghaedi-Heidari et al., 2024), though future work should explore whether interventions can be tailored for diverse populations and embedded into current care pathways. Based on this review, clinicians should support coping, foster social connections, encourage deliberate rumination, and address distress. Event characteristics may help identify parents most in need of early support. These findings highlight the importance of care approaches that address parents' perceptions of safety, support, and control, which align closely with principles of

trauma-informed care. Policymakers should integrate PTG-supportive interventions into neonatal care, expand psychological provision, and address inequities in service access.

Conclusion

This systematic review synthesized quantitative evidence on factors associated with posttraumatic growth (PTG) in parents following preterm birth. Across 13 studies from nine countries, parents reported small-to-moderate PTG, indicating that many experience positive psychological change alongside significant distress. By focusing specifically on preterm birth and integrating demographic, psychological, social, and event-related correlates, this review extends previous work that combined heterogeneous pediatric populations or examined childbirth more broadly.

Psychological and social factors emerged as the most consistent correlates of PTG. Higher psychological well-being, resilience, deliberate rumination, and adaptive coping strategies were generally associated with greater growth, whereas avoidance-based coping and shame-related self-evaluation appeared to constrain it. Perceived social support, rather than objective support, showed a particularly robust relationship with PTG, reinforcing models that highlight the importance of cognitive processing and interpersonal contexts in transforming trauma into growth.

Associations with distress-related variables were more complex. Posttraumatic stress symptoms were positively related to PTG, while links with depression and general stress were mixed, consistent with the idea that moderate distress may facilitate meaning-making, whereas severe, persistent distress may inhibit growth. Event-related characteristics (e.g., lower gestational age, poorer infant health, longer NICU stays) were sometimes linked to higher PTG, possibly reflecting heightened opportunities for validation and reappraisal in the context of more evident adversity. Demographic factors were less frequently examined and yielded inconsistent findings, suggesting that their effects may be indirect or context dependent.

Methodological variability, reliance on self-report, and relatively homogeneous samples limit the strength and generalizability of conclusions. Future research should employ longitudinal designs, consistently assess core psychological, social, and event-related factors, and purposively include non-birthing parents and families from underrepresented cultural and socioeconomic contexts, particularly in regions with the highest preterm birth rates.

Clinically, the findings support integrating PTG-informed, trauma-aware care into neonatal and community services. Screening should encompass both distress and strengths, with interventions aimed at enhancing adaptive coping, fostering deliberate reflection, and strengthening social support. Event-related markers such as very early gestation or prolonged hospitalization may help identify parents needing early, proactive support. At a policy level, embedding psychological care within routine neonatal pathways and addressing inequities in access to perinatal mental health services are essential to ensure that all families have the opportunity not only to cope with preterm birth but also to experience growth.

References

Ayers, S., Wright, D. B., & Thornton, A. (2018). Development of a measure of postpartum PTSD: The City Birth Trauma Scale. *Frontiers in Psychiatry*, *9*(1). https://doi.org/10.3389/fpsyt.2018.00409

Baía, I., Amorim, M., Silva, S., Kelly-Irving, M., de Freitas, C., & Alves, E. (2016). Parenting very preterm infants and stress in Neonatal Intensive Care Units. *Early Human Development*, *101*, 3–9. https://doi.org/10.1016/j.earlhumdev.2016.04.001

Barros, A. J., Ronsmans, C., Axelson, H., Loaiza, E., Bertoldi, A. D., França, G. V., Bryce, J., Boerma, J. T., & Victora, C. G. (2012). Equity in maternal, newborn, and child health interventions in Countdown to 2015: a retrospective review of survey data from 54 countries. *The Lancet*, *379*(9822), 1225–1233. https://doi.org/10.1016/s0140-6736(12)60113-5

Bayrami, N., Rassouli, M., Farahani, A., Heidarzadeh, M., Khademi, F., Tajalli, S., Babaie, M., Masoum, A., & Hatamipour, K. (2023). Validation of post-traumatic growth inventory in mothers with the experience of having the NICU-Hospitalized newborns "validation of post-traumatic growth inventory." *Nursing Open*, *10*(8), 5406–5413. https://doi.org/10.1002/nop2.1779

Blix, I., Hansen, M. B., Birkeland, M. S., Nissen, A., & Heir, T. (2013). Posttraumatic growth, posttraumatic stress and psychological adjustment in the aftermath of the 2011 Oslo bombing attack. *Health and Quality of Life Outcomes*, *11*(1), 160. https://doi.org/10.1186/1477-7525-11-160

Brandão, T., Brites, R., Nunes, O., & Hipólito, J. (2020). Posttraumatic Growth after childbirth in women: A systematic review. *Journal of Clinical Psychology in Medical Settings*, *27*(2), 318–330. https://doi.org/10.1007/s10880-020-09720-w

Brelsford, G. M., Doheny, K. K., & Nestler, L. (2020). Parents' post-traumatic growth and spirituality post-neonatal intensive care unit discharge. *Journal of Psychology and Theology*, *48*(1), 34–43. https://doi.org/10.1177/0091647119856468

Brelsford, G. M., & Mahoney, A. (2008). Spiritual disclosure between older adolescents and their mothers. *Journal of Family Psychology*, *22*(1), 62–70. https://doi.org/10.1037/0893-3200.22.1.62

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). The Guilford Press.

Buunk, B. (1981). Jealousy in sexually open marriages. *Alternative Lifestyles*, *4*(3), 357–372. https://doi.org/10.1007/bf01257944

Cann, A., Calhoun, L. G., Tedeschi, R. G., Triplett, K. N., Vishnevsky, T., & Lindstrom, C. M. (2011). Assessing posttraumatic cognitive processes: the Event Related Rumination Inventory. *Anxiety, Stress & Coping*, *24*(2), 137–156. https://doi.org/10.1080/10615806.2010.529901

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396. https://doi.org/10.2307/2136404

Cohen, T. R., Wolf, S. T., Panter, A. T., & Insko, C. A. (2011). Introducing the GASP scale: A new measure of guilt and shame proneness. *Journal of Personality and Social Psychology*, *100*(5), 947–966. https://doi.org/10.1037/a0022641

Colville, G., & Pierce, C. (2012). Patterns of post-traumatic stress symptoms in families after paediatric intensive care. *Intensive Care Medicine*, *38*(9), 1523–1531. https://doi.org/10.1007/s00134-012-2612-2

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Dunst, C. J., Trivette, C. M., & Deal, A. G. (1988). *Enabling and Empowering Families*. Brookline Books.

Eames, C., & O'Connor, D. (2022). The role of repetitive thinking and spirituality in the development of posttraumatic growth and symptoms of posttraumatic stress disorder. *PLOS ONE*, *17*(8), e0272036. https://doi.org/10.1371/journal.pone.0272036

Elklit, A., Hartvig, T., & Christiansen, M. (2007). Psychological sequelae in parents of extreme low and very low birth weight infants. *Journal of Clinical Psychology in Medical Settings*, *14*(3), 238–247. https://doi.org/10.1007/s10880-007-9077-4

Exenberger, S., Kumnig, M., Juen, B., Rumpold, G., & Siller, H. (2019). Dimensions of posttraumatic growth in a German-speaking sample using mixed methods. *European Journal of Psychotraumatology*, *10*(1), 1701258. https://doi.org/10.1080/20008198.2019.1701258

Fowers, B. J., & Olson, D. H. (1989). "ENRICH" marital inventory: A discriminant validation assessment. *Journal of Marital and Family Therapy*, *15*(1), 65–79. https://doi.org/10.1111/j.1752-0606.1989.tb00777.x

Galea, M., Park, T., & Hegadoren, K. (2021). Improving mental health outcomes of parents of infants treated in neonatal intensive care units: A scoping review. *Journal of Neonatal Nursing*, *28*(5). https://doi.org/10.1016/j.jnn.2021.10.002

Galpin, J. (2013). *Posttraumatic stress and growth symptoms in parents of premature infants: The role of rumination type and social support.* Doctoral thesis, University of East Anglia.

Ghaedi-Heidari, F., Izadi, M., Seyedbagheri, S., Ahmadi, A., Sayadi, A., & Sadeghi, T. (2024). The effect of mindfulness on Posttraumatic Growth of mothers of premature infants Admitted to Neonatal Intensive Care Unit. *Journal of Clinical Psychology in Medical Settings*, *31*(1), 19–25. https://doi.org/10.1007/s10880-023-09961-5

Harrison Ginsberg, K., Serlachius, A., Rogers, J., & Alsweiler, J. (2023). Psychosocial support provided to parents of infants in neonatal intensive care units: An international survey. *Journal of Pediatrics*, 259. https://doi.org/10.1016/j.jpeds.2023.113456

Helgeson, V. S., Reynolds, K. A., & Tomich, P. L. (2006). A meta-analytic review of benefit finding and growth. *Journal of Consulting and Clinical Psychology*, *74*(5), 797–816. https://doi.org/10.1037/0022-006x.74.5.797

Hendrick, S. S., Dicke, A., & Hendrick, C. (1998). The Relationship Assessment Scale. *Journal of Social and Personal Relationships*, *15*(1), 137–142. https://doi.org/10.1177/0265407598151009

Jansen, L., Hoffmeister, M., Chang-Claude, J., Brenner, H., & Arndt, V. (2011). Benefit finding and post-traumatic growth in long-term colorectal cancer survivors: Prevalence, determinants, and associations with quality of life. *British Journal of Cancer*, *105*(8), 1158–1165. https://doi.org/10.1038/bjc.2011.335

Jarašiūnaitė-Fedosejeva, G., Kniežaitė, J., Sakalauskienė, E., Ayers, S., Bogaerts, A., & Riklikienė, O. (2024). Guilt- and shame-proneness, birth-related posttraumatic stress and posttraumatic growth in women with preterm birth. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *61*, 1–16. https://doi.org/10.1177/00469580241299604

Joseph, S., Andrews, B., Williams, R., & Yule, W. (1992). Crisis support and psychiatric symptomatology in adult survivors of the Jupiter cruise ship disaster. *British Journal of Clinical Psychology*, *31*(1), 63–73. https://doi.org/10.1111/j.2044-8260.1992.tb00968.x

Joseph, S., & Linley, P. A. (2006). Growth following adversity: Theoretical perspectives and implications for clinical practice. *Clinical Psychology Review*, *26*(8), 1041–1053. https://doi.org/10.1016/j.cpr.2005.12.006

Kashyap, S., & Hussain, D. (2018). Cross-cultural challenges to the construct "Posttraumatic Growth." *Journal of Loss and Trauma*, *23*(1), 51–69. https://doi.org/10.1080/15325024.2017.1422234

Kleim, B., & Ehlers, A. (2009). Evidence for a curvilinear relationship between posttraumatic growth and posttrauma depression and PTSD in assault survivors. *Journal of Traumatic Stress*, *22*(1), 45–52. https://doi.org/10.1002/jts.20378

Krys, K., Igor de Almeida, Arkadiusz Wasiel, & Vignoles, V. L. (2024). WEIRD–Confucian comparisons: Ongoing cultural biases in psychology's evidence base and some recommendations for improving global representation. *American Psychologist*, *80*(2). https://doi.org/10.1037/amp0001298

Laccetta, G., Di Chiara, M., De Nardo, M. C., & Terrin, G. (2023). Symptoms of post-traumatic stress disorder in parents of preterm newborns: A systematic review of interventions and prevention strategies. *Frontiers in Psychiatry*, *8*(14). https://doi.org/10.3389/fpsyt.2023.998995

Lee, H. S., & Kang, S. J. (2020). Factors influencing Post-traumatic Growth in mothers with premature infants admitted to the Neonatal Intensive Care Unit. *Child Health Nursing Research*, *26*(2), 267–276. https://doi.org/10.4094/chnr.2020.26.2.267

Legge, N., Popat, H., & Fitzgerald, D. (2023). Examining the impact of premature birth on parental mental health and family functioning in the years following hospital discharge: A review. *Journal of Neonatal-Perinatal Medicine*, *16*(2), 195–208. https://doi.org/10.3233/npm-221107

Liu, A.-N., Wang, L.-L., Li, H.-P., Gong, J., & Liu, X.-H. (2017). Correlation between Posttraumatic Growth and Posttraumatic Stress Disorder symptoms based on Pearson Correlation Coefficient. *The Journal of Nervous and Mental Disease*, *205*(5), 380–389. https://doi.org/10.1097/nmd.0000000000000605

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the depression anxiety stress scales* (2nd ed.). Psychology Foundation of Australia.

Macdonald, G. (1998). Development of a Social Support Scale: An evaluation of psychometric properties. *Research on Social Work Practice*, *8*(5), 564–576. https://doi.org/10.1177/104973159800800505

Mahoney, A., Pargament, K. I., Jewell, T., Swank, A. B., Scott, E., Emery, E., & Rye, M. (1999). Marriage and the spiritual realm: The role of proximal and distal religious constructs in marital functioning. *Journal of Family Psychology*, *13*(3), 321–338. https://doi.org/10.1037/0893-3200.13.3.321

Malloy, M. H., & Wang, L. K. (2022). The limits of viability of extremely preterm infants. *Proceedings (Baylor University. Medical Center)*, *35*(5), 731–735. https://doi.org/10.1080/08998280.2022.2071073

Nelson, C. A., Bhutta, Z. A., Burke Harris, N., Danese, A., & Samara, M. (2020). Adversity in childhood is linked to mental and physical health throughout life. *BMJ*, *371*(371). https://doi.org/10.1136/bmj.m3048

Newton-Bennett, I. (2022). *Maternal wellbeing and posttraumatic growth following preterm birth*. Thesis, University of Tasmania. https://doi.org/10.25959/23247443.v2

Ning, J., Tang, X., Shi, H., Yao, D., Zhao, Z., & Li, J. (2023). Social support and posttraumatic growth: A meta-analysis. *Journal of Affective Disorders*, *320*, 117–132. https://doi.org/10.1016/j.jad.2022.09.114

Noy, A., Taubman - Ben-Ari, O., & Kuint, J. (2015). Well-being and personal growth in mothers of full-term and pre-term singletons and twins. *Stress and Health*, *31*(5), 365–372. https://doi.org/10.1002/smi.2560

O'Toole, S., Suarez, C., Adair, P., McAleese, A., Willis, S., & McCormack, D. (2022). A systematic review of the factors associated with Post-Traumatic Growth in parents following admission of their child to the Intensive Care Unit. *Journal of Clinical Psychology in Medical Settings*, *29*, 509–537. https://doi.org/10.1007/s10880-022-09880-x

Obeidat, H. M., Bond, E. A., & Callister, L. C. (2009). The parental experience of having an infant in the Newborn Intensive Care Unit. *Journal of Perinatal Education*, *18*(3), 23–29. https://doi.org/10.1624/105812409x461199

Ohuma, E. O., Moller, A.-B., Bradley, E., Chakwera, S., Hussain-Alkhateeb, L., Lewin, A., Okwaraji, Y. B., Mahanani, W. R., Johansson, E. W., Lavin, T., Fernandez, D. E., Domínguez, G. G., de Costa, A., Cresswell, J. A., Krasevec, J., Lawn, J. E., Blencowe, H., Requejo, J., & Moran, A. C. (2023). National, regional, and global estimates of preterm birth in 2020, with trends from 2010: a systematic analysis. *Lancet (London, England)*, *402*(10409), 1261–1271. https://doi.org/10.1016/S0140-6736(23)00878-4

Okay, İ., & Yavuz Güler, Ç. (2021). Relationship dynamics: the protective effect of relationship satisfaction and dependency on parents' mental health after having a preterm baby. *Health Psychology Report*, *9*(4), 372–387. https://doi.org/10.5114/hpr.2021.108307

Pace, C. C., Spittle, A. J., Molesworth, C. M.-L. ., Lee, K. J., Northam, E. A., Cheong, J. L. Y., Davis, P. G., Doyle, L. W., Treyvaud, K., & Anderson, P. J. (2016). Evolution of depression and anxiety symptoms in parents of very preterm infants during the newborn period. *JAMA Pediatrics*, *170*(9), 863. https://doi.org/10.1001/jamapediatrics.2016.0810

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., & McGuinness, L. A. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *British Medical Journal*, *372*(71). https://doi.org/10.1136/bmj.n71

Pang, H. (2021). *A study on the correlation between post-traumatic growth of parents of premature infants and personality traits and psychological congruence*. Doctoral dissertation, Guangxi University of Traditional Chinese Medicine. Chinese.

Pargament, K., Feuille, M., & Burdzy, D. (2011). The Brief RCOPE: Current Psychometric Status of a Short Measure of Religious Coping. *Religions*, *2*(1), 51–76. https://doi.org/10.3390/rel2010051

Perin, J., Mulick, A., Yeung, D., Villavicencio, F., Lopez, G., Strong, K. L., Prieto-Merino, D., Cousens, S., Black, R. E., & Liu, L. (2021). Global, regional, and national causes of under-5 mortality in 2000–19: An updated systematic analysis with implications for the Sustainable Development Goals. *The Lancet Child & Adolescent Health*, *6*(2). https://doi.org/10.1016/s2352-4642(21)00311-4

Porat-Zyman, G., Taubman – Ben-Ari, O., Kuint, J., & Morag, I. (2018). Personal growth 4 years after premature childbirth: The role of change in maternal mental health. *Journal of Happiness Studies*, *20*(6), 1739–1750. https://doi.org/10.1007/s10902-018-0012-1

Radloff, L. S. (1977). The CES-D Scale: A Self-Report Depression Scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Rosenberg, M. (1979). *Conceiving the self*. Basic Books.

Rozen, G., Taubman – Ben-Ari, O., Strauss, T., & Morag, I. (2017). Personal growth of mothers of preterms: Objective severity of the event, subjective stress, personal resources, and maternal emotional support. *Journal of Happiness Studies*, *19*(7), 2167–2186. https://doi.org/10.1007/s10902-017-9915-5

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, *69*(4), 719–727. https://doi.org/10.1037/0022-3514.69.4.719

Sawyer, A., & Ayers, S. (2009). Post-traumatic growth in women after childbirth. *Psychology & Health*, *24*(4), 457–471. https://doi.org/10.1080/08870440701864520

Shakespeare-Finch, J., & Lurie-Beck, J. (2014). A meta-analytic clarification of the relationship between posttraumatic growth and symptoms of posttraumatic distress disorder. *Journal of Anxiety Disorders*, *28*(2), 223–229. https://doi.org/10.1016/j.janxdis.2013.10.005

Sixbey, M. T. (2006). Family Resilience Assessment Scale. *PsycTESTS Dataset*. https://doi.org/10.1037/t58070-000

Smith, L. K., Blankenstein, E. van, Fox, G., Seaton, S. E., Martínez-Jiménez, M., Petrou, S., Battersby, C., & Group, M.-U. P. S. (2023). Effect of national guidance on survival for babies born at 22 weeks' gestation in England and Wales: population based cohort study. *BMJ Medicine*, *2*(1). https://doi.org/10.1136/bmjmed-2023-000579

Song, S., Kim, K., Lee, H., & Park, J. (2009). Validity and reliability of the Korean version of the Posttraumatic Growth Inventory. *Korean Journal of Health Psychology*, *14*(1), 193–214. https://doi.org/10.17315/kjhp.2009.14.1.012

Taku, K., Tedeschi, R. G., Shakespeare-Finch, J., Krosch, D., David, G., Kehl, D., Grunwald, S., Romeo, A., Di Tella, M., Kamibeppu, K., Soejima, T., Hiraki, K., Volgin, R., Dhakal, S., Zięba, M., Ramos, C., Nunes, R., Leal, I., Gouveia, P., & Silva, C. C. (2021). Posttraumatic growth (PTG) and posttraumatic depreciation (PTD) across ten countries: Global validation of the PTG-PTD theoretical model. *Personality and Individual Differences*, *169*, 110222. https://doi.org/10.1016/j.paid.2020.110222

Taubman-Ben-Ari, O., & Spielman, V. (2014). Personal growth following the first child's birth: A comparison of parents of pre- and full-term babies. *Social Work Research*, *38*(2), 91–106. https://doi.org/10.1093/swr/svu011

Taubman–Ben-Ari, O., Findler, L., & Kuint, J. (2010). Personal Growth in the wake of stress: The case of mothers of preterm twins. *The Journal of Psychology*, *144*(2), 185–204. https://doi.org/10.1080/00223980903472268

Taubman–Ben-Ari, O., Findler, L., & Sharon, N. (2011). Personal Growth in mothers: Examination of the suitability of the Posttraumatic Growth Inventory as a measurement tool. *Women & Health*, *51*(6), 604–622. https://doi.org/10.1080/03630242.2011.614324

Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma & transformation: growing in the aftermath of suffering*. Sage Publications.

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, *9*(3), 455–471. https://doi.org/10.1007/bf02103658

Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, *15*(1), 1–18. https://doi.org/10.1207/s15327965pli1501_01

Thomson, G., Nowland, R., & Feeley, C. (2022). Psychosocial support provision for parents: An audit of UK neonatal units. *Infant*, 18(3), 118–122.

Veit, C. T., & Ware, J. E. (1983). The structure of psychological distress and well-being in general populations. *Journal of Consulting and Clinical Psychology*, *51*(5), 730–742. https://doi.org/10.1037/0022-006x.51.5.730

Vidaković, M., & Ombla, J. (2020). Premature birth: Social support as a predictor of positive and negative aspects of maternal well-being. *Croris.hr*, 231–244. https://www.croris.hr/crosbi/publikacija/prilog-knjiga/68056

Wadji, D., Oe, M., Bartoli, E., Martin-Soelch, C., Pfaltz, M. C., & Langevin, R. (2023). How are experiences and acceptability of child maltreatment related to resilience and posttraumatic growth: A cross cultural study. *European Journal of Psychotraumatology*, *14*(2). https://doi.org/10.1080/20008066.2023.2264119

Wang, F., Zhang, S., Liu, C., & Ni, Z. (2023). Post-traumatic growth and influencing factors among parents of premature infants: a cross-sectional study. *BMC Psychology*, *11*(1). https://doi.org/10.1186/s40359-023-01360-7

Wang, J. (2011). *Development of posttraumatic growth rating scale and its norm for accidental trauma*. Doctoral dissertation, Second Military Medical University. Chinese.

Weiss, D. S., & Marmar, C. R. (1997). The Impact of Event Scale—Revised. In J. P. Wilson & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD* (pp. 399–411). The Guilford Press.

Wlodarczyk, A., Basabe, N., Páez, D., Amutio, A., García, F. E., Reyes, C., & Villagrán, L. (2016). Positive effects of communal coping in the aftermath of a collective trauma: The case of the 2010 Chilean earthquake. *European Journal of Education and Psychology*, *9*(1), 9–19. https://doi.org/10.1016/j.ejeps.2015.08.001

Womersley, K., Ripullone, K., & Hirst, J. E. (2021). Tackling inequality in maternal health: Beyond the postpartum. *Future Healthcare Journal*, *8*(1), 31–35. https://doi.org/10.7861/fhj.2020-0275

World Health Organization. (2023, May 10). *Preterm birth*. https://www.who.int/news-room/fact-sheets/detail/preterm-birth

Wu, L., Pan, Y., Zheng, Q., Chen, X., Jiang, X., Lin, Y., & Liu, G. (2024). Post traumatic growth, resilience, social support and coping styles in the parents of very low birth weight infants: A multi-center cross sectional study. *Research Square (Preprint)*. https://doi.org/10.21203/rs.3.rs-4440727/v1

Xie, Y. (1998). Reliability and validity of the simplified Coping Style Questionnaire. *Chinese Journal of Clinical Psychology*, *6*(2), 114–115.

Xingyanan, W., Yuanhong, L., Yang, L., & Zhitian, X. (2025). A cross-sectional study on posttraumatic growth and influencing factors among parents of premature infants. *BMC Pregnancy and Childbirth*, *25*(1). https://doi.org/10.1186/s12884-025-07137-7

Yagiela, L. M., Edgar, C. M., Harper, F. W. K., & Meert, K. L. (2022). Parent post-traumatic growth after a child's critical illness. *Frontiers in Pediatrics*, *10*. https://doi.org/10.3389/fped.2022.989053

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2

Appendix A

Quality Appraisal of Included Studies

Study	Q1 Research question	Q2 Study population	Q3 Ppt. rate	Q4 Recruitment	Q5 Sample justify	Q6 Exposure assessed	Q7 Sufficient timeframe	Q8 Levels of exposure	Q9 Exposure measures	Q10 Repeated assess.	Q11 Outcome measures	Q12 Blinding	Q13 Follow-up rate	Q14 Stats. Analyses	Rating
Brelsford et al. (2020)	Yes	Yes	No	Yes	No	No	No	No	Yes	NA	Yes	NA	NA	Yes	**Fair**
Galpin (2013)	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	NA	Yes	NA	NA	Yes	**Fair**
Jarašiūnaitė-Fedosejeva et al. (2024)	Yes	Yes	CD	Yes	Yes	No	No	Yes	Yes	NA	Yes	NA	NA	Yes	**Fair**
Lee & Kang (2020)	Yes	Yes	CD	Yes	Yes	No	No	No	No	NA	Yes	NA	NA	Yes	**Fair**
Newton-Bennett (2022)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	NA	Yes	NA	NA	Yes	**Good**
Okay & Güler (2021)	Yes	Yes	No	Yes	No	No	No	No	Yes	NA	Yes	NA	NA	Yes	**Fair**
Porat-Zyman et al. (2018)	Yes	Yes	CD	Yes	No	Yes	Yes	No	Yes	Yes	Yes	NA	No	Yes	**Fair**
Rozen et al. (2017)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	NA	Yes	Yes	**Good**
Taubman-Ben-Ari et al. (2010)	Yes	No	Yes	NR	No	Yes	No	No	No	No	Yes	NA	Yes	Yes	**Fair**

Study	Q1 Research question	Q2 Study population	Q3 Ppt. rate	Q4 Recruitment	Q5 Sample justify	Q6 Exposure assessed	Q7 Sufficient timeframe	Q8 Levels of exposure	Q9 Exposure measures	Q10 Repeated assess.	Q11 Outcome measures	Q12 Blinding	Q13 Follow-up rate	Q14 Stats. Analyses	Rating
Vidaković & Ombla (2020)	Yes	Yes	CD	Yes	No	No	Yes	No	Yes	NA	Yes	NA	NA	No	**Fair**
Wang et al. (2023)	Yes	Yes	Yes	Yes	No	No	No	No	Yes	NA	Yes	NA	NA	Yes	**Fair**
Wu et al. (2024)	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	NA	Yes	NA	NA	No	**Fair**
Xingyanan et al. (2025)	Yes	Yes	NR	Yes	Yes	No	No	No	Yes	NA	Yes	NA	NA	Yes	**Fair**

The Association for Prenatal and Perinatal Psychology and Health
Journal of Prenatal & Perinatal Psychology & Health
ISSN: 1097-8003
Vol. 40 No. 1 Spring 2026
https://doi.org/10.62858/apph260503

Prenatal Bonding (BA) as a Breakthrough in Improving Pregnancy, Birth, and Postpartum Outcomes

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Prenatal Bonding (BA) is a method of supporting pregnancy that enables a pregnant mother to connect with her unborn child and opens the possibility of mutual communication between the gestational parent and her yet-to-be-born baby. Over time, these communications develop patterns that result in a growing sense of emotional connection, enabling them to experience birth together as a team, something that had never been considered possible by most people, including birth professionals, medical healthcare providers, and psychologists. This retrospective study reviewed the birth outcomes of 295 women who received this method of support during their pregnancies. Results showed that after Prenatal Bonding (BA) facilitation, the need for birth interventions and Cesarean sections are reduced, and breastfeeding rates are increased, while preterm birth, postpartum depression, and infantile colic are exceedingly rare. Because they have already created a connection, the postpartum period becomes a new phase of an existing relationship.

Keywords: bonding, colic babies, pregnancy, prenatal, preterm birth, postpartum depression

Medical advances over the last several decades have improved the safety of pregnancy, birth, and early infancy. However, maternal and infant mortality rates have not decreased at the rate needed to meet UNICEF's Sustainable Developmental Goals for 2030 (UNFPA, 2019; UNICEF, 2023), indicating that more can be done to optimize maternal and infant care. Researchers have established the connection between mental and physical well-being, and a growing body of research has applied this knowledge to pregnancy and birth. Kennell and Klaus demonstrated that

The authors have no funding to disclose. Anne Goertz-Schroth is an educator, social worker, instructor, doula, provider for pregnancy and birth support, and trainer for Prenatal Bonding (BA). Gerhard Schroth, MD, is a psychiatrist, psychoanalyst, author, presenter, and mentor for International Prenatal Bonding (BA) trainings. Raylene Phillips, MD, MA, FAAP, FABM, IBCLC, is a neonatologist, infant-developmental specialist, lactation consultant, author, presenter, and student of Prenatal Bonding (BA). Anne Goertz-Schroth and Gerhard Schroth, MD, offer paid training in Prenatal Bonding (BA). This relationship may be perceived as a potential conflict of interest. The authors declare that this did not influence the study design, data collection, analysis, interpretation, or reporting. Acknowledgments: The authors thank Jenoe Raffai and Gyoergy Hidas for their contributions to the development of Prenatal Bonding (BA), as well as the colleagues who supported this research project through their evaluations. This is a revised reprint of the study originally published in 2023. Please send correspondence to Dr. Phillips: rphillips@llu.edu

the presence of a support person during labor is associated with a significant reduction in Cesarean birth rates (Kennell et al., 1991). Fredrick Leboyer advocated for seeing birth from the baby's perspective and adjusting birth practices to support the baby in a gentle and non-violent birth (Conley, 2010). Bowlby and Ainsworth developed a theory of attachment and researched the effects of secure and insecure mother-infant attachment in infants and toddlers (Bretherton, 1992). Phillips has described how uninterrupted skin-to-skin contact immediately after vaginal and Cesarean births supports mother-infant bonding and is associated with increased breastfeeding initiation rates, which are well-documented to improve maternal and infant outcomes (Centers for Disease Control and Prevention [CDC], 2021; Phillips, 2012, 2013). Increasing evidence demonstrates maternal mental health during pregnancy has direct effects on fetal and child development (Jeličić et al., 2022; Molenaar et al., 2019; Simons et al., 2019; Van den Bergh et al., 2020; Wu et al., 2022).

For almost 100 years, a focus on prenatal and perinatal psychology has shown that understanding and supporting maternal and infant mental health, even before birth, improves birth outcomes (Evertz et al., 2021; Janus, 2021). In the 1970s, Thomas Verny, a Canadian psychiatrist, and David Chamberlain, a United States psychologist, discovered in their separate therapeutic settings that many children and adults have memories from before, during, and after birth—often with profound long-term effects on their lives (Chamberlain, 1988; Verny & Kelly, 1981). Verny and Chamberlain independently discovered that when traumatic prenatal, birth, or infant experiences were revealed from the unconscious memory through hypnosis and other therapeutic techniques, mental health pathologies related to these traumas often resolved. The knowledge that prenatal and birth memories are stored in the unconscious mind and body memory was groundbreaking and led to new modalities of early preverbal trauma resolution.

This knowledge, in addition to providing new information about the prenatal mind, also raised awareness that an emotional connection between the pregnant mother and the unborn child is possible. It has been known since the 1990s that maternal-child bonding and attachment are critical to normal development (Bretherton, 1992). It was previously assumed, however, that bonding and attachment can only begin after birth. The paradigm-shifting knowledge that emotional connections can begin before birth opened the door to new, previously unimagined ways to support pregnancy, birth, and early postnatal development of the child and the family. Prenatal care providers began encouraging pregnant mothers to talk and sing to their babies and to visualize their babies growing and developing within their wombs. This interaction was initially assumed to be one-directional. Many mothers felt empowered to communicate with their babies, but few suspected they could communicate with them and receive communication back from their unborn babies while still within their wombs.

In the late 20th century, the Hungarian psychologist and psychoanalyst Jenoe Raffai, PhD and the Hungarian psychiatrist and psychoanalyst György Hidas, MD, developed a method of supporting pregnancies based on principles of psychoanalysis, naming their method initially Bonding Analysis, and later Prenatal Bonding (BA). This program enables a pregnant person to connect with their unborn child and opens the possibility of mutual communication between the

parent and their yet-to-be-born baby. In Prenatal Bonding (BA), parents and their unborn child can develop a deep inner relationship long before birth, enabling them to experience birth together as a team—something that had not before been considered possible by most birth professionals, healthcare providers, and psychologists. Feedback from the baby can even direct attention to problems in the pregnancy and lead to medical examination and intervention (Hidas et al., 2002; Schroth, 2021).

A Prenatal Bonding (BA) facilitation involves a thorough physical and psychological history of both parents. It seeks to identify, acknowledge, and clarify intergenerational traumas, beliefs, and ideologies that negatively affect pregnancy, birth, and parenting. Mothers (and birth partners) are guided in deep relaxation exercises and supported in connecting with their unborn baby in whatever way they and their baby choose. During these sessions, parents often experience mutual communication with their baby through feelings, body sensations, imagery, thoughts, or the baby's movements. Over time, these communications develop patterns, resulting in a growing emotional connection. By the time of birth, most mothers feel they already know their baby and understand their baby's personality. Because they have already created a connection, mothers find their newborns easy to feed and soothe. The postpartum period becomes a new phase of an already developed relationship (Schroth, 2021).

Raffai and Hidas used Prenatal Bonding (BA) facilitations since 1986 to support over 4350 pregnant mothers. Birth outcomes were noted to be strikingly positive but were never systematically tracked. After being trained by Raffai and Hidas, Gerhard Schroth, MD, and Anne Goertz-Schroth have been using Prenatal Bonding (BA) in Dr. Schroth's psychiatric practice in Germany and have also been teaching the method in Europe and the United States since 2011. More than 10,000 pregnancies have been facilitated by trained, certified Prenatal Bonding (BA) professionals in many countries across Europe and the United States (Schroth, personal communication, 2023). In this retrospective study, we report the most extensive quantitative and qualitative data about Prenatal Bonding (BA) birth outcomes collected to date.

Methods

Evaluation questionnaires were used to collect reliable data on birth outcomes after Prenatal Bonding (BA) facilitations with one-hour follow-up interviews one month and six months after the birth. Mothers who participated in Prenatal Bonding (BA) gave voluntary consent to share data from the de-identified questionnaires. The first evaluation documented when the facilitation began, how many sessions were completed, gestational age at birth, place of birth, duration, and course of labor, use of medications and obstetric interventions during delivery, mode of delivery, postnatal behavior of the baby (e.g., sleeping and crying pattern), the progress of breastfeeding, the mother's subjective experiences with the baby, symptoms of postpartum depression, and the mother's self-reported rating of her experience with Prenatal Bonding (BA).

The second evaluation, done six months after the baby's birth, assessed the baby's further development, including the baby's sleeping pattern, crying, behavior, and motor skills, any illnesses, breastfeeding history, the mother's subjective experiences with the postpartum period

and expectations for the future, symptoms of postpartum depression, and the mother's self-reported rating of her experience with Prenatal Bonding (BA).

Outcomes of 295 Prenatal Bonding (BA) facilitations done by 45 Prenatal Bonding (BA)-certified colleagues were analyzed retrospectively. The professional backgrounds of facilitators varied widely, including midwives, gynecologists, psychotherapists, social workers, educators, and doulas who worked in settings of prenatal care, obstetrics, family counseling, and medicine. Working with pregnant women was their common professional experience. The facilitations were conducted in various cultural settings, including Germany, Switzerland, Austria, and France.

The 295 facilitations with Prenatal Bonding (BA) from 2017 through 2020 included 64 facilitations from 2017, 27 from 2018, 90 from 2019, and 74 from 2020. Facilitations were included in the analysis if they had a minimum of 12 sessions (range 12–29, average 19) and had completed the follow-up evaluations at 1 and 6 months after birth.

Results

Preterm Births

In this cohort of pregnant mothers (295), 292 women (99%) gave birth to full-term babies (37^{th}–42^{nd} week gestation), while 3 (1%) of babies were born preterm. Of the preterm births, two mothers (0.7%) gave birth in the 36^{th} week, and 1 (0.3%) gave birth in the 34^{th} week of pregnancy.

Mode of Birth

After Prenatal Bonding (BA), 227 women (77%) began labor spontaneously, and 94 women (32%) gave birth with no medication or any other obstetric interventions. A total of 242 women (82%) gave birth vaginally, while a Cesarean section was clinically indicated for 53 births (18%).

Place of Birth

A total of 261 births (88.5%) occurred in a hospital, 30 births (10.2%) occurred in a home setting, and 4 births (1.3%) occurred in freestanding birth clinics.

Breastfeeding

After Prenatal Bonding (BA), 292 mothers (99%) successfully initiated breastfeeding. Only 3 women (1%) could not breastfeed after giving birth. Another 15 women (5%) could breastfeed partially, meaning they breastfed with supplemental feeding or breastfed for less than six months. At six months of age, 277 babies (94%) were still breastfed.

Infant Crying and Infantile Colic

Only 1 baby (0.3%) in 295 facilitated cases met the criteria for infantile colic. In 2 cases (0.7%), crying for 30–60 minutes per day occurred for the first few weeks.

Postpartum Depression

After Prenatal Bonding (BA) facilitation, 292 women (99%) were completely free from any symptoms of postpartum depression. Three mothers (1%) had some characteristics or symptoms of postpartum depression.

Baby Blues

Eighteen mothers (6%) experienced symptoms of baby blues for less than two weeks, while 277 mothers (94%) of mothers were free from any symptoms of baby blues.

Discussion

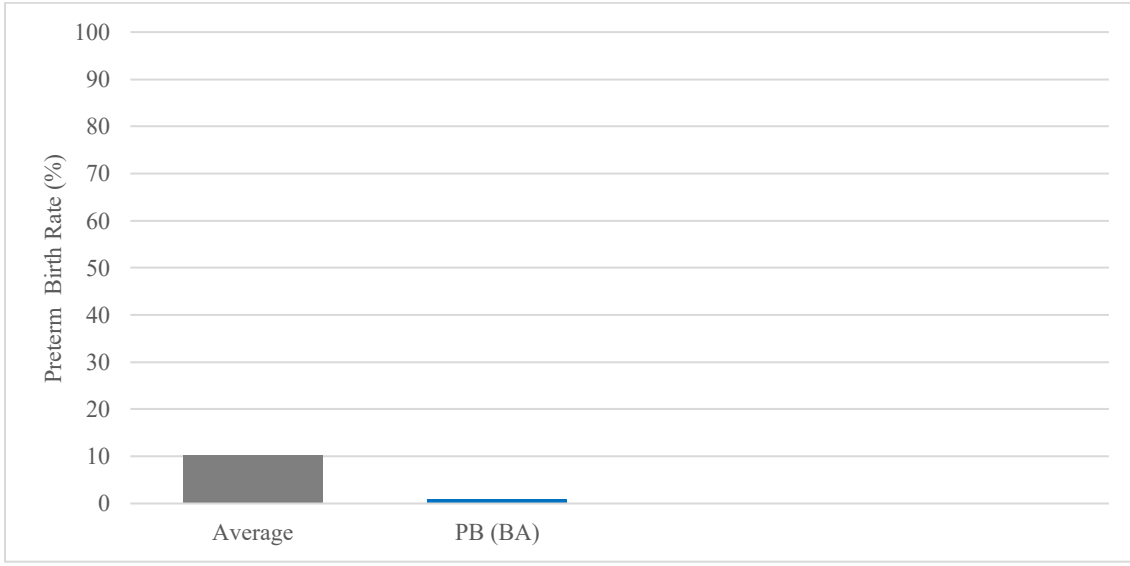
This retrospective study consistently found improved maternal and infant birth outcomes in mother-baby dyads who had experienced Prenatal Bonding (BA) facilitation compared to averages found in other studies.

Preterm Births

In this cohort of 295 facilitated pregnant mothers, 99% gave birth to full-term babies (37th–42nd week gestation), while only 1% were born preterm (see Figure 1). In the earliest birth (34 weeks gestation), there were multiple uterine surgeries in the mother's medical history. For comparison, rates of preterm births in Europe range from 5.3% to 14.7%. In Germany in 2017, the rate was 8.6% (Berger et al., 2019). In the United States, 1 in 10 babies (10.2 %) was born preterm in 2019 (March of Dimes, 2022).

Figure 1

Preterm Birth Rate: Average United States vs. Prenatal Bonding (BA)



In Germany and many European countries, preterm birth rates have not decreased for almost ten years. Clinical-scientific research thus far has focused on identifying medical risk factors and their prevention. Many risk factors can be avoided by counseling pregnant women at the start of prenatal care, by maternal lifestyle changes, and by reducing stress during pregnancy, but none of these interventions are completely effective in preventing preterm birth (Berger et al., 2019).

Preterm birth continues to be a major problem in perinatal medicine. It is defined as a birth before 37 completed weeks of gestation. To better appreciate the significance of reducing preterm birth rates, it is helpful to focus on the consequences of preterm birth in general. Preterm birth is the leading cause of death among children accounting for 18% of deaths in children younger than five years of age and 35% of infant deaths in the first month (28 days) after birth (Walani, 2020). Morbidity and mortality rates vary by country but universally increase with decreasing birth gestational age (Bell et al., 2022; Manuck et al., 2016). Premature births often require care in a Neonatal Intensive Care Unit (NICU) for days, weeks, or months. This can present a massive psychosocial burden for affected families with significantly higher rates of posttraumatic stress disorder and anxiety than the general population and a substantial financial burden for families and the healthcare system (Malouf et al., 2021; Walani, 2020).

Because premature infants usually require immediate medical interventions, skin-to-skin contact between mother and newborn in the first hour after birth is usually not possible. Uninterrupted skin-to-skin contact with the mother is important for physiologic stability, bonding, and breastfeeding, all of which support the child's optimal physical and emotional development (Phillips, 2013). Preterm infants in the NICU are exposed to multiple medical and care interventions daily, many of which are painful and most of which are stressful. Parents and infants are often separated, adding to the physiologic and emotional stress on babies and parents (Morgan et al., 2011).

In addition to the short-term consequences after preterm birth, there are often severe long-term consequences. Infants born prematurely have a significantly higher risk of being diagnosed with attention deficit disorder as children and adults (Murray, 2016; Perapoch et al., 2021; Robinson et al., 2022). Children and adults born prematurely can often have difficulties coping with transitional life events, and parents often continue to worry about their prematurely born children for years (Treyvaud et al., 2014). Preterm birth is also considered one of the main risk factors for disability-adjusted life years (DALY) lost due to sickness, disability, or early death (Berger et al., 2019).

In addition to the emotional consequences, high financial costs are associated with preterm birth. A United States study in 2016 calculated that each prematurely born child results in average costs of approximately $49,140 in the first year of life, four times higher than the costs for term infants ($13,024). In the first year of life, the total annual costs for premature babies in the United States reach up to $25.2 billion (Waitzman et al., 2021).

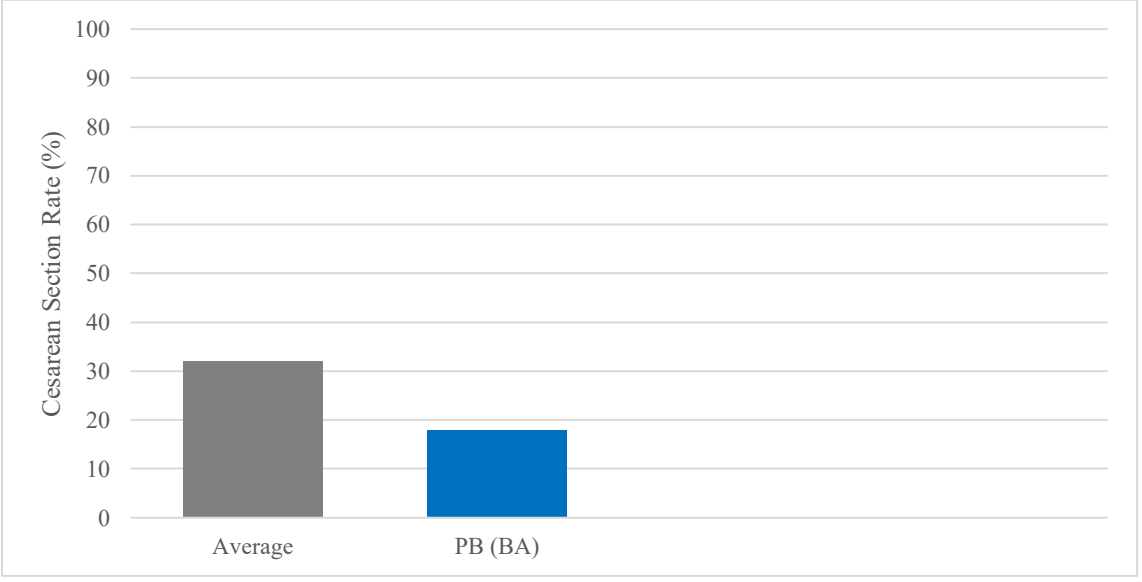
Causes and preventions of preterm birth continue to be studied, and effective therapeutic strategies continue to be investigated. Prenatal Bonding (BA) can significantly contribute to this area of research.

Mode of Birth

In this cohort, 82% of women had a vaginal delivery, while 18% had a Cesarean section (see Figure 2). By comparison, the United States National Vital Statistics reports a Cesarean section rate of 31.7% in 2019 (Osterman, 2022). While a Cesarean section delivery can be lifesaving, it comes with the risks of major abdominal surgery, well-documented risks of changes in infant microbiome, and delayed postnatal bonding and breastfeeding if mother and baby are separated after birth. Due to these known risks, efforts have been made to reduce elective Cesarean section birth rates with varied success (World Health Organization [WHO], 2021). The WHO recommends using non-clinical interventions to help reduce cesarean section rates (WHO, 2018). Prenatal Bonding (BA) has been shown to be a successful intervention to safely reduce the rate of Cesarean section births.

Figure 2

Cesarean Section Rates: Average United States vs. Prenatal Bonding (BA)



It was also found that 32% of women gave birth without medical interventions, such as synthetic oxytocin, epidural anesthesia, vacuum extraction, or episiotomy. In Germany, only 8% of women gave birth without medical intervention (Sayn-Wittgenstein, 2011). Notably, the rate for intervention-free births was four times higher following Prenatal Bonding (BA).

Place of Birth

In the cohort of pregnant mothers facilitated in Prenatal Bonding, 88.5% gave birth in a hospital setting, while 11.5% gave birth outside of the hospital (1.3% in a birth center and 10.2% at home). By comparison, a Quality Report for the Society for Out-of-Hospital Obstetrics

describes a 1.3% out-of-hospital births rate in Germany in 2019 (QUAG, 2019). The out-of-hospital birth rate for women facilitated with Prenatal Bonding (BA) was more than eight times higher than Germany's average and may reflect a lower rate of anxiety in birthing mothers before birth and greater confidence in their competence and power to have a physiological birth without the need for medical interventions.

Breastfeeding

With Prenatal Bonding (BA) facilitation, mothers have a high awareness of the value of breastfeeding, and 99% were successful at initiating breastfeeding after birth (see Figure 3), while 94% were still breastfeeding six months after birth (see Figure 4). In comparison, a German study (2017–2019) found that 74.1% of newborns were exclusively breastfed after birth, and after six months, only 66.1% of infants were still breastfed (Hockamp, 2021; Kersting et al., 2020).

Figure 3

Breastfeeding Rates After Birth: Average Germany vs. Prenatal Bonding (BA)

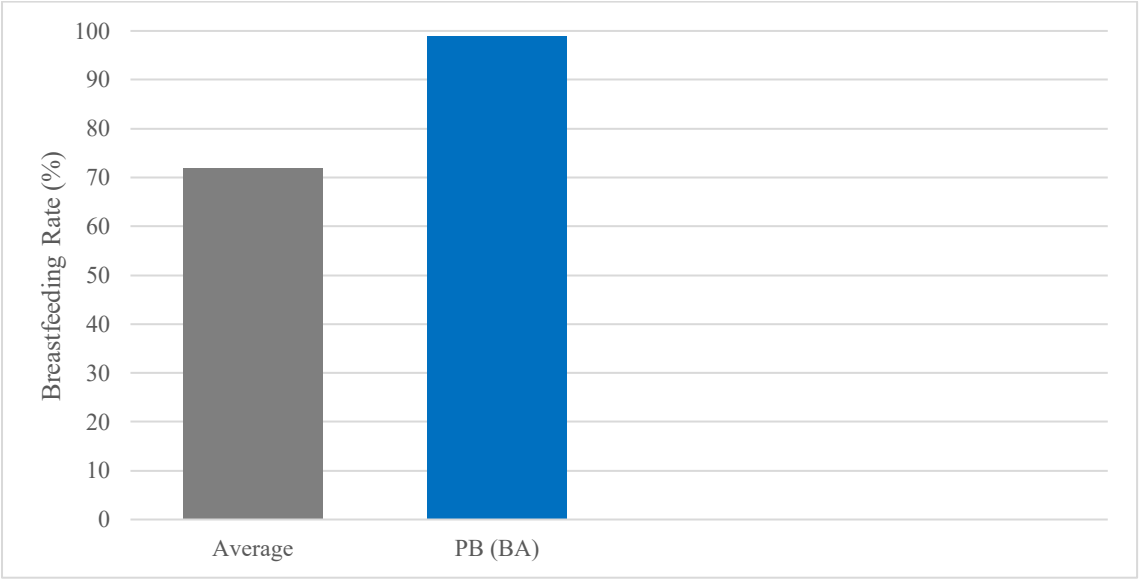
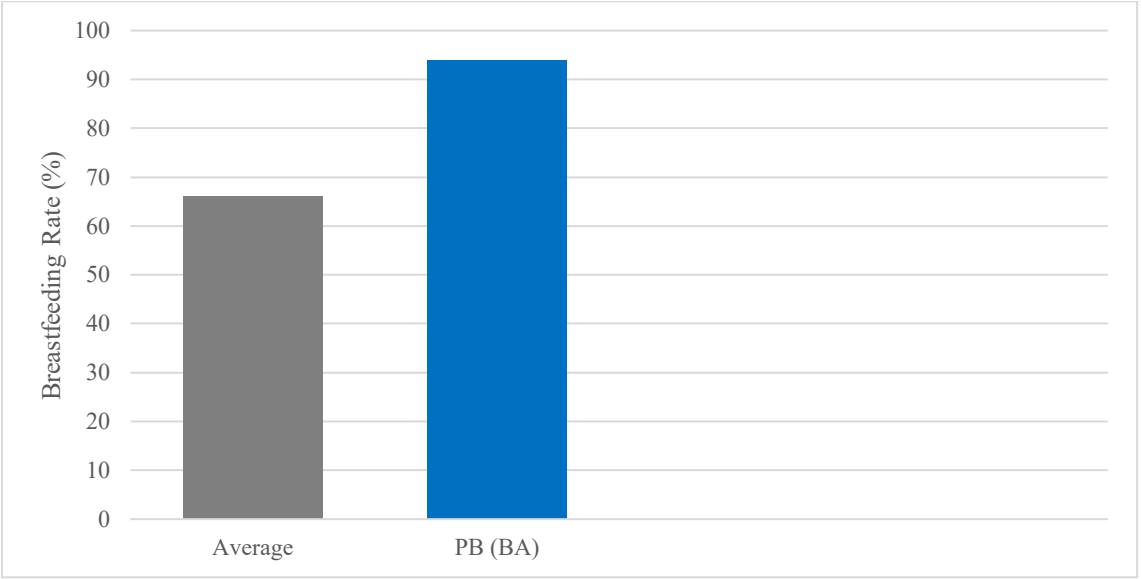


Figure 4

Breastfeeding Rates After 6 Months: Average Germany vs. Prenatal Bonding (BA)



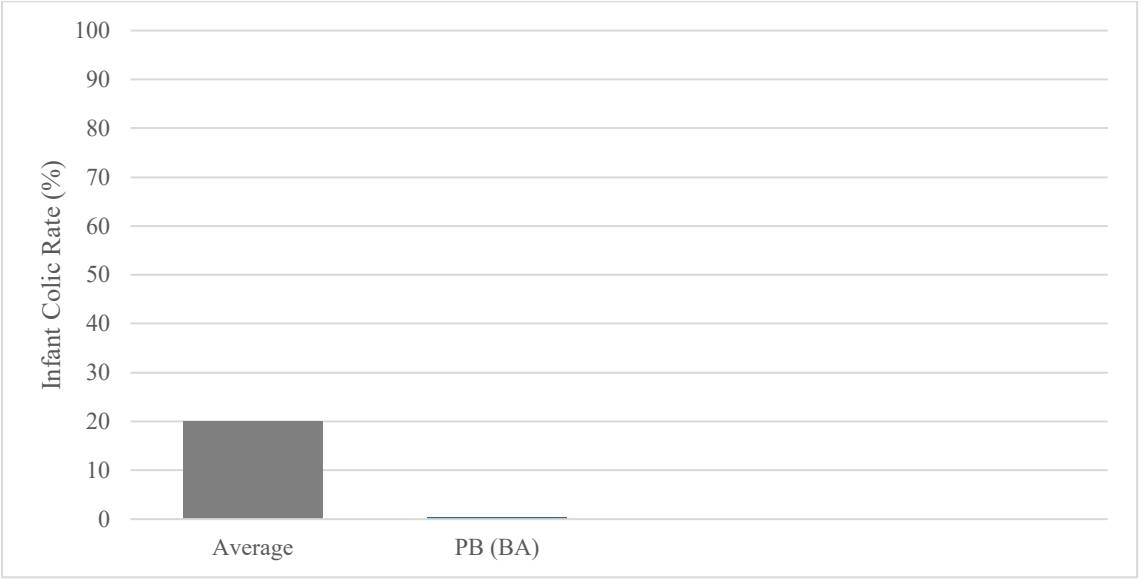
The health benefits of breastfeeding have been well-documented for many years (CDC, 2021). Any intervention that supports and increases breastfeeding rates deserves attention.

Infant Crying and Infantile Colic

In the group of mothers who experienced Prenatal Bonding (BA), only 1 baby (0.3%) had crying that fit the description of infantile colic (see Figure 5). In contrast, according to the German Society for Child and Adolescent Psychiatry, about 20% of newborns are assessed as infantile colic babies (Santos et al., 2015).

Figure 5

Infantile Colic Rates: Average Germany vs. Prenatal Bonding (BA)



According to a definition of colic from the German Society for Pediatrics and Adolescent Medicine, babies are said to have "infantile colic" if they cry 3 hours or more per day, resisting every effort to soothe for an extended period, sometimes for over three months and more. Characteristics of infantile colic babies include inconsolable crying with increasing overtiredness and overstimulation of the infant and the parents. Infantile colic is also considered a risk factor for later, further behavioral problems (Zeevenhooven et al., 2022).

Babies of mothers who have experienced Prenatal Bonding (BA) rarely cry for extended periods. On the Prenatal Bonding (BA) evaluation questionnaire given at one month and six months after birth, the answer most often given to describe crying is "The baby cries little and is easily comforted." A mother reported, "You can count on the fingers of one hand how many times Kati has cried for a while. Only once did she cry for 10 minutes, and we did not understand why. From time to time, she cries briefly to communicate when she is hungry or wants to be close to me. As soon as her needs are met, she calms down and is happy again."

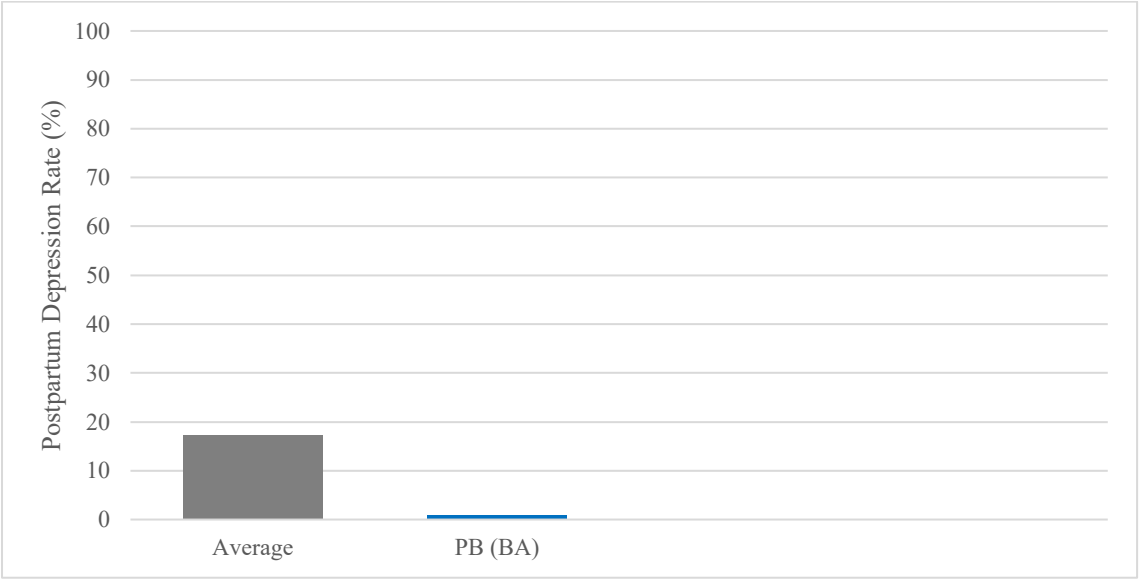
Postpartum Depression

From the researched cohort of 295 pregnant women, only 3 mothers (1%) had some characteristics or symptoms of Postpartum Depression (PPD) (see Figure 6). Postpartum Depression is a major depressive disorder that occurs in the first few months after childbirth and lasts several months or longer. While a comprehensive overview of recent literature found postpartum depression (PDD) in 17.2% of the world's population, including a range of 0.5–60%

(Wang et al., 2021), it is a rare occurrence among mothers who experienced Prenatal Bonding (BA) facilitation (Schroth, 2021).

Figure 6

Postpartum Depression Rate: Average Global vs. Prenatal Bonding (BA)



This low rate is particularly noteworthy because almost a fifth of the cohort (19.5%) began the Prenatal Bonding (BA) facilitation while still suffering either from postpartum depression diagnosed after a previous birth or from symptoms of trauma after a previous traumatic birth. They specifically chose Prenatal Bonding (BA) facilitation to seek professional support in recovering from symptoms of existing PPD or trauma. It is, therefore, clear that the reduction of PPD we saw after Prenatal Bonding (BA) facilitation did not result from a "selection bias" of mothers predisposed to good mental health. On the contrary, many pregnant women sought the program because of already existing severe mental suffering, and with the hope for healing. Many were being treated with anti-depressive medication, thus exposing the unborn babies to additional risks. All mothers who began Prenatal Bonding (BA) facilitation while on medication for pre-existing PPD no longer required medication within a short time after beginning the program.

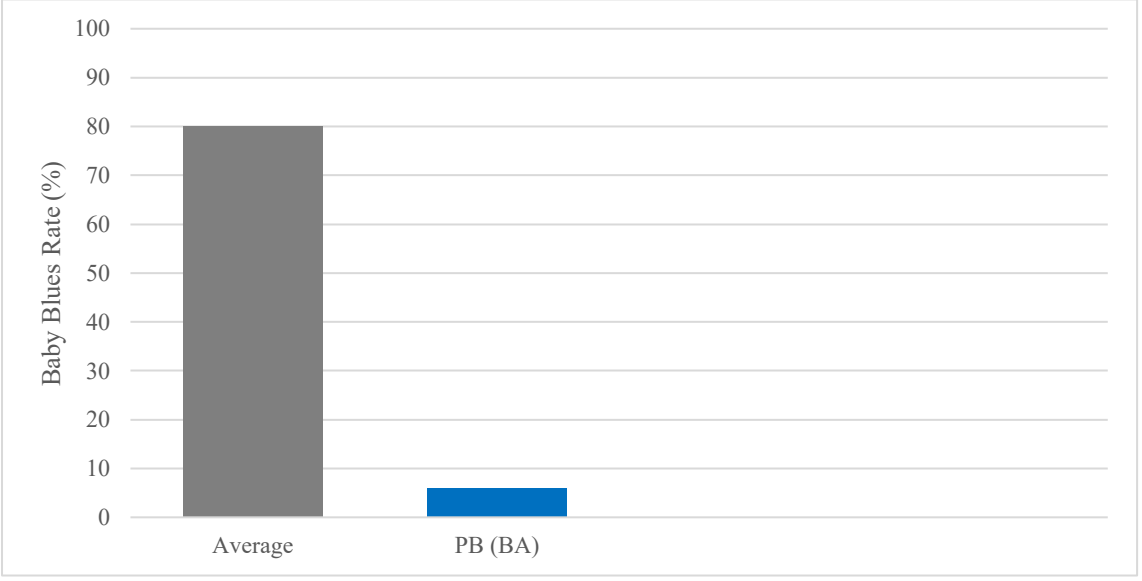
Postpartum depression is highly prevalent worldwide and results in untold suffering to mothers, babies, and families, even leading to delayed development in infants of mothers with PPD (Bernard-Bonnin, 2004, Faisal-Cury et al., 2021). In reducing rates of Postpartum Depression, the Prenatal Bonding (BA) method achieves positive results without the need for any medication (Schroth, 2015).

Baby Blues

Baby Blues is a common depressive mood condition after birth, for a few hours up to 2 weeks. The change of hormonal conditions after delivery has often been given as the medical explanation for this short depressive mood imbalance. Baby blues occurs in Germany with a frequency of up to 80% (Hübner-Liebermann et al., 2012; Landeskoordination, 2015). However, among mothers who received Prenatal Bonding (BA) facilitation, only 6% experienced baby blues (See Figure 7). This result may challenge the common assumption that baby blues is primarily the result of hormonal changes that occur in all mothers.

Figure 7

Baby Blues Rates: Average Germany vs. Prenatal Bonding (BA)



Comparison of Two Different Prenatal Bonding (BA) Cohorts

Previous research from 2013 through 2017 was presented at the International Conference on Prenatal Bonding (BA) in Cologne in 2018 (Goertz-Schroth, 2019). In that study, a cohort of 188 pregnant mothers was facilitated by 37 certified Prenatal Bonding (BA) professionals from different countries, including the United States. The results were very similar to the results reported in the current analysis (see Figure 8). Notable exceptions include an increase in Cesarean section births from 12% in the first study to 18% in the current study, which may be related to the increase in hospital births also seen in the current cohort.

Figure 8

Comparison of First (2013–2017) and Second (2017–2020) Prenatal Bonding (BA) Cohorts

Birth Outcomes	1st Cohort (*n* = 188) 2013–2017	2nd Cohort (*n* = 295) 2017–2020
Full term babies	97.5	99.0
Preterm babies	2.5	1.0
Vaginal births	88.0	82.0
Cesarean section births	12.0	18.0
Hospital births	80.5	88.5
Out-of-hospital births	19.5	11.5
Breastfeeding rate after birth	98.5	99.0
Breastfeeding rate after 6 months	92.0	94.0
Infantile colic	0.0	0.3
Postpartum depression	2.0	1.0
Baby blues	5.0	6.0

Note. Numerical values are percentages.

The similarity of results across two cohorts demonstrates the reliability of Prenatal Bonding (BA) facilitated support, delivered to different groups of pregnant mothers by different professionals over seven years. A mother who participated in the first cohort reported:

> Prenatal Bonding (BA) was such a relief for us. Our bond was strong long before birth, and that made it so easy. Giving birth went so incredibly well. It felt like Emma already knew me and was well prepared for birth and had a strong relation with us from the first moment. Now I'm surprised how easy it is with my two kids and the daily routine and housekeeping. After the birth of my first child, I didn't know how I would have managed without my mother's help. I was so stressed. Now I have two children, and I don't need any help at all. (Goertz-Schroth, 2019)

Conclusion

This retrospective study sought to answer the effects of Prenatal Bonding (BA) on pregnancy, birth, and postpartum outcomes. All the parameters demonstrated improving outcomes after Prenatal Bonding (BA) facilitation, with most babies born vaginally at full term and able to initiate breastfeeding successfully. In the postpartum period, almost all babies were easily soothed, with a very low percentage of infantile colic, and a high percentage of babies continued to be breastfed for at least six months. The rates of baby blues and postpartum depression were exceedingly low. All these factors help to continue in the postpartum period the maternal-infant bond that began before birth and supports the foundation for a healthy and trusting parent-child interaction with increased stress-resilience for the whole family system.

This retrospective analysis has demonstrated the safety and reliability of Prenatal Bonding (BA) as an effective support for pregnant mothers and has shown consistent positive outcomes over time. The method can be learned and successfully applied by professionals from many different professional backgrounds. It has proven to be an effective intervention to support pregnant mothers, their unborn babies, and families in creating deeply meaningful connections long before birth.

Strengths of this study include the constancy of markedly improved birth and postpartum outcomes over time with various professional facilitators in varied settings. Limitations of the study include the retrospective study design, the relatively small sample size, and the lack of maternal prenatal demographic information. Additional research is needed to further validate these results.

By increasing the chance of spontaneous vaginal birth and reducing the risk of birth trauma, Prenatal Bonding (BA) can help prevent serious adverse outcomes, which often lead to chronic illness later in life (Mead, 2020). By significantly reducing the risk of postpartum depression, much maternal, infant, and family suffering can be prevented. By supporting improved birth outcomes and secure bonds of attachment, Prenatal Bonding (BA) helps lay the foundation for optimal physical and mental health throughout the lifespan, contributing to a healthier, more peaceful society.

References

Bell, E. F., Hintz, S. R., Hansen, N. I., Bann, C. M., Wyckoff, M. H., DeMauro, S. B., Walsh, M. C., Vohr, B. R., Stoll, B. J., Carlo, W. A., Van Meurs, K. P., Rysavy, M. A., Patel, R. M., Merhar, S. L., Sánchez, P. J., Laptook, A. R., Hibbs, A. M., Cotten, C. M., D'Angio, C. T., Winter, S., Fuller, J., Das, A., for the Eunice Kennedy Shriver National Institute of Child Health and Human Development Neonatal Research Network (2022). Mortality, in-hospital morbidity, care practices, and 2-year outcomes for extremely preterm infants in the US, 2013–2018. *Journal of the American Medical Association, 327*(3), 248–263. https://doi.org/10.1001/jama.2021.23580

Berger, R., Rath, W., Abele, H., Garnier, Y., Kuon, R. J., & Maul, H. (2019). Reducing the risk of preterm birth by ambulatory risk factor management. *Deutsches Arzteblatt International*, *116*(50), 858–864. https://doi.org/10.3238/arztebl.2019.0858

Bernard-Bonnin, A. C. (2004). Maternal depression and child development. *Paediatric Child Health, 9*(8), 575–583. https://doi.org/10.1093%2Fpch%2F9.8.575

Bretherton, I. (1992). The origins of Attachment Theory: John Bowlby and Mary Ainsworth. *Developmental Psychology,* 28, 759-775. https://doi.org/10.1037/0012-1649.28.5.759

Centers for Disease Control and Prevention. (2021, July 27). Breastfeeding benefits both baby and mom. Centers for Disease Control and Prevention. Retrieved January 1, 2023, from https://www.cdc.gov/nccdphp/dnpao/features/breastfeeding-benefits/index.html

Chamberlain, D. (1988). *Babies Remember Birth*, Random House.

Conley, O. (2010). Birth without Violence (1975), by Frederick, The Embryo Project Encyclopedia. https://embryo.asu.edu/pages/birth-without-violence-1975-frederick-leboyer

Evertz, K., Janus, L., & Linder, R. (Ed.) (2021). Handbook of Prenatal and Perinatal Psychology. Springer International Publishing. ISBNs 978-3-03-041715-4, 978-3-03-041716-1. https://doi.org/10.1007/978-3-030-41716-1

Faisal-Cury, A., Tabb, K. M., Ziebold, C., Matijasevich, A. (2021). The impact of postpartum depression and bonding impairment on child development at 12 to 15 months after delivery. *Journal of Affective Disorders Reports*, 4, 100125.

Goertz-Schroth, A. (2019). Quantifizierung von häufigen Erfahrungen mit der Bindungsanalyse {i.e. Survey on common results of Prenatal Bonding (BA)}. In H. Blazy (Ed.), *Polyphone Strömungen*. Heidelberg: Mattes Verlag.

Hidas, G., Raffai, J., & Vollner, J. (2002). Lelki köldökzsinór - Beszélgetek a kisbabámmal. Valasz Könyvkiado, Budapest, ISBN 963 9461 03 2

Hockamp, N., Burak, C., Sievers, E., Rudloff, S., Burmann, A., Thinnes, M., Zahn, J., Lücke, T., & Kersting, M. (2021). Breastfeeding promotion in hospitals and prospective breastfeeding rates during the first year of life in two national surveys 1997–1998 and 2017–2019 in Germany. *Public Health Nutrition, 24*(9), 2411-2423. https://doi.org/10.1017/S1368980021001099

Hübner-Liebermann, B., Hausner, H., & Wittmann, M. (2012) Recognizing and treating peripartum depression. Dtsch Arztebl Int.: 109(24): 419-24, https://doi.org/10.3238/arztbl.2012.0419

Janus, L. (2021). *The History of Prenatal Psychology*, pp 3-8. In: Evertz, K., Janus, L., Linder, R. (eds) Handbook of Prenatal and Perinatal Psychology. Springer, Cham. https://doi.org/10.1007/978-3-030-41716-1_1

Jeličić, L., Veselinović, A., Ćirović, M., Jakovljević, V., Raičević, S., & Subotić, M. (2022). Maternal distress during pregnancy and the postpartum period: Underlying mechanisms and child's developmental outcomes - a narrative review. *International Journal of Molecular Sciences*, *23*(22), 13932. https://doi.org/10.3390/ijms232213932

Kersting, M., Hockamp, N., & Burak, C. (2020), Studie zur Erhebung von Daten zum Stillen und zur Säuglingsernährung in Deutschland – SuSe II. In: Deutsche Gesellschaft für Ernährung (Hrsg.): 14. DGE-Ernährungsbericht. Vorveröffentlichung Kapitel 3. Bonn (http://www.dge.de/14-dge-eb/vvoe/kap3), V17.

Kennell, J., Klaus, M., McGrath, S., Robertson, S., & Hinkley, C. (1991). Continuous emotional support during labor in a US hospital: A randomized controlled trial. *Journal of the American Medical Association*, 2665 (17), 2197-2201.

Landeskoordination, N. (2015). Wellcome Praktische Hilfen nach der Geburt, Wirkungsorientierter Jahresbericht 2015, 9. https://www.wellcome-online.de/pdf/Jahresbericht-wellcome-Niedersachsen-2015.pdf

Malouf, R., Harrison, S., Burton, H. A. L., Gale, C., Stein, a., Franck, L. S., & Alderdice, F. (2021). Prevalence of anxiety and post-traumatic stress (PTS) among the parents of babies admitted to neonatal units: A systematic review and meta-analysis. *eClinical Medicine* 2022;43: 101233. https://doi.org/10.1016/j. eclinm.2021.101233

Manuck, T. A., Rice, M. M., Bailit, J. L., Grobman, W. A., Reddy, U. M., Wapner, R. J., Thorp, J. M., Caritis, S. N., Prasad, M., Tita, A. T., Saade, G. R., Sorokin, Y., Rouse, D. J., Blackwell, S. C., Tolosa, J. E., & Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network (2016). Preterm neonatal morbidity and mortality by gestational age: A contemporary cohort. *American Journal of Obstetrics and Gynecology, 215*(1), 103.e1–103.e14. https://doi.org/10.1016/j.ajog.2016.01.004

March of Dimes (2022). A profile of prematurity in United States. https://www.marchofdimes.org/peristats/tools/prematurityprofile.aspx?reg=99

Mead, V. (2020). Adverse Babyhood Experiences (ABEs) increase risk for infant and maternal morbidity and mortality, and chronic Illness. *Journal of Prenatal and Perinatal Psychology and Health, 34*(4), 1-33.

Molenaar, N. M., Tiemeier, H., van Rossum, E. F. C., Hillegers, M. H. J., Bockting, C. L. H., Hoogendijk, W. J. G., van den Akker, E. L., Lambregtse-van den Berg, M. P., & El Marroun, H. (2019). Prenatal maternal psychopathology and stress and offspring HPA axis function at 6 years. *Psychoneuroendocrinology*, *99*, 120–127. https://doi.org/10.1016/j.psyneuen.2018.09.003

Morgan, B. E., Horn, A. R., & Bergman, N. J. (2011). Should neonates sleep alone? *Biological Psychiatry*, 70 (9), 817, http://doi.org/10.1016/j.biopsych.2011.06.018

Murray, E., Pearson, R., Fernandes, M*., et al. (2016).* Are fetal growth impairment and preterm birth causally related to child attention problems and ADHD? Evidence from a comparison between high-income and middle-income cohorts. *Journal of Epidemiology and Community Health,* 70, 704-709.

Osterman, M. J. K. (2022). *Changes in Primary and Repeat Cesarean Delivery: United States, 2016-2021.* National Vital Statistics Rapid Release. Report No 21. July 2022. https://www.cdc.gov/nchs/data/vsrr/vsrr021.pdf

Perapoch, J., Vidal, R., Gómez-Lumbreras, A., Hermosilla, E., Riera, L., Cortés, J., Céspedes, M. C., Ramos-Quiroga, J. A., & Morros, R. (2021). Prematurity and ADHD in childhood: An observational register-based study in Catalonia. *Journal of Attention Disorders*, *25*(7), 933–941. https://doi.org/10.1177/1087054719864631

Phillips, R. (2012). Changing the practice of skin-to-skin contact in the first hour after birth to increase breastfeeding rates. Platform Presentation, 17th Annual Conference of the Academy of Breastfeeding Medicine, Chicago, IL.

Phillips, R. (2013). The sacred hour: Uninterrupted skin-to-skin contact immediately after birth. *Newborn and Infant Nursing Reviews,* 13(2),67-72.

QUAG. (2019). Extract from the statistics "Out-of-hospital births in Germany - quality report 2019." German Out-of-Hospital Births/Summaries. https://www.quag.de/downloads/Summary%20For%20Out%20Of%20Hospital%20Births-2019_QUAG.pdf

Robinson, R., Girchenko, P., Pulakka, A., Heinonen, K., Lähdepuro, A., Lahti-Pulkkinen, M., Hovi, P., Tikanmäki, M., Bartmann, P., Lano, A., Doyle, L. W., Anderson, P. J., Cheong, J. L. Y., Darlow, B. A., Woodward, L. J., Horwood, L. J., Indredavik, M. S., Evensen, K. A. I., Marlow, N., Johnson, S., … Räikkönen, K. (2022). ADHD symptoms and diagnosis in adult preterms: systematic review, IPD meta-analysis, and register-linkage study. *Pediatric Research*. Advance online publication. https://doi.org/10.1038/s41390-021-01929-1

Santos, I. S., Matijasevich, A., Capilheira, M. F., Anselmi, L., & Barros, F. C. (2015). Excessive crying at 3 months of age and behavioural problems at 4 years age: A prospective cohort study. *Journal of Epidemiology and Community Health (1979-)*, *69*(7), 654–659. http://www.jstor.org/stable/44017525

Sayn-Wittgenstein, F. (2011). Natürliche Geburt in der Klinik - ganz ohne Arzt - Hebammenkreißsäle machen es möglich (Newsletter Nr. 52 / Juli 2011) - https://www.gesundheitsforschung-bmbf.de/de/naturliche-geburt-in-der-klinik-ganz-ohne-arzt-hebammenkreisssale-machen-es-moglich-2738.php

Schroth, G. (2015). Peri-/postpartale depression – Eine (primäre) *Aufgabe der Psychotherapie, Psychotherapie Aktuell* / Heft 2.2015 / ISSN 1869-0335.

Schroth, G. (2021). Postpartum mood disorders: Prevention by prenatal Bonding (BA), 611-618. In *Handbook of Prenatal and Perinatal Psychology,* Ed. Evertz, K., Janus, L., Linder, R., Springer Nature Switzerland.

Schroth, G. (2021). Introduction to Prenatal Bonding (BA), 595-598. In *Handbook of Prenatal and Perinatal Psychology*, Ed. Evertz, K., Janus, L., Linder, R., Springer Nature Switzerland.

Simons, S. S. H., Zijlmans, M. A. C., Cillessen, A. H. N., & de Weerth, C. (2019). Maternal prenatal and early postnatal distress and child stress responses at age 6. *Stress (Amsterdam, Netherlands)*, *22*(6), 654–663. https://doi.org/10.1080/10253890.2019.1608945

Treyvaud, K., Lee, K. J., Doyle, L. W., Anderson, P. J. (2014). Very preterm birth influences parental mental health and family outcomes seven years after birth. *Journal of Pediatrics*, 164(3), 515-521. https://doi.org/10.1016/j.jpeds.2013.11.001

UNFPA (2019). Trends in maternal mortality 2000 to 2017: Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization. License: CC BY-NC-SA 3.0 IGO. https://www.unfpa.org/featured-publication/trends-maternal-mortality-2000-2017

UNICEF. (2023). Maternal, newborn and child survival. https://www.unicef.org/health/maternal-newborn-and-child-survival

Van den Bergh, B. R. H., van den Heuvel, M. I., Lahti, M., Braeken, M., de Rooij, S. R., Entringer, S., Hoyer, D., Roseboom, T., Räikkönen, K., King, S., & Schwab, M. (2020). Prenatal developmental origins of behavior and mental health: The influence of maternal stress in pregnancy. *Neuroscience and Biobehavioral Reviews*, *117*, 26–64. https://doi.org/10.1016/j.neubiorev.2017.07.003

Verny, T. & Kelly J. (1981). *The secret life of your unborn child.* Summit Books.

Waitzman, N. J., Jalali, A., & Grosse, S. D. (2021). Preterm birth lifetime costs in the United States in 2016: An update. *Seminars in Perinatology*, *45*(3), 151390. https://doi.org/10.1016/j.semperi.2021.151390

Walani, S. R. (2020). Global burden of preterm birth. *International Journal of Gynaecology and Obstetrics, 150*(1), 31–33. https://doi.org/10.1002/ijgo.13195.

Wang, Z., Liu, J., Shuai, H., Cai, Z., Fu, X., Liu, Y., Xiao, X., Zhang, W., Krabbendam, E., Liu, S., Liu, Z., Li, Z., & Yang, B. X. (2021). Mapping global prevalence of depression among postpartum women. *Translational Psychiatry, 11*(1), 543. https://doi.org/10.1038/s41398-021-01663-6

World Health Organization. (2018). *WHO recommendation non-clinical interventions to reduce unnecessary caesarean sections.* Geneva: World Health Organization. License: CC BY-NC-SA 3.0 IGO. https://www.who.int/publications/i/item/9789241550338

World Health Organization (2021). Caesarean section rates continue to rise, amid growing inequalities in access**.** https://www.who.int/news/item/16-06-2021-caesarean-section-rates-continue-to-rise-amid-growing-inequalities-in-access

Wu, Y., Espinosa, K. M., Barnett, S. D., Kapse, A., Quistorff, J. L., Lopez, C., Andescavage, N., Pradhan, S., Lu, Y. C., Kapse, K., Henderson, D., Vezina, G., Wessel, D., du Plessis, A. J., & Limperopoulos, C. (2022). Association of elevated maternal psychological distress, altered fetal brain, and offspring cognitive and social-emotional outcomes at 18 months. *Journal of the American Medical Association, Network Open*, *5*(4), e229244. https://doi.org/10.1001/jamanetworkopen.2022.9244.

Zeevenhooven, J., de Bruin, F. E., Schappin, R., Vlieger, A. M., van der Lee, J. H., Haverman, L., van Sleuwen, B. E., L'Hoir, M. P., & Benninga, M. A. (2022), Follow-up of infants with colic into childhood: Do they develop behavioural problems? *Journal of Paediatric Child Health, 58*, 2076-2083. https://doi.org/10.1111/jpc.16174

The Association for Prenatal and Perinatal Psychology and Health
Journal of Prenatal & Perinatal Psychology & Health
ISSN: 1097-8003 Vol. 40 No. 1 Spring 2026

Mothers on the Threshold of Being: The Inner Psychological and Existential Dynamics of Childbirth and the Midwife's Presence

Rita Nováky

I am a transpersonal midwife. By *transpersonal*, I refer to a psychological perspective that goes beyond individual identity, encompassing spiritual, existential, and relational dimensions of human experience (Bagdy et al., n.d.; Orosz, n.d.). Beyond my work in the delivery room, I care for pregnant women, prepare families for childbirth, and, in line with my perinatal certification, I support my clients in processing their birth experiences and accompany those who are coping with loss. This perspective article is grounded in my decades of experience in the delivery room as a midwife. It is not empirical research, but a reflective clinical essay informed by existential and transpersonal psychology. Theoretical perspectives from existential and transpersonal psychology, as well as Hungarian interdisciplinary literature on birth and childbirth, are used retrospectively to support reflection and meaning making rather than to provide a comprehensive theoretical review (Orosz & Nagy, 2017; Varga & Suhai, 2010; Yalom, 2006).

My transpersonal approach in the delivery room means that I am fully aware that the process mothers and fathers go through profoundly influences them for the rest of their lives. The birth experience becomes a defining memory that stays with them, potentially bringing change to their relationship, their sexuality, their bond with their child, and their relationship with their own bodies. Encountering life and death, participating in Creation, can offer a new perspective and affirmation for their experience of existence. Naturally, this transformative potential can unfold only if the chain of meeting themselves, struggling, surrendering, and letting go, does not break under trauma. I am aware that childbirth, like birth itself, is not merely a physical story leaving visceral imprints, but also a psychological and spiritual experience.

Therefore, when I accompany a pregnant woman, I do not attend only to her body; I attend to her whole being. I listen to the story of her own birth, which reflects her mother's lived experience and narrative, shaped and solidified throughout the years. I know that this story, both as it was told to her and as she will experience it in the delivery room, will be present during labor. Family patterns often reappear involuntarily. Hearing these stories allows me to stay attuned in

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the delivery room. They do not determine my professional decisions or interventions; instead, their presence in my awareness supports the quality of my presence, not in my actions.

From a holistic perspective, a woman giving birth is not made only of cells and obstetrical processes; she has feelings and fears, experiences and information. Some of this information comes from friends or the internet. Stories are often saturated with emotion and subjectivity, which accompany her into pregnancy and birth. These images organize her fantasies and expectations for the coming period.

Pregnant women often live mostly in the future. The past is hardly present before their eyes; their connection with their baby, both physically and emotionally, is what anchors them in the present moment, for this cannot be projected into the future. The image and plans of the future are shaped by the couple's personal histories, blended from their individual pasts. One can watch them begin nesting, imagining their lives with their baby or child, not only looking at the inner image of the fetus but envisioning their entire future transformed by this arrival. They create precise plans: what they want to teach the child, what they want to show them, what school they wish them to attend, and so on. Birth, being a part of the future, is the gateway into that future, where the past inevitably speaks, even unnoticed.

The Transpersonal Midwife

Work in the delivery room is rarely defined from a psychological perspective. However, a transpersonal midwife meets spiritual questions in her own personal life and recognizes the same unspoken turning points in the laboring woman's process. Questions arise, such as: "Who am I?" "What is the purpose of my life?" "Where does my path lead?" "Will I be able to go all the way?" "How do I relate to life and death, especially my own death?" "Am I alone, or can I perceive myself as part of the Great Whole?" "Is Nature within me?" Can I sense myself within Nature?" These questions rarely take verbal form during labor, yet answers, certainties, or profound uncertainties may arise. Processing the birth experience may help the mother take her first steps on her own spiritual path.

The process of labor and the experience of birth may be easier to describe. Many accurate studies and accounts exist on what constitutes a "good birth." These narratives, though emotion-laden, are retrospective and formed after the event, when the mother can look back and articulate her experience. From this retrospective meaning-making, one can draw conclusions about the quality of the birth, of what a "good birth" is.

Often, mothers and professionals alike imagine the good birth through a kind of generalization, synthesizing multiple stories and reading many birth narratives. For me, a good birth is simply the one a woman feels was good, and this feeling remains unchanged over time.

Transpersonal, Humanistic Accompaniment in the Delivery Room

Working in the delivery room means observing and accompanying a natural process described accurately, even in old medical manuals. Yet it matters greatly how we accompany the mother, and of course, the baby, and even the father or the partner, who is also present with his own

emotions, fears, and anxieties. For first-time parents, the unfamiliar environment, feelings, and processes all play a role. Cognitive preparation can ease some of this uncertainty, but one cannot predict what deep emotional material will surface, forgotten memories, or even content from the family unconscious.

Family stories passed down from parents and grandparents fill the "family legendarium." Their emotional coloring shapes how young parents enter pregnancy. The heat of these stories may fade over time; sometimes the narrative cools because of trauma, and the mother or father, who experienced it, dissociates or seals it off. In such cases, the family narrative may become overly idealized or excessively vague. This can make preparation difficult, as the pregnant woman receives no real guidance from her mother or grandmother. Yet these stories, even when muted, remain present in the delivery room.

I often say during prenatal preparation that, during labor, trapdoors open into the deepest layers of the psyche. Feelings emerge from there, but these trapdoors allow movement; emotions can come and go. It seems to bring reassurance when I share this: that they will not be alone with these feelings in the delivery room, and I will be present with this level of awareness. In their internal "movie" of the future, this reduces the sense of threat.

Many women feel anxious about the arrival of an altered state of consciousness. Modern people like to stay in control, and the idea of losing control can feel frightening. Preparation and building trust help mothers feel that, in the presence of their midwife, they can let go and surrender to the process. This surrender can transform their relationship with themselves, not only physically, but also emotionally and spiritually. Experiencing an altered state of consciousness during labor can profoundly enrich the birthing process. The woman may discover that surrender is not the same as helplessness but rather a shift in spatial and temporal dimensions, an experience that influences her entire life.

Over the past few years, as a transpersonal, humanistic midwife, my work in the delivery room has subtly changed. My hands-on presence, the massage, touch, and compresses, have decreased, and a different quality of presence has emerged. A calm knowing: the woman's body and soul are undergoing a sweeping transformation, and everything is unfolding as it should. Sometimes, however, the atmosphere in the delivery room becomes difficult for me as well. I may not notice this immediately, but only perceive subtle changes in my own functioning, changes I often recognize the next day when writing in my midwife's journal. Medically, nothing unusual may have happened. Yet the shifts in my perceptions or intuitions reveal the emotional and spiritual processes unfolding in the mother or her partner. The partner's presence can significantly influence the birth process. I sense this and find ways to address it. Sometimes progress is possible only through medical intervention, but later, during postpartum visits, we revisit what happened. Often, by the six-week closing conversation, the mother can articulate what she experienced at key moments of birth.

Existential Isolation in Labor

In laboring women, I often recognize the existential isolation described by Yalom (2006). He connects it to the fact that one must face death and the transition alone. It is a defining existential truth that we live with, and we either fear it or find peace through acknowledging it. "The knowledge of death means that the individual becomes aware that no one can die in his place" (Yalom, 2006, p. 279).

Through my transpersonal lens, birth is similar: it is something one must ultimately do alone. Contact with the outside world may remain, but this can influence the progression, either through a supportive connection that strengthens the mother and baby or through emotional dynamics arising from the depths. Labor is a path where only one pair of feet fits. Helpers may go ahead, calling and encouraging, or follow behind, supporting and holding, but only the mother can walk the path and bring forth her child. In today's world, cesarean section is a common tool, yet from this perspective, it may not offer mother or baby the existential affirmation of "bringing forth" or "being born."

Our own birth is a significant existential milestone: things happen, ideally with our conscious assent, yet we are exposed to the forces of nature. This can become a powerful affirmation of existence and selfhood. Yalom (2006) writes that humans must confront the givens of existence, problems inseparable from being human. Stepping out of daily routines and entering silence and stillness are conditions for this confrontation. In the delivery room, such states often arise from intense, boundary-crossing experiences. These moments can awaken in the mother an acute awareness of her own mortality. Not in a formulated, conversational sense, but in a lived, bodily truth.

The events and experiences of birth possess great healing power. They can awaken memories held in the body and rewrite pages of the family legendarium. Birth can transform a woman's relationship with her body, and this requires a companion who understands the transformative nature of the process, who is present not only with physiological knowledge but also with humanistic psychological awareness. Someone who knows that birth traverses both hell and heaven.

Motherhood: Crisis, Transition, Grief, Renewal

From my daily work, I see that young mothers today need a lot of reassurance. After the rosy period of pregnancy comes the trials of childbirth, the testing of endurance and vulnerability. The vulnerability to contractions. The realization that there is no exit, no alternative clever solution, no rest. It must be completed. There is no escape. Cognitive strategies fail here. Only surrender, letting go, and allowing.

Birth is a developmental crisis. One must find new solutions for a new life situation, for the old ones no longer work. In developmental crises, personality changes. The crisis is foreseeable, and one can prepare to some extent, yet the path ahead remains unclear. Emotional load, anxiety, and uncertainty are normal. Yet the way one enters the new situation and copes with it is shaped by individual factors, family culture, and societal expectations, which can create tension.

A new identity must be formed and integrated with the old, a naturally time-consuming process. Maternal identity begins to form with full force after birth. During pregnancy, it exists only as an underground stream or as a vision of the future. I often hear pregnant women describe their imagined life with the baby, insisting that not much will change, that they will simply continue what they used to do as a couple, now with three. But maternal identity must take its place among the woman's other identities and, over time, integrate with them. This includes the realization that responsibility now extends beyond her own life and decisions — to the child's as well. I have often sensed that anxiety about this expansion can delay the spontaneous onset of labor: while the baby is inside, responsibility feels internal and secret; after birth, responsibility visibly branches in two, the mother must sustain her own life and strength, and sustain her child's as well. The new tasks, new experiences, and the weight of responsibility begin to build maternal identity. A young mother's own childhood experience with her mother contributes to this. So do maternal figures she wishes to emulate.

Delivery Room as a Therapeutic Space

The delivery room is an intense space, not only physically but emotionally. The hours of labor often exceed the boundaries of physical experience: deep internal processes emerge related to identity, control, trust, and vulnerability. It is natural in such moments for the mother to project her own feelings, often unconsciously, onto others. In this process, the midwife often becomes not only a professional helper but a projection surface, a mirror into which the mother projects her fears, mistrust, hopes, or childhood memories, often without realizing it. The midwife may become the "good mother," the "boss," the "enemy," the "rescuer," or the target of displaced anger. What happens in the moment is not always about the present; past emotional patterns return and come alive.

Projection may express defense, fear, longing, anger, or hope, depending on what unfolds inside the mother. For the midwife, these emotions may seem irrational yet exert real influence, saturating the relationship emotionally. A transpersonal midwife can perceive the projections directed toward her in the birthing room; not only does she recognize them, but in the case of transference, she does not react from her own emotional patterns. Instead, she allows these feelings to flow through the space. She knows that these feelings and possible anger are not hers; they clearly speak about the laboring woman's difficult relationship with her own mother. She must be able to disentangle the three-layered relationship and remain present accordingly, accompanying the woman through her process.

I call this a three-layered relationship because one layer arises from the mother's own relational history. The physical and emotional ordeal of labor can suddenly evoke deeply buried memories and personal narratives. The second layer is the midwife's role as a helper, her professional presence. The third layer is the midwife's own personal history, which can be stirred by the projection cast onto her, by the energy of the transference.

A midwife's personal psychological work, her transpersonal approach, and her attentive presence enable her to see through such situations and separate the present from the past. She can

discern what is personal to her and what belongs to the emotional material arising from the laboring woman's story.

It can be healing when the midwife is able to carry and tolerate the anger, dissatisfaction, intensity, or sense of abandonment projected onto her, without withdrawing, without breaking the connection, but holding it throughout the labor. In doing so, she can support the mother's emotional processes, even though these are not clearly visible; only their expressions and intensity can be sensed. A "trap" for the midwife may emerge if she receives the projection of the "good mother," for being perceived as good feels reassuring. Yet this can create a subtle relational imbalance, a particular closeness that carries its own risks.

When the "good mother" image is projected onto a helper, a seemingly warm and trusting situation emerges, but it can be dangerous. The mother is not simply seeing the helper; she may be projecting an idealized mother image she never had, still longs for, or wishes to hold onto in this vulnerable time. This projection may offer temporary comfort, but it distorts the relationship and burdens the midwife with expectations that cannot be fulfilled.

The midwife may unconsciously slip into the idealized role, feeling she must indeed be "perfect." This creates internal pressure that is exhausting, because, as a human and a professional, she naturally has limits. When even a small miscommunication or misstep occurs, the idealized image can instantly collapse, shifting into devaluation, anger, mistrust, or cold rejection. This shift can be painful for both mother and midwife, especially if the midwife does not recognize the projection in time or if her own unprocessed attachment wounds become activated.

In these situations, the midwife's own childhood story can be awakened. She is no longer relating only to the woman before her, but also, unnoticed, to her own inner child. Boundaries blur: the midwife may overextend herself, be unable to say no, or conversely, become overly directive or maternal, as if she were truly caring for a child rather than supporting an adult mother's growth. The mother unconsciously becomes a child seeking comfort, solutions, and unconditional acceptance from the "all-knowing" helper. The helper, unless fully aware, easily slides into this role, gradually losing clarity and strength in her professional identity.

The "good mother" projection thus appears nurturing and loving, but in truth, it reflects a destabilized dynamic in which the mother's adult competence weakens or disappears, especially since labor itself often evokes regressive states. In such cases, the newly delivered mother may unknowingly hand over her own sense of competence, sharing the perceived "power" of birth with the midwife. This gratitude-filled bond becomes an invisible thread connecting them, even though the relationship was created solely for this life situation. In birth processing sessions, gratitude and admiration are often markers of this subtle imbalance.

Projection and idealization, whether of the good or bad mother, can profoundly affect a laboring woman's emotional processes and her relationship with her own mother. Amid the physical and emotional intensity of birth, the "good mother" may arrive to comfort and support her, healing earlier wounds to the inner mother image.

The "bad mother" appearance, however, is not necessarily destructive: if the mother experiences that she can be angry and furious, and the midwife can bear this, remain present, and hold her through vulnerability, this too can be profoundly healing. It can reorganize the internal

mother image and foster a more emotionally mature attachment. If the projection receives an appropriate response, it can help the mother through the narrowing passage; if not, it remains an obstacle.

In my experience, birth is a uniquely therapeutic situation. The dynamics often resemble those in individual therapy, but with significant differences. In therapy, change unfolds gradually through weekly sessions. In the delivery room, nine months of slow, often unnoticed internal transformation can erupt suddenly under the physical intensity of labor, bringing explosive emotional experiences. These may integrate into the mother's personality, depending on her capacity for self-reflection, or sink back into the unconscious if left unprocessed.

In talk therapy, physical touch is rare and used only when necessary. In birth, touch becomes not only necessary and unavoidable physically, but also emotionally impactful. The closeness and intimacy of touch, especially in vulnerability and pain, can stir deep psychological layers previously hidden. Touch opens a doorway to the soul: long-buried memories, early relational experiences, absences, or injuries may surface, initiating a deep, often unconscious emotional process. This may evoke regression, projection, and idealization. A transpersonal midwife remains aware of these processes, supporting the mother while separating her own emerging inner material, addressing it later in her own psychological work rather than acting from it in the moment—supporting her inner development and reinforcing her professional and personal identity.

Existence-Awareness in the Birthing Room

The reflections below are grounded primarily in decades of clinical experience, informed by existential and transpersonal psychological literature. While reflecting on my experiences and the works of Yalom (2006) and others, I was curious about how they describe existence, and how I perceive this in the birthing room. My main question was whether birth can support mothers in becoming aware of their own existence, not only in their bodily, daily-life sense, in their relationships, but whether it can offer an experience of unity, of complete oneness with their surroundings, the world, or even the universe.

During birth, as ego boundaries blur, the mother may experience an all-encompassing sense of belonging, harmony, and timelessness, a "spaceless space, timeless time," as I call it. The midwife, in her presence, also walks her own inner paths while simultaneously remaining grounded in the material world. I believe all transpersonal helpers must navigate this dual presence.

Bringing a child into the world is part of a conscious choice. Participation in Creation, even as an unspoken longing, combined with the experience of freedom and responsibility, can deepen the sense of existence. This existential experience can be weakened by the mother's psychological state, the strength of her relationships, and the changing bond with her own mother during pregnancy and adulthood. Altered states of consciousness during labor may bring spiritual experiences that strengthen or transform the sense of existence.

Factors shaping this experience include the arrival of death-awareness, the finiteness of life, and existential anxiety. A woman may feel both freedom and responsibility and discover meaning

appropriate to her life stage and sociocultural environment. This process begins at conception and continues over the nine months of pregnancy. The intense physicality of labor, its pain, blood, and nearness to death cannot hide or eliminate bodily sensations, yet may at times dim or complicate the existential experience.

In my experience, when the mother is very anxious, fearful, or connected to her helpers in a childlike, dependent way, regression may interfere with the transcendent experience. Birth is a transformative opportunity for the laboring woman to experience her boundaries, presence in the "here and now," and to connect with her internal processes. She may find support appropriate to her needs, accept it, and make use of it. She may sense that birth is a universal story, even while she is deeply immersed in her personal experience.

Anxiety may obscure these possibilities. Fears rooted in family legends, personal experiences, such as abandonment or abuse, and visceral memories of her own perinatal period may hinder the arrival of the transcendent. Yet transcendent experiences, belonging to the Universal, participating in Creation, deepening connections, can strengthen women's feminine and maternal competence, fostering fulfillment. They can reinforce bonds with the baby, the partner, and the helpers. Accepting help allows them to fulfill one of their "tasks": passing through the narrowing passage.

Conclusion

A transpersonal, humanistic midwife accompanies not only the physical unfolding of birth, but also the emotional and existential movements that arise within it. In the intensity of labor, forgotten layers of the psyche may surface, relational patterns may come alive, and questions of identity and meaning may quietly arise. Through attentive presence and ongoing self-reflection, the midwife can hold this complexity without intruding upon it. In this way, birth may become more than a biological event: it can be an integrating experience that touches the mother's sense of self, her relationships, and her place in the wider human story. The midwife's task is not to shape this process, but to accompany it with awareness and humility.

References

Bagdy, E., Mirnics, Zs., & Nyitrai, E. (Eds.). (n.d.). *Transzperszonális pszichológia és pszichoterápia* [Transpersonal psychology and psychotherapy]. Kulcslyuk Kiadó.

Orosz, K. (n.d.). *A transzperszonális pszichológia története* [The history of transpersonal psychology]. Budapest: Kheiron Transzperszonális Pszichológiai Tanácsadó Központ.

Orosz, K., & Nagy, Z. S. (2017). *A sorsformáló 9+1 hónap* [The destiny-shaping 9+1 months]. Kulcslyuk Kiadó.

Varga, K., & Suhai, G. (2010). *Szülés és születés: Lélektanon innen és túl* [Childbirth and birth: Beyond and within psychology]. Pólya Kiadó.

Yalom, I. D. (2006). *Egzisztenciális pszichoterápia* [Existential psychotherapy]. Animula Kiadó.

The Association for Prenatal and Perinatal Psychology and Health
Journal of Prenatal & Perinatal Psychology & Health
ISSN: 1097-8003 Vol. 40 No. 1 Spring 2026

The First Wound: How Pre- and Perinatal Experience Shapes Who We Become

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Some people move through the world open-hearted. They feel things deeply. They love freely, connect easily, and experience joy without armor. Others seem sealed off from something essential in themselves, not broken exactly, but dimmed. They go through the motions of living without ever quite landing inside their own experience. They think more than they feel. They reach for connection, but something always seems to get in the way. What accounts for this difference? What shapes how much or how little we are able to feel, how much love we let in, how much aliveness we carry through our days, how deeply we are able to connect with others and with ourselves?

This article proposes that one significant, and frequently overlooked, part of the answer lies in the experience we had before we could think, before we had words, before we even drew our first breath, in the womb, in the birth canal, in the first weeks and months of life, in what developmental psychologists call the prenatal and perinatal (PPN) period. Of course, who we become is shaped by many forces: genetics, temperament, culture, later childhood experience, and the ongoing relational field of our lives. But the argument here is that PPN experience exerts a particularly foundational influence, operating at the level of neural architecture and affective capacity before the structures of self and personality have even begun to consolidate.

In my 2011 phenomenological study (Ball, 2011), I explored the experience of nine adults who, through affect-based PPN psychotherapy, reconnected with what I term the *core self*: the open, feeling, undefended dimension of experience that I believe forms an essential foundation of a person's psychological and emotional life. That research, considered alongside converging evidence from developmental neuroscience (Schore, 2003a, 2003b), affective neuroscience (Damasio, 1999; Panksepp, 2001), and attachment theory (Bowlby, 1988; Siegel, 1999), suggests that the quality of PPN experience significantly shapes how fully a person may be able to live, love, and feel. The operative word is "shapes": PPN experience is not destiny, but it may establish a deep baseline from which all subsequent development proceeds. This article uses the term core self as a heuristic construct that overlaps with, but is not identical to, constructs described in attachment theory, affective neuroscience, and psychoanalytic traditions.

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We Begin Whole

The newborn infant, assuming its PPN environment has been benign, arrives in the world fully open, undefended, and alive to their experience in a way that most adults can barely remember and rarely achieve. The infant does not yet have the cognitive apparatus to filter reality through thought. They exist, instead, in pure feeling, in sensation and affect and an immediate, undiluted aliveness (Chamberlain, 1998; Janov, 2000; Stern, 1985). This is not merely a romantic idea. Neurobiological research supports it. The right brain, the hemisphere responsible for emotional life, felt sense, and affective connection, is dominant at birth and remains so for the first two to three years of life (Janov, 2000; Schore, 2003a; Siegel, 1999). During this time, the emotional self, what I call the core self, appears to form an important foundation from which the personality and cognitive self develop (Damasio, 1999; Janov, 2000; Panksepp, 2001). The infant's reality is largely the reality of their feelings. And if those feelings are met with warmth, attunement, safety, and love, the infant may remain relatively open, connected to itself, developing from a foundation of wholeness.

The concept of a core self, the felt, authentic, undefended self that underlies one's social and cognitive identities, has been articulated across multiple theoretical traditions. Winnicott (1971) called it the true self; Fosha (2000) described it through the concept of core affective experience and core state; Janov (2000, 2007) spoke of connected feeling and full consciousness; Stern (1985) traced its early formation through the infant's developing self-affectivity. Whatever the language, the underlying idea is consistent: there is a felt, essential self present in early life, and the degree to which a person remains connected to it depends heavily on the quality of early experience. But for many, that early openness does not endure undisturbed.

When the Connection Gets Lost

Pain and fear, in whatever form they arrive, cause the developing infant to begin to shut down. This is not a failure of character; it is biology doing its job. When experience becomes too overwhelming to integrate, the organism protects itself by narrowing its consciousness, disconnecting from the source of the pain. In infancy, that source is often the feelings themselves. And so, the infant begins to close off, from fear, from grief, from need, and in closing off from those feelings, they close off too from the deepest part of themselves (Janov, 2000, 2007; Schore, 2003a, 2003b). Because this happens while the brain is still forming, while the very architecture of the self is being laid down, that shutdown does not remain a temporary coping response. It becomes structural. As Schore (2002) wrote, "in the infant brain, states become traits" and "the effects of early relational trauma as well as the defenses against such trauma are embedded into the core structure of the evolving personality" (p. 18). The defended, less-feeling, less-connected state becomes the child's new normal. And then, all too often, the adult's.

The list of experiences capable of initiating this process is longer and more ordinary than most people realize. Feeling unwanted in the womb; absorbing a mother's chronic stress or depression through the hormonal environment of gestation; a difficult or traumatic birth, oxygen deprivation, forceps, the cascade of medical interventions that characterize most modern hospital deliveries;

separation from the mother at birth; neglect or under-stimulation in early infancy; too little touch; too little love (Emerson, 1996; Janov, 1983, 2000; Pearce, 2003; Verny, 2002). Emerson (1998) estimated that high-magnitude birth trauma was experienced in 45% of births, with a further 50% involving less severe trauma. Verny (2002) noted that pain medication is used in approximately 80% of all hospital births. In other words, the conditions capable of producing what the author is calling the first wound are not rare or extreme. They are built into the ordinary experience of coming into the world in modern Western culture.

The fetus and newborn are far more conscious, sensitive, and affected by their experience than mainstream medicine has historically acknowledged (Chamberlain, 1998; Janov, 1983; Verny, 2002). The developing organism does not have the neurological capacity to process and integrate overwhelming experience; it can only respond to it, by withdrawing, shutting down, or dissociating (Schore, 2003a; Siegel, 1999). And because this happens during critical periods of right-brain development, those responses may become enduring features of the person's neural organization, even if they are not always irreversible.

The Neurobiology of Early Closure

The neuroscience of early development offers important support for the clinical and theoretical picture described above. Schore's (2003a, 2003b) extensive research on right-brain development has shown that the right hemisphere, the seat of emotional life, empathy, felt sense of self, and affective regulation, develops in direct, experience-dependent response to the quality of early relational experience. Positive, attuned attachment produces a right brain capable of full emotional functioning. Dysregulated, frightening, or neglectful early experience produces a differently organized right brain: one with compromised regulatory systems, impaired capacity for felt experience, and a structural predisposition toward the defended, constricted ways of being that can feel indistinguishable from personality. Feldman (2017) has extended this picture, showing that biobehavioral synchrony between caregiver and infant, the moment-to-moment matching of physiological rhythms, gaze, and affect, is a primary mechanism through which the infant's social brain is organized, and that disruptions to this synchrony carry measurable consequences for long-term emotional development. Tottenham (2012) similarly found that early adversity, particularly in the form of disrupted caregiving, accelerates amygdala development in ways associated with heightened emotional reactivity and reduced regulatory capacity later in life.

Schore (2003a) described how, during the critical period of right-brain maturation, "prolonged episodes of intense and unregulated interactive traumatic stress induce not only heightened negative affect, but chaotic biochemical alterations that produce a developmentally immature, structurally defective right brain" (p. 222). The effects of early relational trauma, as well as the defenses against it, may become embedded into the core structure of the evolving personality (Schore, 2002, p. 18). This helps explain one pathway by which PPN experience can influence character, though genetic predispositions, later relationships, and ongoing environmental factors also play significant roles in shaping the developing self.

Damasio's (1999) foundational work on emotion and consciousness adds another dimension to this picture. He argued that consciousness itself, the basic sense of being a self, present, here, now, develops through feeling. Emotion is not a secondary phenomenon layered onto cognition; it is the very foundation from which the sense of self and consciousness arise. As Damasio (1999) put it, "consciousness begins as the feeling of what happens when we see or hear or touch" (p. 26). If early experience significantly impairs the organism's developing capacity to feel, it may, in turn, influence its consciousness and sense of self.

This has direct implications for understanding the potential legacy of PPN trauma. When early experience damages the foundations of feeling, when the child must begin to shut down their affective life to survive overwhelming pain or fear, it is not just emotions that may be compromised, but the very capacity for consciousness and self-experience (Janov, 2000, 2007; Schore, 2003a). The degree to which this occurs will vary considerably depending on the severity and duration of early stress, the presence of protective relationships, and the individual child's resilience. LeDoux (2002) observed that "because emotion systems coordinate learning, the broader the range of emotions that a child experiences the broader will be the emotional range of the self that develops" (p. 322). Early trauma, by flooding the system with fear and constricting the range of available feeling, sets up a foundation of defensiveness and negativity from which all subsequent development proceeds.

The Shape of a Life Without Full Connection

What does it look like when someone has lost touch with their core self, when the channel to their own feeling life has been narrowed or closed by early experience? It does not always look dramatic. Sometimes it looks like a successful, functioning life that feels hollow from the inside. It can look like living predominantly from the intellect, being far more comfortable in the world of thought and analysis than in the world of feeling. It can look like difficulty with intimacy, a subtle but persistent sense of distance, even in close relationships. It can look like anxiety without a clear object, or a depression that is less a feeling than an absence of feeling, a grey, muffled quality to experience, as if life is being lived behind glass. Liedloff (1975) described the infant deprived of adequate holding as growing up with "the consequent gap where his feeling of confidence ought to be, and his ineffable state of alienation," living "around the rim of the abyss where his sense of self has been stunted" (p. 71).

Disconnection from the core self can manifest as a relentless drive, for achievement, recognition, wealth, or status, that never quite satisfies, because what is actually being sought is something that cannot be found outside: a felt sense of self, a sense of mattering, a connection to one's own aliveness that was lost before there were any words for it (Firestone et al., 2003; Janov, 2000, 2007). It can manifest as addiction (West, 2003), as attention deficit disorder (Janov, 2007), as a propensity toward dissociation (Schore, 2002; Siegel, 1999), or simply as the pervasive sense that something is missing, a vague dissatisfaction, an emptiness that may not be recognized as such until something very different has been experienced.

The participants in my study (Ball, 2011) described their lives before reconnecting with their core selves in language strikingly consistent in its themes. “I didn’t know who I was and I didn’t know what I wanted to do,” said one. “I didn’t have much of a clue about myself,” said another. “I was dead inside,” said a third. One described traveling through life “with this suit of armor on… but the suit of armor imprisons me in my old self and my old pain.” Another described feeling bad without any release, feeling bad simply for who she was. These are not descriptions of catastrophic breakdown. They are descriptions of the particular, ordinary loneliness of being cut off from oneself.

What the Research Showed

In my phenomenological study (Ball, 2011), I interviewed nine adults (four women, five men, ranging in age from their thirties to eighties) who had undergone affect-based PPN psychotherapy, including Primal Therapy (Janov, 1983, 2000, 2007), Integrative Body Psychotherapy (Rand, 1996), and related approaches, and who had, at some point in their therapeutic process, reconnected with their core self. Using Giorgi’s (1985) phenomenological method, I analyzed the interview transcripts to identify the essential structure of the experience. It is important to note that the findings reflect the subjective accounts of a small, purposively selected sample and are interpretive in nature; they are intended to illuminate the phenomenon rather than to establish generalizable causal claims.

Four phases emerged consistently across participants: a before-connection state characterized by fear, defensiveness, disconnection from feeling, and a negative or absent sense of self; a connecting phase in which, within a safe therapeutic relationship, the participant allowed themselves to follow feeling back through their personal history to its earliest roots; a being-connected state of profound aliveness, relaxation, authenticity, and open-heartedness; and an after-connection phase in which the experience, though not sustained indefinitely, appeared to leave participants with a deepened access to their core self over time.

What my participants described upon connecting to their core self was striking in its consistency across nine different lives and histories. Again and again, the same qualities appeared: relief, as though something held for a very long time was finally released; a feeling of being real, present, and authentic; an aliveness; a peace; a sense of wholeness. And, perhaps most significantly for the purposes of this article, an opening of the heart, a capacity for love, compassion, and genuine connection that had been, to varying degrees, foreclosed. “When I’m connected to my core self, I’m alive,” said one participant. “It’s like coming back to humanity, coming back from the dead,” said another. “Being in touch with my spirit has gotten me in touch with the loving creature that I really am,” said a third. “I find myself being more compassionate and open,” said a fourth.

The central finding of my study was that connected and integrated affect, being connected to one’s core self, appeared to be closely associated with fuller consciousness and a greater sense of wholeness. The medium through which the core self was accessed was affect itself: not ideas about feeling, not analysis of feeling, but the actual experience of following feeling all the way back to

its roots and allowing it to be felt and integrated at last. These findings align well with Fosha's (2000, 2001) theoretical account of core affective experience and its capacity to produce a state transformation, a shift from defended, constricted experience to the open, clear, deeply felt state of the core self, and with Janov's (2000, 2007) concept of connected feeling and the fuller consciousness it may produce. While my study cannot establish causal relationships, the participants' accounts provide rich phenomenological support for these theoretical frameworks.

Feeling Is the Foundation

Central to everything described above is the role of feeling, not feeling as sentiment or emotional display but feeling as a fundamental mode of being. As Damasio (1999) argued, consciousness itself develops through feeling. The sense of self, the living, present, experiencing self, is grounded in the felt body and the affective life. Panksepp (2001) similarly argued that the long-term psychobiological consequences of early emotional experience are profound, shaping the neural substrates of the self for a lifetime.

This understanding has important implications. If, as neuroscience suggests, the capacity for feeling is foundational to consciousness and self, then anything that significantly impairs that capacity during its critical developmental period may compromise the quality of the life built upon it. The PPN period, the womb, birth, and early infancy, is precisely the time when that foundation is being laid. And the quality of what is laid there may exert a lasting influence on much of what follows, even as later experience continues to shape and sometimes repair the developing person.

Schore (2003a) wrote that "the core of the self is thus nonverbal and unconscious, and it lies in patterns of affect regulation" (p. 169), and how the quality of early attachment shapes those patterns at a neural level. Attachment theory (Bowlby, 1988) established that the security or insecurity of early attachment profoundly shapes the infant's developing sense of self and capacity for experience. Secure attachment enables the child to be in its experience and feel its life; insecure or disorganized attachment diminishes that capacity (Schore, 2003a; Siegel, 1999). PPN trauma, operating at an even more foundational level, before attachment in the conventional sense has even begun, can compromise the neural infrastructure upon which all subsequent attachment and feeling will rest.

Emde (1983) proposed that all human experience is fundamentally affective, as he put it, "our central nervous system is constructed in such a way that all experience is affective" (p. 173). The affective core, in his account, gives continuity to the self as it develops, and allows the person to recognize what is most important and most uniquely theirs. This is the core self: not a fixed structure, but a dynamic, affective process, the self that is present and feeling, without the interference of fear and defense.

The Stakes Are High and They Are Social

It would be a mistake to think of this as only a personal matter, a question of individual psychology and private suffering. The implications extend far beyond the individual. When a person is disconnected from their core self, their own feeling life, and their essential goodness,

they move through the world from a place of lack. That lack tends to drive behavior: the pursuit of external validation, difficulty with genuine empathy, proneness to aggression or addiction, or a kind of hollowed-out materialism. Research has linked suboptimal early attachment and PPN trauma to aggression and anti-social behavior (Chamberlain, 1995; Emerson, 1996; Schore, 2003a; Verny, 2002). Addiction may be understood as a symptom of early damage to one's sense of and connection to self (West, 2003).

Conversely, when people reconnect to their core selves, when the channel to feeling is reopened, the change tends to move in one consistent direction: toward more compassion, more openness, more genuine love. Research on consciousness transformation and spiritual experience has found that profound experiences of authentic selfhood and inner connection tend to produce increases in compassion and altruism, not as a philosophical commitment, but as a natural emergence arising from a shift in one's sense of self in relation to others (Vieten et al., 2006). The participants in my study (Ball, 2011) bore this out: as they reconnected to their core selves, they consistently described becoming more open, more compassionate, more able to give and receive love.

This suggests that the quality of PPN experience is not merely a private clinical matter. In aggregate, how a culture treats its prenates, newborns, and infants may significantly influence the degree of compassion, connection, and genuine humanity available in that culture. A society that routinely fails to protect the emotional needs of newborns and infants may, over time, produce patterns of disconnection whose social consequences are visible even when their earliest roots go unrecognized.

What This Means for How We Enter the World

If the PPN period is as formative as the evidence suggests, then the conditions under which we come into the world matter enormously, far more than the culture currently acknowledges.

A wanted pregnancy, in which the mother is emotionally supported and at peace, provides the developing fetus with a biochemical environment of safety and welcome. A stressful or unwanted pregnancy bathes the fetus in stress hormones that can alter the development of the very neural systems responsible for emotional regulation and felt sense of self (Anand & Scalzo, 2000; Edwards & Burnham, 2001; Huizink et al., 2004). A birth that is gentle, unhurried, and respectful of the newborn's experience, one in which the baby is welcomed with warmth and held immediately, gives the child a first experience of the world as safe and loving. A birth characterized by pain, urgency, and separation imprints something very different (Emerson, 1996, 1998; Janov, 1983; Verny, 2002).

The days, weeks, and months that follow, the quality of holding, touch, and emotional attunement the infant receives, the degree to which its needs are understood and met, the extent to which it is greeted with consistent love, are not minor variables in the story of who a person becomes. They are among the most formative influences on the neural and psychological infrastructure of the developing self (Schore, 2003a; Siegel, 1999; Verny, 2002), even as that self continues to develop and be shaped by experience across the entire lifespan.

None of this is meant to burden parents with impossible expectations. Most parents do the best they can with what they have. Many of the ways that modern culture approaches birth and early infancy are structural, matters of medical protocol, economic pressure, and cultural norms rather than individual choice. Changing them requires something larger than individual effort. But awareness matters. Understanding that the earliest experiences of a human life are not neutral, that they are laying down the very architecture of that person's capacity to feel, love, connect, and experience joy, is the beginning of taking those experiences seriously.

The Way Back

One of the most encouraging findings of my study, and of the broader field of prenatal and perinatal psychology, is that the connection that was lost does not have to stay lost. The core self, the open, feeling, authentic dimension of experience, does not appear to be destroyed by early trauma. Rather, it seems to become buried: covered over by layers of defense, repression, and disconnection that developed, necessarily, as ways of surviving overwhelming early pain. And with the right kind of therapeutic work, work that goes beneath the intellect, beneath language, down into the preverbal, bodily, affective foundations of the self, it can often be found again (Firestone et al., 2003; Fosha, 2000, 2001; Janov, 1983, 2000, 2007).

The PPN psychotherapy approaches most relevant to this work are those that use affect as the vehicle for accessing early experience: therapies in which the client is guided, in a safe and relationally held environment, to follow feeling back through the layers of personal history toward its earliest roots, ultimately reaching and re-experiencing the preverbal, somatic, and PPN material that has been held in the body and right brain since before memory (Janov, 1983, 2000; Lyman, 2005; Rand, 1996). This emphasis on the body as a repository of early experience aligns with van der Kolk's (2014) influential work on trauma and somatic memory, which demonstrated that traumatic experience, particularly when preverbal, is encoded in the body and nervous system in ways that bypass verbal processing and require body-based approaches to reach and resolve.

When this work goes deep enough, participants in my study reported not merely symptom reduction but a qualitatively different way of experiencing themselves and the world. Participants were clear about what that felt like. "It reorients me to another reality," said one. "All the filters through which I had been experiencing life were kind of either put aside or washed and cleaned, and I felt myself being really clear about a lot of things." "I find myself being more compassionate and open." "It's a sense of joy instead of sadness or pain or fear or frustration. I'm alive." These descriptions point to what may become possible when connection to the core self is restored: not just the reduction of suffering, but the recovery of something that was present at the beginning, an aliveness, a capacity for love, a felt connection to oneself and to others that I believe is every human being's birthright, however much early experience may have obscured it.

Limitations and Scope

This article draws in part on my earlier qualitative research (Ball, 2011), which was based on a small, purposive sample of individuals who had undergone PPN psychotherapy and reported

experiences of connection to a core self. While these accounts offer meaningful insight, they are retrospective and interpretive, and do not establish causal relationships or confirm the precise nature of early memory. More broadly, the framework presented here should be understood as a clinically informed and theoretically grounded perspective rather than a set of definitive empirical conclusions. Although it is supported by converging evidence from neuroscience, attachment theory, and clinical observation, the field of prenatal and perinatal psychology is still developing its empirical base. The ideas advanced here are intended to contribute to that ongoing dialogue and to invite further research using larger, more diverse samples and longitudinal approaches.

Conclusion

The arc of a human life begins much earlier than we tend to think, not at birth, but in the womb. Not at the first word or the first memory, but in the silent, felt, preverbal months of gestation, in the experience of birth itself, and in the quality of presence and love that greets the newborn in its first encounters with the world outside. How much we can feel, how deeply we can love, how freely we can experience joy, connection, and our own aliveness: these qualities are shaped by many forces across a lifetime. But the evidence reviewed here suggests that PPN experience plays a particularly foundational role, one whose influence may be felt long before any other formative encounter has had the chance to leave its mark.

Understanding this changes what must be attended to. It changes how we think about the conditions in which children enter the world and what we ask of medicine, policy, and culture. And it opens the door, for those who have lost connection to that original aliveness, to the possibility of finding their way home. Because the self that was present at the beginning, open and whole and feeling, appears to remain, under the armor, under the numbness, under the years of living at a careful remove from one's own deepest experience. That, at least, is what my research participants found, and what the broader field of PPN psychology continues to suggest.

References

Anand, K. J. S., & Scalzo, F. M. (2000). Can adverse neonatal experiences alter brain development and subsequent behavior? *Biology of the Neonate, 77*(2), 69–82. https://doi.org/10.1159/000014197

Ball, K. (2011). *Return to self: The experience of one's core self in prenatal and perinatal psychotherapy* [Unpublished doctoral dissertation]. Santa Barbara Graduate Institute.

Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. Routledge.

Chamberlain, D. (1995). What babies are teaching us about violence. *Journal of Prenatal & Perinatal Psychology & Health, 10*(2), 57–74.

Chamberlain, D. (1998). *The mind of your newborn baby*. North Atlantic Books.

Damasio, A. (1999). *The feeling of what happens: Body and emotion in the making of consciousness*. Harcourt.

Edwards, H. E., & Burnham, W. M. (2001). The developing nervous system: A series of review articles. *Pediatric Research, 50*(4), 433–440. https://doi.org/10.1203/00006450-200110000-00003

Emde, R. N. (1983). The prerepresentational self and its affective core. *Psychoanalytic Study of the Child, 38*, 165–192. https://doi.org/10.1080/00797308.1983.11823388

Emerson, W. R. (1996). The vulnerable prenate. *Journal of Prenatal & Perinatal Psychology & Health, 10*(3), 125–142.

Emerson, W. R. (1998). Birth trauma: The psychological effects of obstetrical interventions. *Journal of Prenatal & Perinatal Psychology & Health, 13*(1), 11–44.

Feldman, R. (2017). The neurobiology of human attachments. *Trends in Cognitive Sciences, 21*(2), 80–99. https://doi.org/10.1016/j.tics.2016.11.007

Firestone, R. W., Firestone, L. A., & Catlett, J. (2003). *Creating a life of meaning and compassion: The wisdom of psychotherapy*. American Psychological Association.

Fosha, D. (2000). *The transforming power of affect: A model for accelerated change*. Basic Books.

Fosha, D. (2001). The dyadic regulation of affect. *Journal of Clinical Psychology: In Session, 57*(2), 227–242. https://doi.org/10.1002/1097-4679(200102)57:2<227::AID-JCLP8>3.0.CO;2-1

Giorgi, A. (Ed.). (1985). *Phenomenology and psychological research*. Duquesne University Press.

Huizink, A. C., Mulder, E. J. H., & Buitelaar, J. K. (2004). Prenatal stress and risk for psychopathology: Specific effects or induction of general susceptibility? *Psychological Bulletin, 130*(1), 115–142. https://doi.org/10.1037/0033-2909.130.1.115

Janov, A. (1983). *Imprints: The lifelong effects of the birth experience*. Coward-McCann.

Janov, A. (2000). *The biology of love*. Prometheus Books.

Janov, A. (2007). *Primal healing: Access the incredible power of feelings to improve your health*. New Page Books.

LeDoux, J. (2002). *Synaptic self: How our brains become who we are*. Penguin Books.

Liedloff, J. (1975). *The continuum concept*. Da Capo Press.

Lyman, B. J. (2005). Prenatal and perinatal psychotherapy with adults: An integrative model for empirical testing. *Journal of Prenatal & Perinatal Psychology & Health, 20*(1), 58–76.

Panksepp, J. (2001). The long-term psychobiological consequences of infant emotions: Prescriptions for the twenty-first century. *Infant Mental Health Journal, 22*(1–2), 132–173. https://doi.org/10.1002/1097-0355(200101/04)22:1<132::AID-IMHJ5>3.0.CO;2-9

Pearce, J. C. (2003). *A brief overview of bonding and the clash of biological and cultural imperatives* [Conference presentation]. Congress of the Association for Prenatal and Perinatal Psychology and Health.

Perry, B. D., Pollard, R. A., Blakley, T. L., Baker, W. L., & Vigilante, D. (1995). Childhood trauma, the neurobiology of adaptation, and "use-dependent" development of the brain: How "states" become "traits." *Infant Mental Health Journal, 16*(4), 271–291. https://doi.org/10.1002/1097-0355(199524)16:4<271::AID-IMHJ2280160404>3.0.CO;2-B

Rand, M. (1996). As it was in the beginning: The significance of infant bonding in the development of self and relationships. *Journal of Child and Youth Care, 10*(4), 1–8.

Schore, A. N. (2002). Dysregulation of the right brain: A fundamental mechanism of traumatic attachment and the psychopathogenesis of posttraumatic stress disorder. *Australian and New Zealand Journal of Psychiatry, 36*(1), 9–30. https://doi.org/10.1046/j.1440-1614.2002.00996.x

Schore, A. N. (2003a). *Affect dysregulation and disorders of the self*. W. W. Norton.

Schore, A. N. (2003b). *Affect regulation and the repair of the self*. W. W. Norton.

Siegel, D. J. (1999). *The developing mind: How relationships and the brain interact to shape who we are*. Guilford Press.

Stern, D. N. (1985). *The interpersonal world of the infant: A view from psychoanalysis and developmental psychology*. Basic Books.

Tottenham, N. (2012). Human amygdala development in the absence of species-expected caregiving. *Developmental Psychobiology, 54*(6), 598–611. https://doi.org/10.1002/dev.20531

van der Kolk, B. A. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. Viking.

Verny, T. R. (2002). *Tomorrow's baby: The art and science of parenting from conception through infancy*. Simon & Schuster.

Vieten, C., Amorok, T., & Schlitz, M. M. (2006). I to we: The role of consciousness transformation in compassion and altruism. *Zygon: Journal of Religion & Science, 41*(4), 915–932. https://doi.org/10.1111/j.1467-9744.2006.00788.x

West, D. D. (2003). *Addiction as a search for the sacred* (Publication No. 3074957) [Doctoral dissertation]. ProQuest Dissertations and Theses.

Winnicott, D. W. (1971). *Playing and reality*. Routledge.

The Association for Prenatal and Perinatal Psychology and Health
Journal of Prenatal & Perinatal Psychology & Health
ISSN: 1097-8003 Vol. 40 No. 1 Spring 2026

Postpartum Digestion Is Not Normal Digestion: Why Nutrition Must Change After Birth

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Postpartum nutrition is often discussed as if the primary challenge were food quality. Common recommendations include prioritizing whole foods, focusing on nutrient density, avoiding ultra-processed ingredients, increasing protein intake, balancing blood sugar, and supporting hormones. These recommendations are familiar, widely accepted, and on their own, insufficient. An often-overlooked question is not what postpartum women should eat, but whether their bodies can digest and absorb what they are eating in the first place. This distinction matters more than most clinical conversations allow. Nourishment is not defined by the nutrient content of food alone, but by what the body can break down, transport, and utilize. Food that cannot be digested does not nourish—regardless of how nutrient-dense it appears on paper.

Postpartum nutrition may fall short when it assumes that digestion is intact. It is not. After birth, the maternal body enters a distinct physiological state characterized by tissue repair, blood volume replacement, immune recalibration, neurological reorganization, hormonal transition, and, for many women, sustained milk production (Chauhan & Tadi, 2022; Soma-Pillay et al., 2016). These processes are energetically expensive. To meet that cost, the body redistributes resources. Digestion, itself an energy-intensive process, is often deprioritized (McEwen, 1998; Taché et al., 2001). This is not pathology; it reflects underlying physiological adaptation.

Yet most nutritional frameworks applied to postpartum assume a digestive capacity that closely resembles that of a non-postpartum adult. They emphasize nutrient density without interrogating digestive load. The result is a persistent clinical paradox: women report eating well yet continue to experience fatigue, bloating, anxiety, nutrient deficiency symptoms, and stalled recovery. Symptoms persist despite apparent dietary adequacy. When digestion is impaired, nutritional sufficiency cannot be assumed from intake alone. This perspective makes a precise argument: postpartum nutrition cannot be evaluated without first understanding postpartum digestion. Until digestive and absorptive capacity are accounted for, debates about food quality, supplementation, or dietary composition are premature. Nutrient density is not the same as nourishment. And nourishment is not achieved through intake alone.

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Postpartum Is a Digestive Transition State, Not a Return to Baseline

Postpartum is commonly described as a period of recovery—a return to normal after pregnancy ends. This framing is clinically convenient and biologically inaccurate. Birth does not mark a return to baseline. It marks a transition between physiological states. During pregnancy, the maternal body undergoes extensive structural, hormonal, metabolic, and immunological adaptation to support fetal growth (Mor & Cardenas, 2010; Soma-Pillay et al., 2016). Blood volume expands. Organs shift. The endocrine system operates under a pregnancy-dominant hormonal environment. Birth does not instantly reverse these changes. Instead, the body enters a new phase of adaptation that prioritizes survival, repair, and milk production—a phase that is metabolically demanding and neurologically intense (Butte & King, 2005; Hoekzema et al., 2017).

Digestion sits at the center of this transition. The postpartum body must simultaneously repair tissue, restore blood volume, recalibrate hormonal signaling, regulate immune activity, support neurological adaptation amid sleep disruption, and produce breast milk around the clock (Butte & King, 2005; Eunice Kennedy Shriver National Institute of Child Health and Human Development [NICHD], 2017). Each of these processes carries a significant energetic cost. Systems essential for immediate survival and infant care are prioritized; others, such as digestion, often operate at reduced capacity. This is not dysfunction. It is triage.

Yet most nutritional guidance applied to postpartum assumes a digestive system functioning at full adult capacity. When postpartum is understood as a digestive transition state, several common observations begin to make clinical sense: increased bloating, slowed digestion, food aversions, heightened sensitivity to previously tolerated foods, and irregular appetite. These are not random symptoms, nor are they simply hormonal. They are predictable expressions of a body reallocating resources during a period of intense internal demand (McEwen & Wingfield, 2003). Until postpartum is recognized as a distinct digestive phase, not a nutritional continuation of pregnancy or a return to pre-pregnancy norms, any discussion of postpartum nutrition remains physiologically incomplete.

Digestion After Birth Is Governed by the Nervous System

Digestion is not a mechanical process. It is a neurological one. Long before food is broken down by enzymes or absorbed across the intestinal wall, digestion is initiated, regulated, and sustained by the nervous system, specifically through the coordinated activity of the enteric and autonomic nervous systems (Furness, 2012; Konturek et al., 2004). The enteric nervous system, sometimes described as the “second brain,” contains hundreds of millions of neurons embedded within the gastrointestinal tract and operates in close bidirectional communication with the central nervous system via the vagus nerve (Bonaz et al., 2018; Furness, 2012). Its function is directly responsive to the autonomic state. When parasympathetic tone predominates, digestive activity is robust: gastric acid is secreted, enzymes are released, motility is coordinated, and absorption proceeds efficiently. When sympathetic signaling predominates, these processes are suppressed in favor of more immediate survival demands (Mayer, 2000).

Postpartum is a neurologically intensive period. Birth itself initiates a cascade of neuroendocrine signaling, including activation of stress pathways necessary for survival and adaptation (Woolf, 1992). In the weeks and months that follow, the maternal nervous system remains under sustained demand: interrupted sleep, continuous sensory input, vigilance toward a dependent infant, physical recovery from labor, and hormonal recalibration all place ongoing load on autonomic regulation (Kim et al., 2010; Swain, 2011). This state is adaptive, not pathological. But it shapes digestion in predictable and measurable ways. Because autonomic regulation also underpins emotional processing and stress reactivity, these digestive shifts may co-occur with changes in mood, affect regulation, and maternal well-being, further complicating the clinical picture in the early postpartum period.

When neurological signaling shifts toward sympathetic dominance, digestion becomes constrained through specific pathways. Gastric acid production is reduced, as hydrochloric acid secretion depends on adequate vagal (parasympathetic) tone; when vagal tone is diminished, protein denaturation and early mineral absorption are impaired (Mayer, 2000; Taché et al., 2001). Pancreatic enzyme secretion becomes less robust, as the release of proteases, lipases, and amylases is regulated through neurohormonal signaling; under stress-dominant conditions, enzyme output may be insufficient for the volume or complexity of food consumed (Taché et al., 2001). Bile release and fat emulsification are disrupted, as bile flow requires coordinated nervous system signaling between the liver, gallbladder, and intestine; reduced bile availability compromises fat digestion and the absorption of fat-soluble nutrients even when dietary intake is adequate. Intestinal motility becomes less coordinated, as peristalsis relies on enteric nervous system signaling modulated by autonomic input; when this coordination is impaired, transit time may slow or become irregular, increasing fermentation, gas production, and discomfort while reducing efficient nutrient uptake (Furness, 2012).

Blood flow is redirected away from the gastrointestinal tract, as sympathetic-dominant states prioritize circulation toward muscles, brain, and vital organs; reduced splanchnic blood flow limits the gut's capacity to absorb and transport nutrients effectively (Mayer, 2000). Intestinal permeability may increase transiently, as stress signaling and inflammatory mediators can alter tight junction integrity, increasing permeability in the short term and heightening sensitivity to foods that were previously well tolerated (Bischoff et al., 2014). Finally, the gut microbiome becomes more reactive and less stable, as it underwent intentional adaptive shifts throughout the third trimester; birth, blood loss, stress hormones, and immune recalibration create further disruption, and antibiotic exposure or surgical delivery can amplify this instability (Koren et al., 2012).

None of these changes requires pathology. They reflect a digestive system operating under neurological constraint during a period of extraordinary physiological demand. Taken together, they create a clear clinical limitation: digestive capacity in postpartum is often reduced at the very moment nutritional demand is highest. When digestion and absorption are constrained, nourishment cannot be assessed by food quality alone. When nutritional demand rises as absorptive capacity narrows, depletion becomes the expected outcome.

Postpartum Digestion Is Not Primarily a Hormone Problem

Postpartum digestive changes are frequently attributed to hormonal fluctuation. This explanation is not incorrect, but it is incomplete, and when treated as sufficient, it obscures the actual physiological order of operations. After birth, the maternal endocrine environment shifts rapidly. Estrogen and progesterone fall sharply following placental separation. Prolactin rises to support lactation. Cortisol patterns shift in response to sleep disruption, metabolic demand, and physiological stress. Oxytocin is released in pulses during breastfeeding, skin-to-skin contact, and bonding. Each of these hormones has documented effects on gastrointestinal function (Coquoz et al., 2022; Liu et al., 2024; López-Vicchi et al., 2020; Nie et al., 2018).

What is often missed is why these hormonal changes behave as they do. Hormones do not initiate postpartum physiology. They respond to it. They respond first to the biological event of birth, and then continuously to the state of the nervous system in the weeks and months that follow. Hormones are messengers. They amplify, modulate, and reflect the body's internal conditions, but they do not operate as independent control systems.

Estrogen plays a modulatory role in gastrointestinal motility and mucosal integrity; its withdrawal after birth reflects the end of pregnancy physiology, not a malfunction (Nie et al., 2018). Progesterone's relaxing effect on smooth muscle is removed precipitously after birth, but this does not automatically restore digestive efficiency; it removes a stabilizing influence at the same moment the nervous system is adapting to recovery and metabolic strain (Coquoz et al., 2022). Dysregulated cortisol patterns, common in postpartum due to sleep fragmentation and physiological demand, are associated with suppressed digestive secretions, altered gut permeability, and impaired nutrient assimilation, but cortisol patterns are themselves shaped by nervous system signaling (Mayer, 2000; Woolf, 1992). Oxytocin can support parasympathetic activity under conditions of safety and rest, but it does not compensate for sustained sympathetic dominance; pulsatile oxytocin release during breastfeeding cannot neutralize ongoing sleep deprivation, unresolved pain, or inadequate recovery (Liu et al., 2024; Uvnas-Moberg & Petersson, 2005). The conclusion is the same regardless of framing: hormonal shifts after birth do not guarantee digestive efficiency. In many cases, they signal a body adapting under constraint, because hormones do not create digestive capacity; they respond to the conditions that shape it.

Depletion Is the Predictable Outcome of Modern Reproduction

Postpartum depletion is often framed as a consequence of what happens after birth. This framing is also incomplete. Many women enter postpartum already nutritionally compromised. The epidemiological data are consistent: an estimated 89% of postpartum women are vitamin D deficient (Ghafarzadeh et al., 2021); 80–90% of pregnant women fail to meet DHA recommendations (Nordgren et al., 2017); between 37% and 80% of postpartum women, depending on population, experience iron deficiency anemia (Azami et al., 2019; Holm et al., 2025); and approximately 79% of pregnancy women in specific regions demonstrate selenium deficiency (Filipowicz et al., 2022). These are not marginal deficiencies. They represent a pattern of systemic nutritional compromise upon entering the postpartum period.

Pregnancy is one of the most metabolically demanding periods in the human life cycle (King, 2000). The developing fetus requires a continuous supply of amino acids, fatty acids, minerals, and micronutrients. When intake or absorption is insufficient, the maternal body compensates by drawing on its own reserves, a biological priority system that protects fetal development at maternal cost (King, 2000). In theory, pregnancy nutrition would replenish what is used. In practice, modern conditions make this unlikely for many women: declining food quality, inadequate nutrition education, and systemic inequities in food access all constrain what women can consume and absorb during pregnancy.

Birth itself compounds this demand. Blood loss, tissue trauma, inflammation, and neurological stress are inherent to delivery, even in uncomplicated vaginal births (Soma-Pillay et al., 2016). What follows is not rest, but continued output: healing, caregiving, and often sustained milk production, which draw an additional 500 calories per day in metabolic expenditure (Butte & King, 2005; Eunice Kennedy Shriver NICHD, 2017). These processes draw from the same reserves that pregnancy already taxed.

When this sequence is viewed as a continuum, pregnancy, birth, and postpartum are compounding phases of depletion, and the emergence of symptoms becomes logical rather than alarming. It is important to be precise: this level of depletion is common under modern conditions, but it is not biologically optimal. It is not what the female body was designed to experience. The fact that depletion is widespread does not render it normal in any physiological sense. It indicates that the systems designed to protect and restore the postpartum mother have been eroded.

Layered on top of this nutritional vulnerability is the digestive constraint already described. When digestion and absorption are limited at the very moment demand peaks, the body compensates by drawing from internal reserves. Iron is mobilized from stores. Minerals are redirected from bone and tissue. Amino acids are diverted from muscle and connective tissue. Fatty acids are repurposed from cellular membranes. These adaptations are intelligent survival mechanisms, but over time, reserve depletion reduces resilience, repair slows, hormonal signaling becomes less stable, neurological buffering narrows, and immune tolerance shifts. What begins as adaptation becomes vulnerability. This is why postpartum depletion so often presents as a constellation of symptoms rather than a single deficiency. Fatigue, mood instability, cognitive fog, digestive sensitivity, immune suppression, musculoskeletal pain, and delayed recovery are not separate problems. They are expressions of a system operating without adequate reserves—a predictable outcome of modern reproduction, not individual maternal failure.

Postpartum Digestive Insufficiency: A Proposed Framework

At this point in the discussion, the central constraint in postpartum nutrition can be named clearly. The primary limitation is not food quality, caloric intake, or dietary compliance. It is what this perspective proposes to term postpartum digestive insufficiency: a temporary, biologically normal state in which the body's capacity to break down, absorb, and assimilate nutrients is intentionally reduced relative to demand. This is not dysfunction. It is design.

After birth, the maternal body shifts into a phase of conservation and prioritization. Energy is redirected toward healing, immune recalibration, neurological adaptation, and milk production. Digestion, an energetically expensive process, is modulated accordingly. The system does not shut down; it becomes selective. This selectivity functions as a physiological filter. It favors foods that are nutrient-dense, bioavailable, and low in digestive cost, while making foods that require excessive enzymatic output, prolonged motility, or high metabolic expenditure more difficult to process. In this way, the postpartum body does not signal weakness. It signals wisdom.

Historically, this signal appears to have been understood. Across cultures and time periods, postpartum nutrition converged around the same principles: foods that were cooked, softened, warmed, mineral-rich, and easy to assimilate (Carmody et al., 2011; Fu et al., 2022). The language varied—digestive fire, warmth, rebuilding—reflecting culturally distinct explanatory models of a shared physiological reality, but the biological recognition was consistent. The postpartum body does not require less nourishment. It requires nourishment that costs less energy to access.

It is important to distinguish between digestive insufficiency and depletion. Digestive insufficiency is biologically ideal in postpartum. Depletion is not. When digestive insufficiency is addressed with appropriate nutritional care, prioritizing foods for absorbability and digestive accessibility, reserves can be preserved, and recovery can proceed without significant drawdown. Depletion occurs not because digestive insufficiency exists, but because it is unrecognized and unsupported. This distinction reframes the clinical conversation. Nourishment in postpartum cannot be evaluated by caloric intake or nutrient density alone. It must be assessed by what the body can digest, absorb, and utilize without demanding more energy than the system can supply. Absorption, not intake, sets the ceiling on postpartum recovery.

Why Conventional Healthy Eating Often Backfires After Birth

When postpartum digestion is understood as an adaptive, energy-conserving state, a common clinical paradox becomes easier to explain. Many women report eating well after birth, prioritizing whole foods, fiber, raw vegetables, smoothies, salads, and dietary variety, yet feel progressively worse. Bloating increases. Energy declines. Digestion becomes uncomfortable. Recovery stalls. The issue is not that these foods lack nutrients, but that they often require more digestive work than the postpartum body is prepared to provide. Conventional healthy-eating frameworks are built for bodies with stable digestion, ample parasympathetic tone, and low repair demand. They assume robust stomach acid production, sufficient enzyme output, coordinated motility, and abundant metabolic energy. Postpartum digestion, by design, does not operate under these assumptions.

Raw foods, large salads, high-fiber meals, and cold or blended preparations all increase digestive workload (Carmody et al., 2011; Fu et al., 2022; Sun et al., 1988). Lean proteins require greater enzymatic breakdown than fats (Ajomiwe et al., 2024). Continuous dietary variety increases signaling demands on a system already under neurological load. Individually, these choices may appear healthful. Collectively, they can strain digestion when absorbability is the limiting factor.

This is why postpartum digestive distress is so often misattributed to food intolerance or sensitivity. The food itself is not inherently problematic. The timing and digestive cost are mismatched to physiological capacity. Importantly, this mismatch is temporary. Foods that are difficult to digest in early postpartum may be well tolerated once digestion stabilizes. The problem is not the food. It is the assumption that postpartum digestion should mirror non-postpartum digestion immediately after birth. When healthy eating is defined by nutrient density alone, without regard for digestive effort, it can unintentionally undermine nourishment. Postpartum nutrition does not require abandoning health principles. It requires reordering them. In this phase, nourishment is not determined by how wholesome a food appears, but by how efficiently the body can access its contents.

A Digestibility-First Framework for Postpartum Nutrition

Once postpartum digestion is understood as an adaptive, energy-conserving state, the first priority of nutrition becomes clear. The initial job of postpartum nutrition is not optimization, variety, or supplementation. It is reducing digestive load. This does not mean eating less. It means asking the digestive system to do less work to access what the body urgently needs. When digestion is supported in this way, absorption improves, energy is conserved, and nourishment becomes possible. Clinically, this framework suggests that early postpartum nutritional guidance should prioritize digestibility, meal simplicity, and nervous system support alongside nutrient adequacy.

Across cultures, time periods, and geographic regions, postpartum food traditions converged around this same biological principle (Carmody et al., 2011). While the ingredients differed, the logic remained the same. Foods were selected not only for nutrient density, but for how little energy they required to digest. These traditions emphasized foods that were already partially broken down before reaching the gut: long-cooked soups and stews, mineral-rich broths, slow-simmered proteins, softened vegetables, and warm or semi-solid meals that required minimal enzymatic effort and gentle motility to assimilate. In contemporary practice, this same principle applies to steaming, slow cooking, blending, and frozen preparations warmed before eating, where mechanical breakdown preserves nutrient content while reducing digestive demand.

Animal-based foods played a central role in many of these practices, not out of ideology, but practicality. Animal proteins provide complete amino acid profiles and highly bioavailable minerals in forms that the postpartum body can access more efficiently than many plant sources (Ajomiwe et al., 2024; Innis, 2008). When cooked slowly and consumed with fat and moisture, these foods reduce digestive demand while delivering concentrated nourishment. Fats were not avoided in traditional postpartum nutrition; they were relied upon. Fat provides a dense energy source with relatively low digestive cost and supports hormonal signaling, tissue repair, and neurological stability (Innis, 2008). Vegetables were not eliminated, but they were prepared differently: raw, fibrous forms gave way to cooked, softened, and blended preparations, in which heat, time, and moisture reduced the digestive burden. This approach is specific to the early postpartum period and is not intended as a long-term dietary model. High-fiber foods remain

essential to long-term health; the distinction here is preparation method and timing, not permanent elimination. As digestive capacity recovers, dietary variety, including raw and fibrous vegetables, naturally and appropriately expands.

These food choices reflect a precise biological logic: when digestive capacity is limited, nourishment must be made more readily accessible. Reducing digestive load does not restrict nourishment. It protects it. When food arrives in a form the body can receive without strain, the nervous system settles, absorption improves, and reserves are preserved rather than borrowed. Only after the digestive load is reduced does optimization make sense. Only after absorption improves does intake matter. Postpartum nutrition does not begin with rules. It begins with relief.

Clarifying the Scope of This Perspective

This perspective is not advocating for dietary restriction as that term is commonly understood. It is not promoting deprivation, food moralization, or a permanent set of rules. Foods are not the problem. Timing and digestive cost are. In a clinical culture that equates dietary abundance with optimal nourishment, it has become difficult to distinguish restriction from responsiveness. Postpartum nutrition is often evaluated through this lens, where simplifying meals or favoring certain preparations is assumed to be regressive or unnecessarily limiting. This framing reflects a misunderstanding of underlying physiology. Responding to the body's digestive signals is better understood as a form of physiological regulation, not as restriction.

This perspective also does not normalize postpartum symptoms as inevitable or benign. Fatigue, digestive distress, mood instability, cognitive fog, immune suppression, and chronic depletion are commonly described as normal features of new motherhood. That framing reflects normalization of unmet physiological need, not biological design. When symptoms emerge, they are evidence that the body's requirements are not being met, not evidence that the postpartum body is fragile or failing. Finally, this is not an argument for permanent limitation. As digestion stabilizes and recovery progresses, variety naturally expands. Foods that challenge digestion in early postpartum are often well tolerated later. The sequence matters. What is supportive at one phase may be unnecessary, or insufficient, at another.

Conclusion

The question that has long framed postpartum nutrition (What should women eat?) is downstream of a more fundamental one: what happens to digestion after birth, and how must nutrition respond? When postpartum digestion is understood as a biologically adaptive, energy-conserving state, shaped by nervous system regulation, hormonal responsiveness, microbiome disruption, and cumulative reproductive demand, the rest follows logically. Nutrition must adapt not because the postpartum body is fragile or deficient, but because it is doing precisely what it was designed to do. The failure of modern postpartum nutritional guidance is not that women are under-informed. It is that physiology has been misread. Digestive signals are overridden rather than respected, symptoms are normalized rather than contextualized, and nourishment is evaluated by intake instead of absorption.

The concept of postpartum digestive insufficiency proposed here offers a framework for reorienting clinical and nutritional guidance. When nutrition responds to digestion rather than demanding that digestion respond to nutrition, restoration becomes possible. Not through excess or optimization, but through alignment with the physiological reality of the postpartum body. This framework is conceptual and integrative, drawing on multiple domains of physiology and clinical observation. Direct empirical studies specifically examining digestive capacity in postpartum populations remain limited, highlighting the need for targeted research in this area.

This perspective calls for a shift in how postpartum nutrition is assessed, taught, and supported in clinical practice. Future research is needed to establish validated markers of postpartum digestive recovery, to examine the relationship between digestive insufficiency and symptom burden across diverse populations, and to evaluate the clinical outcomes of digestibility-first nutritional interventions. The evidence base for postpartum physiology is growing. The framework for applying it to nutrition has not kept pace. That gap is where the work ahead begins.

References

Ajomiwe, N., Boland, M., Phongthai, S., Bagiyal, M., Singh, J., & Kaur, L. (2024). Protein nutrition: Understanding structure, digestibility, and bioavailability for optimal health. *Foods, 13*(11), 1771. https://doi.org/10.3390/foods13111771

Azami, M., Badfar, G., Khalighi, Z., Qasemi, P., Shohani, M., Soleymani, A., & Abbasalizadeh, S. (2019). The association between anemia and postpartum depression: A systematic review and meta-analysis. *Caspian Journal of Internal Medicine, 10*(2), 115–124. https://doi.org/10.22088/cjim.10.2.115

Bischoff, S. C., Barbara, G., Buurman, W., Ockhuizen, T., Schulzke, J.-D., Serino, M., Tilg, H., Watson, A., & Wells, J. M. (2014). Intestinal permeability—a new target for disease prevention and therapy. *BMC Gastroenterology, 14*, 189. https://doi.org/10.1186/s12876-014-0189-7

Bonaz, B., Bazin, T., & Pellissier, S. (2018). The vagus nerve at the interface of the microbiota-gut-brain axis. *Frontiers in Neuroscience, 12*, 49. https://doi.org/10.3389/fnins.2018.00049

Butte, N. F., & King, J. C. (2005). Energy requirements during pregnancy and lactation. *Public Health Nutrition, 8*(7A), 1010–1027. https://doi.org/10.1079/phn2005793

Carmody, R. N., Weintraub, G. S., & Wrangham, R. W. (2011). Energetic consequences of thermal and nonthermal food processing. *Proceedings of the National Academy of Sciences, 108*(48), 19199–19203. https://doi.org/10.1073/pnas.1112128108

Chauhan, G., & Tadi, P. (2022). Physiology, postpartum changes. In StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK555904/

Coquoz, A., Regli, D., & Stute, P. (2022). Impact of progesterone on the gastrointestinal tract: A comprehensive literature review. *Climacteric, 25*(4), 337–361. https://doi.org/10.1080/13697137.2022.2033203

Eunice Kennedy Shriver National Institute of Child Health and Human Development. (2017). How many calories does breastfeeding use? https://www.nichd.nih.gov/health/topics/breastfeeding/conditioninfo/calories

Filipowicz, D., Szczepanek-Parulska, E., Kłobus, M., Szymanowski, K., Chillon, T. S., Asaad, S., ... & Ruchała, M. (2022). Selenium status and supplementation effects in pregnancy—A study on mother–child pairs from a single-center cohort. *Nutrients*, *14*(15), 3082.

Fu, J., Zheng, Y., Gao, Y., & Xu, W. (2022). Dietary fiber intake and gut microbiota in human health. *Microorganisms, 10*(12), 2507. https://doi.org/10.3390/microorganisms10122507

Furness, J. B. (2012). The enteric nervous system and neurogastroenterology. *Nature Reviews Gastroenterology & Hepatology, 9*(5), 286–294. https://doi.org/10.1038/nrgastro.2012.32

Ghafarzadeh, M., Shakarami, A., Tarhani, F., & Yari, F. (2021). Evaluation of the prevalence of vitamin D deficiency in pregnant women and its correlation with neonatal vitamin D levels. *Clinical Nutrition Open Science, 36*, 91–99. https://doi.org/10.1016/j.nutos.2021.02.007

Hoekzema, E., Barba-Müller, E., Pozzobon, C., Picado, M., Lucco, F., García-García, D., Soliva, J. C., Tobeña, A., Desco, M., Crone, E. A., Ballesteros, A., Carmona, S., & Vilarroya, O. (2017). Pregnancy leads to long-lasting changes in human brain structure. *Nature Neuroscience, 20*(2), 287–296. https://doi.org/10.1038/nn.4458

Holm, C., Neef, V., & Pavord, S. (2025). Management of postpartum anemia. *Blood Transfusion, 23*(1), 47–49. https://doi.org/10.2450/BloodTransfus.924

Kim, P., Leckman, J. F., Mayes, L. C., Feldman, R., Wang, X., & Swain, J. E. (2010). The plasticity of human maternal brain: Longitudinal changes in brain anatomy during the early postpartum period. *Behavioral Neuroscience, 124*(5), 695–700. https://doi.org/10.1037/a0020884

King, J. C. (2000). Physiology of pregnancy and nutrient metabolism. *American Journal of Clinical Nutrition, 71*(5 Suppl), 1218S–1225S. https://doi.org/10.1093/ajcn/71.5.1218s

Konturek, S. J., Konturek, J. W., Pawlik, T., & Brzozowski, T. (2004). Brain-gut axis and its role in the control of food intake. *Journal of Physiology and Pharmacology, 55*(1 Pt 2), 137–154.

Koren, O., Goodrich, J. K., Cullender, T. C., Spor, A., Laitinen, K., Bäckhed, H. K., Gonzalez, A., Werner, J. J., Angenent, L. T., Knight, R., Bäckhed, F., Isolauri, E., Salminen, S., & Ley, R. E. (2012). Host remodeling of the gut microbiome and metabolic changes during pregnancy. *Cell, 150*(3), 470–480. https://doi.org/10.1016/j.cell.2012.07.008

Liu, H., Yang, G., & Wang, H. (2024). Oxytocin/oxytocin receptor signalling in the gastrointestinal system: Mechanisms and therapeutic potential. *International Journal of Molecular Sciences, 25*(20), 10935. https://doi.org/10.3390/ijms252010935

López-Vicchi, F., De Winne, C., Brie, B., Sorianello, E., Ladyman, S. R., & Becu-Villalobos, D. (2020). Metabolic functions of prolactin: Physiological and pathological aspects. *Journal of Neuroendocrinology, 32*(11), e12888. https://doi.org/10.1111/jne.12888

Mayer, E. A. (2000). The neurobiology of stress and gastrointestinal disease. *Gut, 47*(6), 861–869. https://doi.org/10.1136/gut.47.6.861

McEwen, B. S. (1998). Stress, adaptation, and disease: Allostasis and allostatic load. Annals of the New York Academy of Sciences, 840, 33–44. https://doi.org/10.1111/j.1749-6632.1998.tb09546.x

McEwen, B. S., & Wingfield, J. C. (2003). The concept of allostasis in biology and biomedicine. *Hormones and Behavior, 43*(1), 2–15. https://doi.org/10.1016/s0018-506x(02)00024-7

Mor, G., & Cardenas, I. (2010). The immune system in pregnancy: A unique complexity. *American Journal of Reproductive Immunology, 63*(6), 425–433. https://doi.org/10.1111/j.1600-0897.2010.00836.x

Nie, X., Xie, R., & Tuo, B. (2018). Effects of estrogen on the gastrointestinal tract. *Digestive Diseases and Sciences, 63*(3), 583–596. https://doi.org/10.1007/s10620-018-4939-1

Nordgren, T. M., Lyden, E., Anderson-Berry, A., & Hanson, C. (2017). Omega-3 fatty acid intake of pregnant women and women of childbearing age in the United States: Potential for deficiency? *Nutrients, 9*(3), 197. https://doi.org/10.3390/nu9030197

Soma-Pillay, P., Nelson-Piercy, C., Tolppanen, H., & Mebazaa, A. (2016). Physiological changes in pregnancy. *Cardiovascular Journal of Africa, 27*(2), 89–94. https://doi.org/10.5830/CVJA-2016-021

Sun, W. M., Houghton, L. A., Read, N. W., Grundy, D. G., & Johnson, A. G. (1988). Effect of meal temperature on gastric emptying of liquids in man. *Gut, 29*(3), 302–305. https://doi.org/10.1136/gut.29.3.302

Swain, J. E. (2011). The human parental brain: In vivo neuroimaging. *Progress in Neuropsychopharmacology and Biological Psychiatry, 35*(5), 1242–1254. https://doi.org/10.1016/j.pnpbp.2010.10.017

Taché, Y., Martinez, V., Million, M., & Wang, L. (2001). Stress and the gastrointestinal tract III: Stress-related alterations of gut motor function: Role of brain corticotropin-releasing factor receptors. *American Journal of Physiology—Gastrointestinal and Liver Physiology, 280*(2), G173–G177. https://doi.org/10.1152/ajpgi.2001.280.2.G173

Uvnas-Moberg, K., & Petersson, M. (2005). Oxytocin, a mediator of anti-stress, well-being, social interaction, growth and healing. *Zeitschrift für Psychosomatische Medizin und Psychotherapie, 51*(1), 57–80. https://doi.org/10.13109/zptm.2005.51.1.57

Woolf, P. D. (1992). Hormonal responses to trauma. *Critical Care Medicine, 20*(2), 216–226. https://doi.org/10.1097/00003246-199202000-00011

The Association for Prenatal and Perinatal Psychology and Health
Journal of Prenatal & Perinatal Psychology & Health
ISSN: 1097-8003 Vol. 40 No. 1 Spring 2026

Eating Disorders and Maternal Mental Health

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As eating disorder prevalence rises globally, maternal eating disorders have become an area of increasing concern (Galmiche et al., 2019; Martínez-Olcina et al., 2020). It is currently estimated that one in twenty people are at risk of developing an eating disorder during pregnancy (Martínez-Olcina et al., 2020). Fears of gaining weight and feeling fat are hallmark characteristics of eating disorders (Ralph-Nearman et al., 2024), and the perinatal period represents a uniquely vulnerable time due to rapid body changes, hormonal fluctuations, and psychosocial stressors that can exacerbate underlying risk factors (Sebastiani et al., 2020).

More than 40% of women report concerns about their weight during pregnancy, 75% worry about weight retention one month postpartum, and 70% attempt weight loss within four months postpartum (Martínez-Olcina et al., 2020; Zerwas & Claydon, 2014). Roughly 15% of pregnant individuals have had an eating disorder previously in their lives. About 5% of women experience an eating disorder during pregnancy (Bye et al., 2021), and about 13% experience an eating disorder during the postpartum period (Pettersson et al., 2016). As maternal eating disorders can contribute to adverse perinatal and neonatal outcomes, it is critical that eating disorders are identified and addressed appropriately.

Maternal Mental Health Disorders and Eating Disorders

Eating disorders (EDs) are closely associated with a range of maternal mental health conditions. They rarely occur in isolation during the perinatal period. Those with current or past eating disorders are significantly more likely to experience perinatal depression and anxiety, with studies showing rates up to two to three times higher than among people without eating disorders (Easter et al., 2014). They are also at increased risk for developing posttraumatic stress symptoms, particularly associated with pregnancy and childbirth (Easter et al., 2014). These comorbidities not only compound the psychological burden on mothers but also increase the risk of relapse during and after pregnancy.

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Originally published: Policy Center for Maternal Mental Health and National Eating Disorders Association. (2026, February). *Eating Disorders and Maternal Mental Health* [Issue brief]. https://policycentermmh.org/eating-disorders-and-maternal-mental-health/ Please send correspondence to Cindy Herrick: cindy.herrick@policycentermmh.org

The intersection of eating disorders and maternal mental health is particularly concerning, given that both are associated with elevated mortality risk (Arcelus et al., 2011; Mangla et al., 2019). With respect to maternal mental health, suicide is a leading cause of maternal mortality in the United States (Mangla et al., 2019), and eating disorders have the second-highest mortality rate of any psychiatric illness (Arcelus et al., 2011). Despite these risks, perinatal mental health clinical practice guidelines do not address screening and treatment of EDs, and there are no professional association recommendations to screen for EDs during the perinatal period. Additionally, research examining the links among maternal mortality, eating disorders, and suicide remains scarce (Howard et al., 2014). Recognizing the connection between eating disorders and maternal mental health is crucial to ensuring that women receive comprehensive care that addresses both psychological and physical risks.

Types of Eating Disorders

The following are common eating disorders (Martínez-Olcina et al., 2020):

- Anorexia Nervosa involves severe restriction of food intake and intense concerns about weight or body image.
- Bulimia Nervosa is characterized by cycles of binge eating followed by compensatory behaviors such as self-induced vomiting, fasting, excessive exercise, or misuse of laxatives, diuretics, or other medications.
- Binge Eating Disorder involves recurrent episodes of consuming unusually large amounts of food, often rapidly and beyond the point of fullness, typically accompanied by feelings of loss of control, shame, or guilt.
- Avoidant/Restrictive Food Intake Disorder (ARFID) involves extreme restriction in the amount or type of food eaten, unrelated to body image concerns, and may stem from sensory sensitivities, low interest in eating, or fear of negative consequences such as choking or vomiting.
- Pica is characterized by the ingestion of non-food items with no nutritional value for reasons that are not developmentally or culturally appropriate.
- Other Specified Feeding or Eating Disorders (OSFED) describes clinically significant eating concerns that do not meet the full criteria for other diagnoses. Examples include atypical anorexia, subthreshold bulimia nervosa, or binge eating disorder, purging disorder, and night eating syndrome.

Eating disorders during pregnancy most often include anorexia nervosa, bulimia nervosa, binge eating disorder, and other specified feeding and eating disorders (OSFED).

All eating and body image concerns should be taken seriously, regardless of whether a diagnosable disorder is present, as disordered eating can present a range of risks and complications even when full diagnostic criteria are not met (Mantel et al., 2020). Disordered eating encompasses a broad range of unhealthy behaviors and obsessive thoughts regarding nutrition, body image, and weight management. While these habits, such as chronic dieting, food restriction, bingeing, or the

misuse of exercise and weight-loss aids, can be physically and emotionally taxing, they generally do not reach the specific clinical thresholds required for a formal eating disorder diagnosis (Raquel Franzini Pereira & Marle Alvarenga, 2007).

Consequences

The consequences of maternal eating disorders are far-reaching, increasing the risk of both maternal and infant morbidity and mortality. Women with a history of eating disorders have a higher risk of relapse during the perinatal period (Sommerfeldt et al., 2022). Severe disordered eating during pregnancy is associated with higher rates of postpartum anxiety, depression, and suicidality, as well as increased risk of obstetric complications such as gestational diabetes, preeclampsia, and cesarean delivery (Chan et al., 2019; Janas-Kozik et al., 2021).

Infants born to mothers with eating disorders face heightened risks such as low Apgar scores, abnormal birth weights, premature delivery, feeding difficulties, developmental impacts, and attachment challenges (Chan et al., 2019; Mantel et al., 2020; Martini et al., 2020; Nilsson et al., 2024; Watson et al., 2017; Zerwas & Claydon, 2014). Maternal eating disorders can also have intergenerational and secondary consequences: negative perinatal outcomes may increase the risk of eating disorders in adult offspring, and families impacted by maternal eating disorders may experience relational strain, caregiver stress, and financial burden (Martini et al., 2020).

Barriers to Screening and Treatment

Despite the known risks, multiple barriers prevent individuals from receiving adequate care. Although many providers screen for anxiety and depression, eating disorders are rarely included in traditional perinatal assessments due to time constraints, limited provider training, and persistent cultural stigma that discourages open discussion of disordered eating (Penwell et al., 2024). Even when risk is identified, specialized referral options are often scarce. Few providers specialize in eating disorders during the perinatal period, making referrals challenging, particularly without integrated networks that connect OB-GYNs, mental health providers, and registered dietitians who specialize in eating disorders (Sebastiani et al., 2020).

Telehealth has expanded access for some, but geographic barriers remain for many people in underserved or rural areas (Penwell et al., 2024). Financial accessibility further compounds these gaps. Insurance coverage for eating disorder treatment is frequently inconsistent or inadequate, which leaves many patients unable to afford the care they need (Penwell et al., 2024). Addressing these barriers requires systemic reforms that expand provider education, strengthen integrated care pathways, and ensure equitable insurance coverage for maternal eating disorder treatment.

Community Recommendations

To effectively address maternal eating disorders, interventions must extend beyond clinical care and leverage community resources. Community-based strategies can reduce stigma, increase

early detection, and provide ongoing support for pregnant and postpartum individuals at risk. Key recommendations include:

- **Integrate eating disorder screenings into perinatal mental health assessments.** Early detection of eating disorders reduces the risk of developing complications, and screening questions can be incorporated into existing tools to minimize adding additional strain on providers.
- **Develop integrated care models.** Creating collaborative care environments between OB-GYNs, mental health providers, and registered dietitians ensures appropriate referrals to eating disorder-informed specialists, which can reduce relapse risk and improve health outcomes for both mothers and infants.
- **Expand local resource accessibility.** Enhancing local and digital directories can help providers and families easily locate telehealth services, specialists, and other community resources.
- **Launch public education and awareness campaigns.** Partnering with community organizations, maternal health programs, and schools can raise awareness regarding eating disorder risks during pregnancy and highlight the importance of early recognition and support.
- **Build peer and family support networks.** Community-based peer groups and family education initiatives promote understanding of eating disorders while providing safe, non-clinical spaces for connection and support.
- **Encourage culturally responsive approaches.** Collaboration with local leaders can ensure messaging and services reflect the cultural and linguistic needs of diverse communities, helping reduce stigma and improve accessibility.

By strengthening awareness, reducing stigma, and building integrated care pathways, communities can help bridge the gap between clinical services and the lived experiences of mothers.

Policy Recommendations

Federal maternal mental health programs and state-level perinatal quality collaboratives rarely address eating disorders. To reduce structural barriers to screening, treatment, and support, federal, state, and institutional policies should promote sustainable change by improving affordability, accountability, and access. Policy recommendations include:

- **Mandate insurance coverage.** Ensure comprehensive coverage for eating disorder treatment, including nutritional counseling, therapy, and telehealth services during the pregnancy and postpartum periods.
- **Expand provider training and continuing education.** Fund training initiatives to equip OB-GYNs, midwives, primary care providers, and mental health professionals with the knowledge to recognize and address eating disorders in perinatal populations.

- **Increase research funding.** Expand federal investment in maternal eating disorder research to advance understanding of prevalence, screening tools, and effective interventions that guide evidence-based policy and best practices.
- **Enhance perinatal screening protocols.** Require the incorporation of eating disorder screenings into routine prenatal and postpartum assessments alongside anxiety and depression screenings.
- **Incentivize integrated care models.** Encourage health systems to establish multidisciplinary perinatal care teams that connect obstetric, psychiatric, and nutrition services.

Recognizing and addressing maternal eating disorders within policy frameworks is essential to transforming perinatal mental health care and improving outcomes for mothers, infants, and future generations.

Conclusion

Maternal eating disorders remain an underrecognized but critical threat to maternal and infant health. Despite evidence of their prevalence and serious consequences, screening, treatment, and policy responses remain insufficient. Pregnancy and the postpartum period are times of heightened vulnerability, and without deliberate attention, mothers and infants face preventable medical, psychological, and intergenerational harm. Addressing these challenges will require community engagement, improved provider education, and systemic policy reform that integrates eating disorders into the broader maternal mental health landscape. With these changes, we can close care gaps, reduce stigma, and improve the health and well-being of mothers, infants, and families for generations to come.

For additional information, see the National Eating Disorders Association resource: nationaleatingdisorders.org/what-are-eating-disorders/.

References

Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders: A meta-analysis of 36 studies. *Archives of General Psychiatry*, *68*(7), 724–731. https://doi.org/10.1001/archgenpsychiatry.2011.74

Bye, A., Martini, M. G., & Micali, N. (2021). Eating disorders, pregnancy and the postnatal period: A review of the recent literature. *Current Opinion in Psychiatry*, *34*(6), 563–568. https://doi.org/10.1097/yco.0000000000000748

Chan, C. Y., Lee, A. M., Koh, Y. W., Lam, S. K., Lee, C. P., Leung, K. Y., & Tang, C. S. K. (2019). Course, risk factors, and adverse outcomes of disordered eating in pregnancy. *International Journal of Eating Disorders*, *52*(6), 652–658. https://doi.org/10.1002/eat.23065

Easter, A., Solmi, F., Bye, A., Taborelli, E., Corfield, F., Schmidt, U., Treasure, J., & Micali, N. (2014). Antenatal and postnatal psychopathology among women with current and past eating disorders: Longitudinal patterns. *European Eating Disorders Review*, *23*(1), 19–27. https://doi.org/10.1002/erv.2328

Galmiche, M., Déchelotte, P., Lambert, G., & Tavolacci, M. P. (2019). Prevalence of eating disorders over the 2000–2018 period: A systematic literature review. *The American Journal of Clinical Nutrition*, *109*(5), 1402–1413. https://doi.org/10.1093/ajcn/nqy342

Howard, L. M., Molyneaux, E., Dennis, C.-L., Rochat, T., Stein, A., & Milgrom, J. (2014). Non-psychotic mental disorders in the perinatal period. *The Lancet*, *384*(9956), 1775–1788. https://doi.org/10.1016/s0140-6736(14)61276-9

Janas-Kozik, M., Żmijowska, A., Zasada, I., Jelonek, I., Cichoń, L., Siwiec, A., & Wilczyński, K. M. (2021). Systematic Review of Literature on Eating Disorders During Pregnancy—Risk and Consequences for Mother and Child. *Frontiers in Psychiatry*, *12*. https://doi.org/10.3389/fpsyt.2021.777529

Mangla, K., Hoffman, M. C., Trumpff, C., O'Grady, S., & Monk, C. (2019). Maternal self-harm deaths: An unrecognized and preventable outcome. *American Journal of Obstetrics and Gynecology*, *221*(4), 295–303. https://doi.org/10.1016/j.ajog.2019.02.056

Mantel, Ä., Hirschberg, A. L., & Stephansson, O. (2020). Association of maternal eating disorders with pregnancy and neonatal outcomes. *JAMA Psychiatry*, *77*(3), 285. https://doi.org/10.1001/jamapsychiatry.2019.3664

Martínez-Olcina, M., Rubio-Arias, J. A., Reche-García, C., Leyva-Vela, B., Hernández-García, M., Hernández-Morante, J. J., & Martínez-Rodríguez, A. (2020). Eating disorders in pregnant and breastfeeding women: A systematic review. *Medicina*, *56*(7), 352. https://doi.org/10.3390/medicina56070352

Martini, M. G., Barona-Martinez, M., & Micali, N. (2020). Eating disorders, mothers and their children: A systematic review of the literature. *Archives of Women's Mental Health*, *23*(4), 449–467. https://doi.org/10.1007/s00737-020-01019-x

Nilsson, I. A. K., Ozsvar, J., Gissler, M., & Lavebratt, C. (2024). Maternal eating disorders, body mass index, and offspring psychiatric diagnoses. *JAMA Network Open*, *7*(10), e2440517. https://doi.org/10.1001/jamanetworkopen.2024.40517

Penwell, T. E., Bedard, S. P., Eyre, R., & Levinson, C. A. (2024). Eating disorder treatment access in the United States: Perceived inequities among treatment seekers. *Psychiatric Services*, *75*(10), 944–952. https://doi.org/10.1176/appi.ps.20230193

Pereira, R. F. & Alvarenga, M. (2007). Disordered eating: Identifying, treating, preventing, and differentiating it from eating disorders. *Diabetes Spectrum*, *20*(3). https://doi.org/10.2337/diaspect.20.3.141

Pettersson, C. B., Zandian, M., & Clinton, D. (2016). Eating disorder symptoms pre- and postpartum. *Archives of Women's Mental Health*, *19*(4), 675–680. https://doi.org/10.1007/s00737-016-0619-3

Ralph-Nearman, C., Hooper, M. A., Hunt, R. A., & Levinson, C. A. (2024). Dynamic relationships among feeling fat, fear of weight gain, and eating disorder symptoms in an eating disorder sample. *Appetite*, *195*, 107181. https://doi.org/10.1016/j.appet.2023.107181

Sebastiani, G., Andreu-Fernández, V., Herranz Barbero, A., Aldecoa-Bilbao, V., Miracle, X., Meler Barrabes, E., Balada Ibañez, A., Astals-Vizcaino, M., Ferrero-Martínez, S., Gómez-Roig, M. D., & García-Algar, O. (2020). Eating disorders during gestation: Implications for mother's health, fetal outcomes, and epigenetic changes. *Frontiers in Pediatrics*, *8*. https://doi.org/10.3389/fped.2020.00587

Sommerfeldt, B., Skårderud, F., Kvalem, I. L., Gulliksen, K. S., & Holte, A. (2022). Bodies out of control: Relapse and worsening of eating disorders in pregnancy. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.986217

Watson, H. J., Zerwas, S., Torgersen, L., Gustavson, K., Diemer, E. W., Knudsen, G. P., Reichborn-Kjennerud, T., & Bulik, C. M. (2017). Maternal eating disorders and perinatal outcomes: A three-generation study in the Norwegian Mother and Child Cohort Study. *Journal of Abnormal Psychology*, *126*(5), 552–564. https://doi.org/10.1037/abn0000241

Zerwas, S., & Claydon, E. (2014). Eating disorders across the life-span: From menstruation to menopause. In *Women's reproductive mental health across the lifespan,* D. L. Barnes (ed.) (pp. 237–261). Springer International Publishing. https://doi.org/10.1007/978-3-319-05116-1_13

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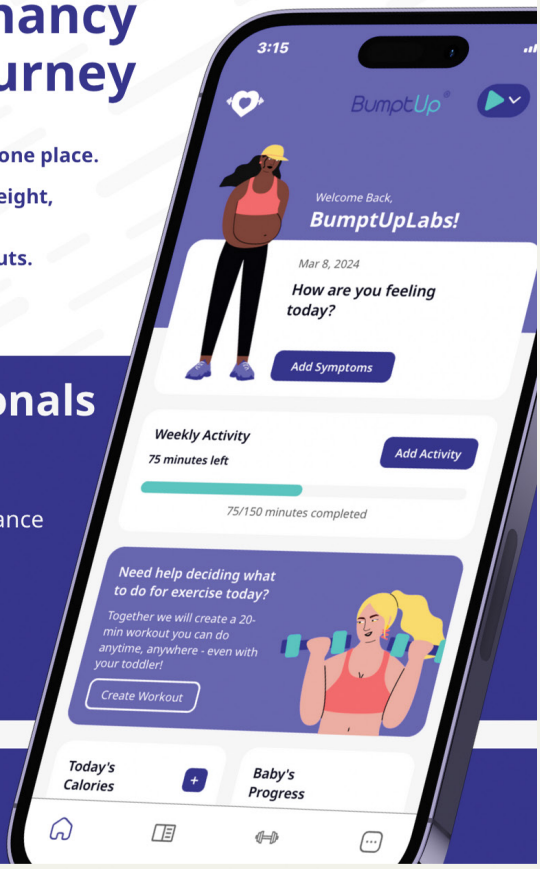

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